CVA Projects

Improving Small Scale Farm Productivity Sustainably Using Natural Farming Methods in East and Central Africa to include Zambia and Tanzania

Farmer feeding local chicken in Nduli village, Tanzania

Dr. H. Mwamhehe introducing CVA Local chicken project at Nduli village, Tanzania
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President's Column

A historic agreement was signed between the Commonwealth Veterinary Association and the World Organization for Animal Health (OIE) in Paris this May. This letter of intent assumes great significance since both CVA and OIE are committed to working closely together to coordinate activities related to livestock health and animal welfare in the less developed countries of the world. The emergence of zoonotic diseases especially Rabies, the growing threat of transboundary animal diseases and the impact of environmental changes and globalization, food safety and security highlight the need for collaboration between these two organizations. The CVA looks forward to this relationship and is confident that it will be of mutual benefit.

Another significant event which could have a great impact on the goals and objectives of the CVA was the release of the GALVmed's Strategy Paper which identifies livestock as fundamental to Africa's agricultural development and recognizes the fact that this sector suffers from numerous problems which need addressing especially if we have to reduce poverty. In addition there is a need to address the critical issue of feeding the population of Africa. The report also points out that though the African farmers are working harder and more people are taking up farming, productivity appears not to have increased. This is indeed a grave concern and needs to be addressed by the Veterinary community. The CVA has always been engaged in livestock and farmer development programmes in Africa, whether it is the training of Kenyan women farmers in pastoral management or poverty alleviation programmes such as goat rearing in Choma, Zambia or dairy production in Uganda. However, more programmes need to be initiated in Africa and it would be a great opportunity if CVA can liaise with GALVmed and OIE to address the issues which have been pointed out in the strategy paper.

The Officers of the CVA will be meeting in London in late August to finalise the Work Plan of the CVA, following the recommendations and resolutions of the 5th Pan Commonwealth Conference in Accra, Ghana last year. At all stages the CVA Work Plan has been our guiding light. I know too well the distractions that are always tempting organizations that don’t focus on their priority areas. Conferences which do not have follow-up programmes can lose a deal of their impetus. We’ve worked hard to avoid this. I am confident that all the above would be taken into consideration while preparing the Work Plan.

I would once again remind all the Councillors to liaise with their national associations and keep them informed of the activities of the CVA.

I am confident that CVA will continue to work vigorously in helping to develop means of supporting Commonwealth Veterinarians and helping to prepare them for future change.

July 2012

S. Abdul Rahman
President
Nutritional Assessment Guidelines

WSAVA Nutritional Assessment Guidelines Task Force Members*

Abstract

Careful assessment of nutritional needs of dogs and cats must be taken into consideration in order to maintain optimum health, be part of a treatment regime for a diseased state, or to maximize the quality of life in all animals. Therefore, the goal of these WSAVA Guidelines is that a nutritional assessment and specific nutritional recommendation be made on every patient on every visit. This will become known as the 5th Vital Assessment (5VA), following the four vital assessments of temperature, pulse, respiration and pain that are already addressed on each patient interaction.

Routinely doing a brief screening evaluation of the nutritional status during history taking and the physical examination can be seamlessly performed as part of every patient exam. Nutrition-related risk factors that can be easily identified from the history and physical examination include age (growing or old), suboptimal body condition score (overweight or thin), muscle loss, atypical or homemade diet, medical conditions, or changes in appetite. An extended evaluation would follow, if one or more risk factors is identified on screening. These guidelines provide criteria to evaluate the animal and the diet, as well as key feeding and environmental factors. In addition, recommendations for interpretation, analysis, and action are included so that a plan for optimizing the animal’s nutritional status can be instituted.

Client compliance with nutritional recommendations requires input from the veterinarian, veterinary technicians/nurses, and the hospital staff. A team approach to continuous nutritional education, implementation of appropriate protocols, and focused client communication, utilizing these WSAVA Nutritional Guidelines, are key components to reach this 5VA goal.

Introduction

The WSAVA has developed a global initiative to standardize five vital signs as part of the standard physical examination for all small animals. These are:

1. Temperature
2. Pulse
3. Respiration
4. Pain assessment
5. Nutritional assessment

Good nutrition enhances pets’ quality and quantity of life. The WSAVA 5th Vital Assessment Group (V5) has utilized the science-based Nutritional Assessment Guidelines from the American Animal Hospital Association (AAHA) to develop global Nutritional Assessment Guidelines as an easy to use tool for veterinarians around the world for optimizing the health and well-being of pets, as an integral part of optimal patient care. Incorporating nutritional assessment into regular patient care is critical for maintaining pets’ health, as well as their response to disease and injury. Incorporating the screening evaluation described in these guidelines as the fifth vital sign in the standard physical examination requires little to no additional time or cost. Yet, incorporating nutritional assessment and recommendations into the care of small animals helps to develop a partnership between the owner and veterinary healthcare team, resulting in healthier pets.

The specific goals of this document are to provide:

- Awareness of the importance of nutritional assessment in dogs and cats.
- Guidelines for nutritional evaluation of dogs and cats to promote optimal health and response to disease.
- Evidence and tools to support recommendations.

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The positive impact of proper nutrition on health and disease is well established in all animals. Appropriate feeding throughout all life stages can help prevent diet-associated diseases, as well as to assist in the management of other diseases. For example, foods formulated for dogs and cats with chronic kidney disease have been shown to provide significant benefits.\textsuperscript{13}

The National Research Council (NRC)\textsuperscript{4} of the US National Academy of Sciences is the leading provider of nutrient recommendations for dogs and cats, and countries have developed nutrient guidelines and regulations for dogs and cats [e.g., Federation of Pet Food Industry (FEDIAF), Association of American Feed Control Officials (AAFCO)].\textsuperscript{5,6} Assurance of proper nutritional health, however, entails more than meeting nutrient profiles; additional factors must be considered. Nutritional assessment considers several factors that are described in detail in this document. An iterative process, in which each factor affecting the animal’s nutritional status is assessed and reassessed as often as required, provides a thorough nutritional assessment of the small animal patient.\textsuperscript{7,8} The factors to be evaluated include the animal, the diet, and feeding management and environmental factors, as described below.

**Animal-specific factors**

Animal-specific factors include the age, physiological status and activity of the pet. Problems related to animal factors are referred to as nutrient sensitive disorders (e.g., intolerances, allergies, and organ specific diseases). Diet choice for these patients should be restricted to those formulated to meet the disease-associated nutritional limitations of the specific patient.

**Diet-specific factors**

Diet-specific factors include the safety and appropriateness of the diet fed to that animal in question. Problems related to diet factors are referred to as diet-induced disorders (e.g., nutrient imbalances, spoilage, contamination, adulteration). Patients with these disorders may be treated by feeding a diet known to be appropriate for the patient.

**Feeding management and environmental factors**

Feeding factors include the frequency, timing, location and method of feeding, while environmental factors include space and quality of the pets’ surroundings. Problems related to feeding and environmental factors are referred to as feeding-related and environment-related disorders (e.g., over- or underfeeding, excessive use of treats, poor husbandry, competitive eating, or lack of appropriate environmental stimulation). These situations require effective communications to produce the appropriate behavioral changes in the client.

**Nutritional Assessment**

Nutritional assessment is a two part process (Fig 1).

1. **Screening Evaluation** is performed on every patient. Based on this screening, pets that are healthy and without risk factors need no additional nutritional assessment.

2. **Extended Evaluation** is performed when one or more nutrition-related risk factors are found or suspected based on the screening evaluation.

The interview portion of evaluation should be performed by a person trained to elicit required information from the caregiver most knowledgeable about the pet(s). A detailed nutritional history should be obtained. A variety of forms are available for recording these findings.\textsuperscript{10,11}

**Screening Evaluation**

Nutritional screening is part of routine history taking and physical examination of every animal. Information collected should include assessment of factors specific to the animal, the diet, and feeding management/environment.

Certain life factors, by themselves, may not call for an extended evaluation if the animal is otherwise healthy. Low or high activity level, multiple pets in the home, gestation, lactation, or age < 1 year or > 7 years, all create a need for closer scrutiny. Although these factors by themselves may not trigger an extended evaluation, they should cause the veterinarian to scrutinize the pet’s situation more closely.

Specific risk factors known to influence nutritional status include those listed in Table 2. When features are identified that raise one’s “index of suspicion” for a nutrition-related problem, an extended nutritional evaluation may be indicated.

The importance of an extended nutritional evaluation increases as the number of risk factors and
**Table 1: Definitions and Acronyms**

**Screening Evaluation:** Initial evaluation performed on all patients.

**Extended Evaluation:** In-depth information-gathering based on issues of concern identified during initial screening.

**Iterative Process:** Each factor is assessed and reassessed as often as required.

**Life Stage:** Life stages of dogs and cats refer to periods of life that may influence nutritional needs, for example growth, reproduction, and adult, for which AAFCO provides nutrient profiles.  

**Satisfactory Diet:** Complete (all nutrients present), balanced (nutrients present in proper proportions), digestible (nutrients in the diet are available to the animal), palatable (eats willingly), sufficient (amount, see text), and safe.

**MER:** Maintenance energy requirements

**RER:** Resting energy requirements

**BW:** Body weight

**BCS:** Body condition score. An evaluation of body fat.

**MCS:** Muscle condition score. An evaluation of muscle condition.

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**Figure 1:** An illustration of the two-part nutritional assessment process. A Screening Evaluation is performed on every patient. Based on this screening, pets that are healthy and without risk factors need no additional nutritional assessment. An Extended Evaluation is performed when one or more nutrition-related risk factors are found or suspected based on the screening evaluation.

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**Table 2: Nutritional Screening: Risk Factors**

<table>
<thead>
<tr>
<th>Nutritional Screening Risk Factor</th>
<th>Check (✓) if present</th>
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<tbody>
<tr>
<td><strong>History</strong></td>
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<tr>
<td>Altered gastrointestinal function (e.g., vomiting, diarrhea, nausea, flatulence, constipation)</td>
<td>✓</td>
</tr>
<tr>
<td>Previous or ongoing medical conditions / disease</td>
<td>✓</td>
</tr>
<tr>
<td>Currently receiving medications and/or dietary supplements</td>
<td>✓</td>
</tr>
<tr>
<td>Unconventional diet (e.g., raw, homemade, vegetarian, unfamiliar)</td>
<td>✓</td>
</tr>
<tr>
<td>Snacks, treats, table food &gt; 10% of total calories</td>
<td>✓</td>
</tr>
<tr>
<td>Inadequate or inappropriate housing</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Physical Examination</strong></td>
<td></td>
</tr>
<tr>
<td>Body condition score</td>
<td></td>
</tr>
<tr>
<td>9-pt scale: any score less than 4 or greater than 5</td>
<td>✓</td>
</tr>
<tr>
<td>Muscle condition score: Mild, moderate, or marked muscle wasting</td>
<td>✓</td>
</tr>
<tr>
<td>Unexplained weight change</td>
<td></td>
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<tr>
<td>Dental abnormalities or disease</td>
<td></td>
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<tr>
<td>Poor skin or hair coat</td>
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<tr>
<td>New medical conditions / disease</td>
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</table>
their severity increases. Moreover, sufficient concern about any one parameter may be enough to warrant extended evaluation.

If no concerns are raised by the screening evaluation, then the nutritional assessment is complete.

**BCS and MCS**

Use a consistent method and scale to measure body weight (BW), body condition score (BCS), and muscle condition score (MCS), to assess current status and changes over time. Although different scoring systems may have situation-specific merits, the panel recommends that practices choose, and all doctors and staff consistently use, one system and record the total points on which it is based (i.e., the denominator).

The BCS evaluates body fat (Figures 2A and 2B). A variety of BCS systems are used to evaluate dogs and cats (e.g., scales of 5, 6, 7, or 9). However, these guidelines will use a 9-point scale. Although some extremely obese patients exceed the BCS of 9/9, there is presently no validated scoring system that extends beyond that point.

The goal for most pets is a BCS of 4 to 5 of 9. (This may appear ‘too thin’ to some pet owners so client education is important.) These BCS goals are based on a limited number of studies in dogs and cats, as well as those from other species. Disease risk associations with higher BCS in adult animals appear to increase above 6 of 9. Similar risk associations for other life stages in client-owned pets have not been reported, but may occur at low BCS in growing puppies based on studies of laboratory-housed animals. Additional research in dogs and cats is needed to more fully evaluate the effects of body condition on disease prevention.

The MCS differs from the BCS in that it evaluates muscle mass (Figure 3). Evaluation of muscle mass includes visual examination and palpation over the temporal bones, scapulae, lumbar vertebrae and pelvic bones. Assessing muscle condition is important as muscle loss is greater in patients with most acute and chronic diseases (i.e., stressed starvation) compared to healthy animals deprived of food when primarily fat is lost (i.e., simple starvation). Muscle loss adversely affects strength, immune function, wound healing, and, is independently associated with mortality in humans.

A simple MCS scale is currently undergoing development and validation. The authors’ clinical experience suggests that early identification of subtle muscle loss, at the “mild muscle wasting” stage is valuable for successful intervention.

Clinically, BCS and MCS are not directly related. An animal can be overweight but still have significant muscle loss. This can make an MCS of mild to moderate look relatively normal if not carefully evaluated. In these cases, although some of the areas of the body may appear relatively normal or even to have excessive fat stores (especially over the ribs or in the abdominal region), muscle wasting is readily felt over bony prominences. Palpation is required for accurately assessing BCS and MCS, especially in animals with medium to long hair coats.

**Extended Evaluation**

Extended nutritional evaluation of animal, diet, feeding and environmental factors is indicated for patients identified to be at risk for any nutrition-related problems from the screening evaluation (Table 2). Those items suggest that nutrition may play an important role in development of or management of the animal’s underlying disease, or life stage. First, review and summarize the history, medical record, and information obtained during the screening evaluation. Second, obtain additional data as appropriate, as described below. A more detailed list of potentially relevant historical factors may be found in a variety of references.

**Animal Factors**

- Changes in food intake or behavior (e.g., amount eaten, chewing, swallowing, nausea, vomiting, regurgitation).
- Condition of the integument. Nutrition-related abnormalities may include variable combinations of dry, easily-plucked hair; thin, dry, or scaly skin; and reduced resistance to venipuncture (due to loss of normal skin collagen density).
- Diagnostic work up
  - Minimum database / laboratory testing as appropriate.
  - Specific testing might include a complete blood count (checking for anemia); urinalysis; biochemistry profile (including electrolytes, albumin); fecal culture; or evaluation of other nutrient concentrations that may be low (or high) as a result of an unbalanced diet (e.g., taurine, vitamin B12, iron).
  - Additional workup as indicated (e.g., imaging, endoscopy)
Figure 2: Body Condition Scoring (BCS) System for dogs (A) and cats (B)

A

1. Too Thin
   - Ribs, lumbar vertebrae, pelvic bones and all bony prominences evident from a distance. No discernible body fat. Obvious loss of muscle mass.

2. Too Thin
   - Ribs, lumbar vertebrae and pelvic bones easily visible. No palpable fat. Some evidence of other bony prominence. Minimal loss of muscle mass.

3. Too Thin
   - Ribs easily palpated and may be visible with no palpable fat. Taps of lumbar vertebrae visible. Pelvic bones becoming prominent. Obvious waist and abdominal tuck.

4. Ideal
   - Ribs easily palpable, with minimal fat covering. Waist easily noted, viewed from above. Abdominal tuck evident.

5. Ideal
   - Ribs palpable without excess fat covering. Waist observed behind ribs when viewed from above. Abdomen tucked up when viewed from side.

6. Too Heavy
   - Ribs palpable with slight excess fat covering. Waist is discernible viewed from above but is not prominent. Abdominal tuck apparent.

7. Too Heavy
   - Ribs palpable with difficulty; heavy fat cover. Noticeable fat deposits over lumbar area and base of tail. Waist absent or barely visible. Abdominal tuck may be present.

8. Too Heavy
   - Ribs not palpable under very heavy fat cover, or palpable only with significant pressure. Heavy fat deposits over lumbar area. Obvious abdominal distension is present.

9. Too Heavy

B

1. Too Thin
   - Ribs visible on shorthaired cats; no palpable fat; severe abdominal tuck; lumbar vertebrae and wings of ilia easily palpated.

2. Too Thin
   - Ribs easily visible on shorthaired cats; lumbar vertebrae obvious with minimal muscle mass; pronounced abdominal tuck; no palpable fat.

3. Too Thin
   - Ribs easily palpable with minimal fat covering; lumbar vertebrae obvious; obvious waist behind ribs; minimal abdominal fat.

4. Ideal
   - Ribs palpable with minimal fat covering; noticeable waist behind ribs; slight abdominal tuck; abdominal fat pad absent.

5. Ideal
   - Well-proportioned; observe waist behind ribs; ribs palpable with slight fat covering; abdominal fat pad minimal.

6. Too Heavy
   - Ribs palpable with slight excess fat covering; waist and abdominal fat pad distinguishable but not obvious; abdominal tuck absent.

7. Too Heavy
   - Ribs not easily palpated with moderate fat covering; waist poorly discernible; obvious rounding of abdomen; moderate abdominal fat pad.

8. Too Heavy
   - Ribs not palpable with excess fat covering; waist absent; obvious rounding of abdomen with prominent abdominal fat pad; fat deposits present over lumbar area.

9. Too Heavy
   - Ribs not palpable under heavy fat cover; heavy fat deposits over lumbar area, face and limbs; distention of abdomen with no waist; extensive abdominal fat deposits.

The BCS System was developed at the North River Vet Care Center and has been validated and documented in the following publications:

Figure 3: A muscle condition scoring (MCS) system. Evaluation of muscle mass includes visual examination and palpation over the temporal bones, scapulae, ribs, lumbar vertebrae and pelvic bones. [Provided courtesy of Dr. Tony Buffington] This system currently is under development and validation.22,23

<table>
<thead>
<tr>
<th>Description</th>
<th>Figure</th>
</tr>
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<tbody>
<tr>
<td>No Muscle Wasting Normal Muscle Mass</td>
<td><img src="image" alt="No Muscle Wasting" /></td>
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<tr>
<td>Mild Muscle Wasting</td>
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<tr>
<td>Moderate Muscle Wasting</td>
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<tr>
<td>Marked Muscle Wasting</td>
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</table>

- Current medical conditions and medications.
  - Assess effects of the disease and any treatment plan on pet’s nutritional status (e.g., thyroid disease).
  - Some medications (e.g., diuretics) or procedures (e.g., significant intestinal resection, drain placement) can cause a loss or malabsorption of essential nutrients.

Diet factors

- Check the caloric density of current pet food (i.e., the number of calories per gram, can, or cup of food), particularly if pet is below or above desired BCS, or if owner has to feed unusually large or small amounts to maintain desired BCS (May have to contact pet food manufacturer for this information).
- Evaluate other sources of nutrients: Treats, table food, supplements, food used for administering medication, chew toys (e.g., rawhide).
- If disease conditions exist that may be the result of tainted or spoiled food, the diet should be submitted for testing.24 Questions about having food analyzed or tested for potential toxins may be referred to the state feed control official (listed at www.aafco.org).
- Evaluate commercial foods
  - Specific type, formulation, flavor variety, when purchased, where purchased, storage conditions.
  - Requirements for label information vary by country. However, it is important to also be aware of the label’s role as advertisement.25

§ In many countries, the AAFCO adequacy statement provides several important facts:

- Whether the diet is complete and balanced, and if so, for what life stages. All foods should be complete and balanced. If it says “intermittent or supplemental use only,” it is not complete and balanced. That may be acceptable if it is a veterinary therapeutic diet and is being used for a specific purpose – e.g., severe kidney disease.
- Labels may include one of two statements regarding nutritional adequacy.

1. “[Name] is formulated to meet the nutritional levels established by the AAFCO Dog (or Cat) Food Nutrient Profiles for [life stage(s)].” (Chemical analysis of food.)
2. “Animal feeding tests using AAFCO procedures substantiate [Name] provides complete and balanced nutrition for [life stage(s)].” (Feeding trial analysis of food.)
Formulated foods are manufactured so the ingredients meet specified levels, without testing via feeding trials; interpret with caution. However, the use of feeding trials does not guarantee the food provides adequate nutrition under all conditions.

AAFCO provides nutrient profiles and regulates pet food labeling for growth, reproduction, and adult maintenance, but not for senior/geriatric pets.

- What is manufacturer’s reputation as a food maker? Have you had positive experiences with their products? What objective (not testimonial) information do they provide about their foods to assist evaluation?

- The other information provided on the label is of little practical value in assisting nutritional assessment. Since pet owners sometimes base their purchasing decisions on the initial ingredients or on un-regulated terms such as “holistic,” “human grade,” or “premium,” veterinarians and veterinary technicians must help them make informed decisions.

- Contact the food manufacturer with any questions or concerns. Consider asking the following questions, as appropriate:
  - Do you have a veterinary nutritionist or equivalent on staff in your company? Are they available for consultation or questions?
  - Who formulates your foods and what are their credentials?
  - Which of your diet(s) are tested using AAFCO feeding trials, and which by nutrient analysis?
  - What specific quality control measures do you use to assure the consistency and quality of your product line?
  - Where are your foods produced and manufactured? Can this plant be visited?
  - Will you provide a complete product nutrient analysis for the dog and cat food of interest, including digestibility values?
  - What is the caloric value per gram, can, or cup of your foods?
  - What kinds of research on your products has been conducted, and are the results published in peer-reviewed journals?

- Evaluate homemade foods

  - Ask client about the specific recipe, preparation, storage, recipe rotation or substitution.
  - Consider sources and amounts of protein, carbohydrates, fats, vitamins and minerals; digestibility; bioavailability.
  - Consider specific needs of cats (e.g., amino acids, arachidonic acid, etc.).

- Contact a board certified veterinary nutritionist or equivalent to evaluate or formulate a homemade diet (Table 3).

- Evaluate any unconventional diet, whether commercial or homemade for nutritional imbalances.

  - Evaluate additional risks of raw meat foods (e.g., fresh, frozen, freeze-dried, raw-coated, or other forms). Pathogenic organisms may cause gastroenteritis and other health problems and can be shed in the feces for a prolonged period after ingestion of contaminated raw meat, even if not showing clinical signs. If a patient that has been fed a raw meat diet is hospitalized, evaluate the risk to hospital staff and other hospitalized animals. In addition, raw foods containing bones can be associated with dental damage and esophageal/gastrointestinal obstruction or perforation.

  - Evaluate risks of vegetarian foods, particularly with cats but also with dogs.

Feeding and environmental factors

- Primary feeder of pet.

- Feeding management (e.g., location, frequency).

- Issues with multiple pets (competition for food, threats).

- Other food providers and sources.

- Extent of enrichment (e.g., toys, other pets, housing, food delivery devices).

- Activity of pet at home.

  - Type (e.g., leash walks, backyard, free roaming/spontaneous).

  - Amount (times per day/week).

  - Energy level and amount of activity.

- Environmental stressors (e.g., recent changes in the home, uncontrollable outdoor stimuli, conflict over resources such as food or access to the owner, conflict between animals, etc.).

- Environment has a direct impact on nutrition. For
<table>
<thead>
<tr>
<th></th>
<th>Useful web sites for client and staff education</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>AAFCO Association of American Feed Control Officials (Nutrient profiles, feeding, trials, ingredients)</td>
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<tr>
<td></td>
<td><a href="http://www.aafco.org">http://www.aafco.org</a></td>
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<tr>
<td>2</td>
<td>AAHA American Animal Hospital Association</td>
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<tr>
<td>3</td>
<td>AAVN American Academy of Veterinary Nutrition</td>
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<tr>
<td>4</td>
<td>ACVN American College of Veterinary Nutrition (Specialty college for board certification; list of institutions</td>
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<tr>
<td></td>
<td>that provide consultation; continual updates of links to resources for diet formulation and analysis)</td>
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<td>FEDIAF European Federation of Pet Food Industry (Nutritional guidelines, guide to good food practice)</td>
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<td>NIH Office of Dietary Supplements (Evaluating supplements, internet health info, and more)</td>
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<td>14</td>
<td>University of California Davis Nutritional History Form (Downloadable Word document)</td>
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<td>Pet Food Institute (Information on ingredient definitions, labeling regulations, etc.)</td>
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<td>USDA Food and Nutrition Information Center (General supplement and nutrition information, links to a variety of</td>
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<td>dietary supplement websites)</td>
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<td>18</td>
<td>USDA Nutrient Database (full nutrient profiles on thousands of human foods)</td>
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example, both laboratory and clinical studies of cats with lower urinary tract syndrome showing that environment plays an important role in presentation of signs regardless of the diet fed.

In dogs, a range of clinical situations, including competitive eating, coprophagia, and obesity have been associated with environmental as well as with animal and dietary factors. Additionally, provision of food in dispensing toys may improve the welfare of indoor-housed pets, so changes in feeding containers also may be more important than is generally perceived.

Interpretation, Analysis And Action

Following the nutritional assessment, interpret and analyze the information that has been gathered in order to devise an action plan. Consider the following:

Animal Factors

1. Evaluate the animal’s condition with respect to the current food intake.

2. Estimate current energy needs. For inpatients, resting energy requirements (RER) may be estimated using any of a variety of published formulas. For outpatients, label recommendations or a formula may be used as a starting point for energy allowance since energy requirements can vary by 50% in either direction for cats, and by 30% in either direction for dogs [particularly with the maintenance energy requirement (MER)]. The MER depends upon BCS, sex and neuter status, life stage, activity, and environment variables.

3. Create a monitoring plan. Teach the client to monitor BW, BCS, and/or MCS as appropriate. Adjust intake as needed to match changing needs over time.

4. Adjust or include dietary supplements if necessary, recommending specific types and amounts.

5. A diet change is sometimes necessary. Preferences for and recommendations about diet transition methods vary, with no clear evidence showing any one method is superior. Clinicians should use and recommend techniques based on their individual assessment of client and patient. Some animals tolerate an abrupt change in diet with little problem although some appear to have fewer gastrointestinal issues if food is gradually changed over a 7-10 day period.

Diet Factors

1. Determine if current amount and type of food is appropriate, based on life stage, lifestyle/activity, disease, body condition, concurrent medications and/or medical procedures.

2. If diet factors are determined to be inadequate, prepare a plan for food and treats that provides appropriate calories and nutrient content for the patient.

3. Consider other food sources in total intake recommendations if necessary.

4. Recommend a specific feeding plan that incorporates pet food, treats, table food, feeding method, frequency, and location.

Feeding management and environment factors

1. Determine any changes in feeding management and any necessary environmental changes.

   a. Whereas some dogs and cats can maintain good body condition when fed free choice, others require meal feeding of appropriate amounts to maintain good body condition.

   b. Confirm the use of an appropriate food measuring device (e.g., an 8-oz or 237 ml measuring cup), and provide food in measured amounts (whether feeding free choice or meals).

   c. Management changes may include provision of feeding toys, and reducing conflict and competition for food.

   d. Environmental enrichment may include increased opportunities for activity (play, exercise), as well as efforts to decrease perception of threat from other animals (including humans) and reducing the frequency of unpredictable change in the animal’s environment.

2. Create a plan for hospitalized animals

   a. Create a monitoring plan and a feeding plan as discussed under animal factors and diet factors (i.e., diet, route, amount, and frequency).

   b. Offer usual and favorite (“comfort”) foods if at all possible to promote food intake. Avoid introduction of novel foods intended for long term feeding in order to avoid the risk of inducing an aversion to the diet. A food aversion is
avoidance of a food that the animal associates with an aversive experience.

c. The optimal route required to achieve nutrient requirements should be reassessed daily, and may include:

i. Voluntary oral feeding

ii. Coax feeding – small changes, such as warming the food, taking the animal to a quiet area for feeding, having the owner feed the animal, or stroking the animal while eating can enhance food intake.

iii. Syringe feeding (be careful in animals with any nausea or who are stressed, as this can induce food aversions)

d. Other nutritional support techniques will be required for animals that have not eaten sufficient amounts by the aforementioned routes for 3-5 days (this includes the time of reduced appetite at home before hospitalization), and are not expected to resume reasonable amounts of food intake prior to further compromise of their nutritional status.39,40

i. Use a feeding tube with animals that are not eating adequate amounts voluntarily. Use parenteral nutrition with animals that have gastrointestinal dysfunction or in animals where enteral feeding has increased risk of aspiration.

ii. Evaluate closely and watch for complications associated with the route of nutrition used, particularly with recumbent or neurologically impaired patients.

3. Create a plan for non-hospitalized animals

a. Create a monitoring plan and a feeding plan as discussed under animal factors and diet factors (i.e., diet, route, amount, and frequency).

b. Clearly inform the client of the recommended feeding management factors to insure success. The client is part of the decision process and implementation of the specific action plan.

c. If obesity is present, provide a comprehensive plan to modify the environment (e.g., exercise, behavior modification, and/or prescription weight control medication).

d. Create specific schedule for

i. Follow up via telephone to elicit questions and verify compliance/adherence to recommended feeding management or environment changes.

ii. Repeat examination/assessment

4. Consult with a specialist or refer any time one feels unqualified to take action and monitor a patient (Table 3).

Monitoring

Healthy animals

Adults in good body condition should be reassessed regularly. Decisions regarding specific frequency of visits are made appropriately on an individual basis, based on the age, species, breed, health, and environment of the pet. Healthy pregnant, lactating, senior, and growing animals require more frequent monitoring. Pet owners should monitor their pet at home including:

- Food intake and appetite
- BCS and BW
- Gastrointestinal signs (e.g., fecal consistency and volume; vomiting)
- Overall appearance and activity

Animals with disease conditions and/or recommended nutritional changes. Non-hospitalized animals for which extended nutritional evaluation was indicated may require more frequent monitoring of nutritional assessment parameters. Monitoring should include the items in Table 2.

Frequent monitoring of BCS and MCS is important as many diseases are associated with suboptimal scores. Also, animals with medical conditions are more likely to receive dietary supplements and to have medications administered with food, so specific attention to and review of these issues, with an update of the dietary plan, are important at each visit to ensure that the overall nutritional plan is optimized. Animals that are not in optimal body condition require frequent monitoring and adjustment of intake in order to achieve and maintain optimal body condition.

Hospitalized patients

Daily monitoring of hospitalized patients includes the items in Table 2, also evaluating these additional items:
• Specific feeding orders which should include diet, route, amount, and frequency.

• Fluid balance. Assessment of clinical signs (e.g., body weight changes, pulmonary crackles) or diagnostic tests (e.g., central venous pressure).

• Addressing optimal route of intake. The optimal route required to achieve nutrient requirements could change during hospitalization and should be reassessed daily (see above).

• Quantifying and documenting nutrient intake (via all routes).

Many hospitalized patients are discharged prior to complete resolution of their underlying disease. Document and communicate to the client the feeding method, caloric intake, diet, frequency and specific monitoring parameters, and the schedule for rechecks and re-assessment.

Discuss with the client any issues that may limit adherence to dietary recommendations (e.g., feeding schedule issues, complex instructions, financial restrictions) and address appropriately (e.g., offer over-the-counter options for appropriate foods if financial restrictions will prevent the owner from consistently feeding the prescribed diet). Create a specific schedule for follow up via telephone to elicit questions and verify compliance/adherence.

Provide choices in foods that meet nutrient goals. Create a plan with the client about what to do if caloric/nutrient goals are not achieved.

When abnormal parameters have returned to normal or stabilized, the patient may continue on a therapeutic diet or be transitioned to a non-therapeutic diet. If a new diet is necessary, it may be introduced gradually, as previously described.

Client Education

Client communication and rapport is important for achieving desired outcomes.14-45 Technicians should be involved in the nutrition evaluation process when they have knowledge and skills in both nutritional concepts and in communication.

Engage the client in decision making and defining expectations. Recommendations may be modified by the client’s time, lifestyle, and financial limitations. Use communication techniques that include a variety of forms based on client preferences. Use a variety of educational approaches and tools.

Demonstrating and teaching the client to evaluate the BCS and MCS is effective in engaging the client in their pet’s care. Expectations and goals should be specific, achievable, and include specific follow-up in order to monitor progress and compliance and to adjust recommendations.

Inform clients about specific foods, and potential advantages, risks and concerns. Include recommendations on amount and frequency of diet fed, accounting for snacks, treats, table food, foods used for medication administration, and dietary supplements. Clients may enrich their pet’s nutritional experience by interacting with them at feeding, providing food toys and playing and exercising with their pet.

Summary

Nutritional assessment is an important aspect of optimal patient care. This document provides guidance for appropriate, effective assessment, evaluation, action monitoring and education. With little practice, this approach can be efficiently incorporated into daily practice without additional time or expense. Stay tuned for further developments and expanding knowledge.

References


Bangladesh Poultry Farms Gripped by Bird Flu

Almost two-thirds of 150,000 poultry farms have been closed down over the last two years due to poor surveillance and lack of compensation for culled fowls.

While a bird flu alert has been on for some time now, with 21 recorded cases and, reportedly, 102,348 fowls culled since January of this year, the exact extent of the threat is not known.

Given the fact that the country was first hit by bird flu five years ago, we believe that by now the authorities should have been abreast of the situation and better prepared to mitigate the effects of the outbreak. We hope the government will lose no more time in doing the needful.

Comprehensive policy backup should be provided to the industry in order that shutdown farms are reopened while no more closures take place. Once self-sufficient in meeting domestic demand for protein like chicken and eggs we cannot let such an attainment go down the drain through lack of friendly policy support to the poultry sector.

– The Daily Star, 24 April 2012

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Veterinary Research Institute
Gannoruwa, Peradeniya
Sri Lanka

Abstract

During the period from January 2005 to December 2010, a total of 59 muscle samples collected from Black Quarter (BQ) suspected animals, were submitted to central laboratory by government veterinarians island wide, for disease confirmation. Laboratory animal tests using guinea pigs (Cavia porcellus) were carried out to confirm the presence of Clostridium chauvoei in all 59 samples. Of these, 54 tested positive. There was only one test negative sample submitted from a goat while all other 58 samples were from either cattle or buffaloes. Most (24/59) of the confirmed positive cases were reported from North Central Province of the country where paddy cultivation is popular. Selected positive muscle tissue samples were used to confirm BQ by PCR and to study the similarity of the clostridium species by gene sequencing. The PCR amplification of the 16S ribosomal RNA gene of Clostridium chauvoei was followed by nucleotide sequencing and was aligned with both Clostridium septicum and Clostridium botulinum with 99% base pair similarity. It appears that in 5 provinces out of 9 in the country, BQ incidence is gradually reducing while the other 4 provinces, all of which are largely agricultural, must pay continuous attention to control this profit limiting condition.

Key words: BQ, PCR, Gene Sequencing

Introduction

Clostridium chauvoei causing Black Quarter (BQ) or Blackleg, is an acute disease in ruminants and is associated with high mortality. Death due to acute septicemia caused by BQ is inevitable (Kojima et al., 2001). Clinical manifestations resembling BQ can also be caused by C. septicum, C. novyi, C. perfringens or C. sordellii (Miyashiro et al., 2007). This condition affecting the production and population has been reported from Sri Lanka (Alwis, 1988), particularly in North Central Province (NCP), Northern Province (NP), Eastern Province (EP) and from Uva Province (UP). Occurrence of malignant oedema has made it difficult to diagnose BQ in Sri Lanka 15 years ago (Horadagoda et al., 2007). Samples of affected muscle tissue from the suspected BQ cases are being sent to the central laboratory for confirmation, by government veterinary surgeons placed island wide. In general, most such muscle samples contain high numbers of C. chauvoei while other anaerobic bacteria may interfere its isolation (Bagge et al., 2009). Though pure cultures of C. chauvoei could be detected by biochemical identification, use of PCR technique is quicker and is also unaffected by contaminating bacterial flora (Kuhnert et al., 1997).

The chronological distribution of incidence of BQ closely follows rainfall and corresponding paddy cultivation pattern in Sri Lanka, as has been observed elsewhere (Sultana et al., 2008; Reddy et al., 1997). Most cases of BQ in other countries occur in warm months of the year and in areas where soil excavation is common (Mossawi et al., 2007; Collier et al., 1998). The spores of C. chauvoei can survive for years in soil without loosing infectivity (Naz et al., 2005) and the mechanical soil excavation activates such latent spores leading to outbreaks (Collier et al., 1998). Reports on BQ in Sri Lanka are scarce though its prevalence is regularly reported. However, cattle and buffalo in Sri Lanka are being vaccinated since 1949 using a BQ vaccine, which was the first bacterial vaccine to be locally produced (Chandrasiri, 2007).

The objective of this study was to examine the pattern and distribution of BQ outbreaks in Sri Lanka during past 5 years, using the clinical samples submitted for diseases confirmation, and to examine the phylogenetic position of the species of clostridia involved.

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2 Department of Veterinary Clinical Sciences, Faculty of Veterinary Medicine and Animal Science, University of Peradeniya, Sri Lanka.
3 Department of Veterinary Pathobiology, Faculty of Veterinary Medicine and Animal Science, University of Peradeniya, Sri Lanka.
Materials and Methods

Skeletal muscle samples from one animal each, received by central veterinary diagnostic laboratory from each of the clinically suspected of BQ sporadic outbreaks during January 2005 to December 2010 were subjected to guinea pig inoculation, bacterial culture, PCR and gene sequencing as described below.

Clinical materials and culture conditions

A muscle sample, from one of the clinically BQ suspected cattle during a given outbreak, was transported in sealed polythene bags on ice to the laboratory within 24 hours and were cultured on sheep blood-agar for isolation. The extract from the same muscle tissue after grinding with 2.5% CaCl₂ was inoculated to a guinea pig. Once the guinea pig died within 24 hours, postmortem examination was conducted and its heart blood was cultured on blood agar plates. The culture plates were incubated anaerobically in a Gaspak system, AnaeroGen™ (Oxoid) at 37°C for 24 hours. From the colonies on guinea pig heart blood culture plates, smears were made and stained with Grams stain and isolates were subjected to biochemical tests such as oxidase, catalase, indol, methyl red, Voges-Proskaur and hydrogen sulfide production. Fermentation reactions were determined by using glucose, fructose, maltose, lactose, sucrose, manitol and dulcitol and pathogenicity was tested in mice.

Bacterial DNA extraction from cells and PCR procedure

The template DNA was obtained from cultures on sheep blood agar. A loopful of such pure colonies was suspended in 1000µl sterile water in 1.5ml Eppendorf tubes. The bacterial cells were lysed by boiling the suspension for 15 minutes. After boiling, the tubes were kept at room temperature for 20 minutes to settle the particles, the supernatant was extracted and stored at -20°C until used as template in PCR.

PCR based on 16S ribosomal RNA

The specific primer sequences selected for C. chauvoei are as follows: Forward 5’ to 3’ GTCGAGCCGAGGAGTTCTC and Reverse 5’ to 3’ TCATCCTGTCTCCGAAGA (Kuhnert et al., 1997) for the PCR amplification of the 16S ribosomal RNA gene. Clostridium chauvoei strain 2585 16S ribosomal RNA Acc. num. NR_026013 was used as reference and the expected size of amplicon being 960 bp. The PCR was performed using Superscript 111 One-Step RT-PCR System with Platinum Taq DNA Polymerase (Invitrogen, USA, 2007). The reaction was carried out in a 25 µl volume containing water 7 µl, 2X reaction mix 12.5 µl, Platinum Taq 1µl, 10 µmol forward primer 1 µl, 10 µmol reverse primer 1 µl and DNA template 2.5 µl. The thermal cycling conditions were as follows; 95°C 5 min, followed by 35 cycles 95°C 30 seconds, 56°C 1 min, 72°C 1.30 min with final extension 72°C 10 min. Electrophoresis of amplified product was carried in 1% agarose (Sigma) and visualized by ethidium bromide staining under UV light.

PCR product purification and Gene sequencing

The amplified products were purified using Gel Extraction kit, QIAquick (Qiagen, USA, 2002) and stored at -20°C.

Sequencing PCR

PCR was carried out using the Cycle sequencing kit, BigDye Terminator V. 3.1 100Rn (Applied Biosystems, USA, 2006) in reaction volume of 20 µl containing water 9 µl, template DNA 5 µl, primer (forward or reverse) 1 µl, Ready Reaction 3 µl, Big Dye Sequencing Buffer 2 µl. Thermal cycling conditions were as follows; 96°C 1 min, followed by 25 cycles 96°C for 10 sec, 50°C 5 sec, 60°C for 4 min. Then hold at 4°C.

Sequenced product Purification

The PCR product was centrifuged for 1 minute at 10000g. Purification was carried out using the BigDye X Terminator Purification Kit (Applied Biosystems, USA, 2006) and included SAM 90 µl and Buffer (X terminator) 20 µl. The samples were vortexed for 30 minutes, followed by spinning at 1000g rpm for 2 min.

Capillary Electrophoresis

The samples were loaded into the 96 well plate in 20 µl volume together with standards and placed in the 3130 Genetic Analyzer (Applied Biosystems) for DNA sequencing.

Results

Geographical distribution of BQ outbreaks in the country during 2005 – 2010 (Figure 1) indicate that most occurred in NCP and NP, while incidence is minimal in WP, SP, SBP and CP. When the total numbers of reported outbreaks are considered (Table 1), the incidence in NCP and NP appear to remain almost the same over the study period.
Table 1
Geographical distribution of laboratory confirmed cases of BQ in cattle and buffaloes in Sri Lanka during January 2005 to December 2010

<table>
<thead>
<tr>
<th>Year</th>
<th>NCP</th>
<th>NP</th>
<th>EP</th>
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NCP-North Central Province; NP- Northern Province; EP-Eastern Province; UP- Uva Province; NWP-North Western Province; WP-Western Province; SP-Southern Province; SBP-Sabaragamuwa Province; CP-Central Province

Figure 1: Provincial distribution of BQ outbreaks in Sri Lanka during January 2005- December 2010

PCR amplification of the 16S ribosomal RNA gene of Clostridium chauvoei, as shown in Figure 2, was aligned with the Clostridium septicum and Clostridium botulinum with 99% and with Clostridium chauvoei with 100% base pair similarity in sequencing.

Discussion

The present investigation based on molecular studies indicated the high incidence of BQ in NCP, followed by NP and EP. The trend of disease occurrence tends to perpetuate in the years to come as well with special reference to the NCP. High incidence of BQ in these areas could be attributed to rearing of cattle under extensive management system in NCP (Perera and Jayasuriya, 2008) and also in NP and EP, leading to further spread of BQ. In addition, the spores in soil may cause sporadic outbreaks in NCP since soil excavation is common in paddy cultivation in the area. This area in addition, is flooded during the country’s heaviest rainy season enhancing the possibility of spread of BQ, as has been noted in Bangladesh and in Pakistan (Sultana et al., 2008; Amanullah and Niamatullah, 2011).

The BQ outbreaks can be effectively controlled by annual vaccination (Reddy et al., 1997) as is adopted in Sri Lanka. Vaccination before grazing provides better results (Bagge et al., 2009) though this can not be practiced in NCP due to the extensive method of cattle management prevailing in the area. If the geographical distribution of Clostridium chauvoei spores on pasture can be determined, herd-specific vaccination programmes...
can be designed and implemented, as has been proposed by Bagge et al. (2009).

The phylogenetic position of Clostridium chauvoei and Clostridium septicum on their 16S rRNA gene sequences determined a similarity of 99.3% between the rrs genes of Clostridium chauvoei and Clostridium septicum, which is in agreement with Kuhnert et al., 1997 and Moussa, 1959. Furthermore, the present study emphasizes the need of application of molecular tools for detection of Clostridium chauvoei in addition to conventional culture based approach especially for clinical samples containing mixed bacterial flora.

**Conclusion**

The present investigation enabled to understand the varied distribution of C. chauvoei in different provinces of Sri Lanka and also emphasises the immediate need of institution of diseases control especially in the NCP. Further, this first report on detection of C. chauvoei using modern diagnostics clearly indicate that adopting such advanced techniques help prompt decision making and institution of appropriate control strategies for BQ.

**Acknowledgement**

The staff of the Central Veterinary Investigation Centre of the Veterinary Research Institute, Veterinary Surgeons and Veterinary Investigation Officers in Sri Lanka are acknowledged for assistance extended.

**References**


Parasitic Infections And Control Method For The Buffalo Herd In Boralanda Government Farm, Sri Lanka


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Abstract

The buffalo herd at Boralanda Government Farm (BGF), located in Uva province, is known to have high calf mortality with poor growth rates and continuous diarrhea among serious management problems. This study was conducted in buffaloes at Boralanda farm with the objective of reporting blood and gastro intestinal parasites with their seasonal variation. In addition, efficacy of anthelmintic treatment was to be evaluated. A total of 89 buffaloes of Murrab bred at BGF were visited during July 2009 to June 2010. Fecal samples were collected fortnightly from the youngest age group (Group 1; less than 3 months), and monthly in the other 3 groups (4-12 months (group 2), 1-2 years (Group 3) and above 2 years (Group 4). When the fecal egg count was more than 1000 eggs/g of feces pooled larval cultures were done in order to identify the species of Strongyle helminthes. In addition, all animals were weighed during each visit. Thin blood smears were made from all animals once at the beginning of the study. Fecal egg count reduction test was performed, before anthelmintic treatment and 10 days later, in order to evaluate the efficacy of the treatment. Pasture samples were collected from the grazing field in a zigzag manner to examine crude protein, ash and trace mineral contents.

Calves in Group 1 and 2, were infected with Toxocara vitulorum Strongyloides papillosus, Strongyle species of worms and Eimeria and Cryptosporidium protozoan species. In Group 3, Strongyloides, Oesophagostomum, Bunostomum, Cooperia, Trichuris worms and Eimeria and Cryptosporidium species of protozoa were found while Group 4 had only Strongyle and Trichuris worms and Cryptosporidium species. The herd prevalence of blood parasites (Theileria, Anaplasma) and Cryptosporidium were 75.3% and 59.5% respectively. The highest prevalence of Theileria (47.1%), Anaplasma (46%), and of Cryptosporidiosis (41.5%) were evident in Group 4.

When birth weight of calves, were below the standard, the calves appear to have difficulties in positively responding to helminth infections or blood parasites. The association between diarrhea and occurrence of Cryptosporidium was statistically significant only in Groups 1 and 2 (P = 0.04). No apparent relationship was noted in any of the groups between mean bodyweights and mean fecal egg counts. Albendazole and Febantel were satisfactorily effective (P= 0.00) against Strongyles and Strongyloides. The crude protein, copper and zinc levels were low in grass samples collected from the grazing land of these animals. Pasture larval counts seemed to rise in rainy seasons in grazing lands. Calves with poor birth weight, perhaps leading to low immunity and unsatisfactory nutrition, exposed to a multi-factorial health problem, cumulatively have lead to poor performance of animals at BGF. Effective deworming at the age of 10 days targeting Toxocara and another dose of anthelmintic (aiming at Strongyle species) at the start of a rainy season (2 rainy seasons/year), may be the best deworming schedule for BGF. It is proposed to relocate the farm to an area with nutritious grass and to provide a mineral supplement to calves, if the farm is to be managed profitably.

Key words: Investigation, Parasitic infections, Buffaloes, Sri Lanka

Introduction

Though the environment plays a major role in parasitism, buffaloes are less affected by gastrointestinal helminthes compared to cattle. In general, Toxocara vitulorum infection leading to poor calf performance and calf mortality is a major concern in buffalo industry in several Asian countries including Sri Lanka (Rajapakse et al., 1994). Strongyloides species, Mecistocirrus digitatus, Haemonchus, Cooperia, Oesophagostomum and Bunostomum are among the other gastro intestinal helminthes of importance in buffaloes (Perera et al., 1989).
*Strongyle* infection in buffaloes, however, is not as important as in cattle because of the higher innate immunity developed at younger age (Roberts and Fernando, 1990). *Eimeria* species (Bahirathan et al., 1995) and *Cryptosporidium* infection (Rajapakse et al., 1999) are also known to be causing diarrhea in buffaloes in Sri Lanka. Though natural products such as wild sun flower, has been attempted as treatment for gastrointestinal nematodes (Wijegunawardene et al., 1994), still anthelmintics are heavily used. Until free living stage control using nematophagus fungus, *Arthrobrotys oligospora*, in Sri Lanka (Faizal et al., 2000) becomes feasible; this trend is likely to continue. This study was designed to investigate the status of parasitic infections in the buffalo herd at Boralanda Government Farm and to make recommendations for the upliftment of the farm management.

**Materials and Methods**

**Study Area**

Boralanda Government Farm (BGF) is located 1262 m above mean sea level in Badulla district in Uva province of Sri Lanka with an annual rainfall between 1000 - 2000 mm, temperature between 15-28°C and relative humidity between 65 - 90%. BGF has 89 Murrah buffaloes on 220 acres of land with red yellow podsolic type soil. The calves below 1 year are intensively managed up to 6 months and cut and fed system is adopted thereafter. Other animals are managed semi intensively and are in community sheds at night. Supplementary vitamin or mineral feeding is not practiced.

**Experimental Design**

During July 2009 to June 2010, fecal samples were collected fortnightly from calves below 3 months (Group 1) and monthly from 3-12 months (Group 2). The other animals in Group 3 (between 12-24 months) and Group 4 (above 24 months) were fecal sampled monthly. Individual thin blood smears were prepared at the beginning of the study. Larval cultures were made from individual fecal samples at the laboratory to distinguish the *Strongyle* helminth species. All animals in Groups 1 and 2 were weighed during each visit. Fecal samples from all animals were collected once for identification of *Cryptosporidium*. Animals in both Groups 1 and 2 were treated with anthelmintics once when the average EPG (eggs per gram of feces) was > 1000 eggs/g feces and fecal samples were collected 10 days later, in order to examine anthelmintic efficacy. Grass samples were collected from the grazing field by walking in a zigzag manner and were processed as described by Manual of Veterinary Parasitical Laboratory Technique (1986). Proximate analysis of grass samples were performed according to Official Methods of Analysis of AOAC International (1998) and the minerals were analyzed using Atomic absorption Flame Photometry (AOAC, 1998) except for Phosphorus for Colorimetric Procedure were used (AOAC, 1998). The results were compared with the reference values for Sri Lanka (Ibrahim, 1988). The Rainfall, temperature and relative humidity in the area during the experimental period were collected from meteorological unit of Agriculture Research Centre, Boralanda.

**Parasitological Techniques**

Gastro intestinal helminthes and gut protozoan species identification were done by salt flotation test, fecal parasitic egg count by McMaster technique, culturing of pooled dung samples for isolation of infective larvae. Pasture samples were processed and larval counts were performed according to the Manual of Veterinary Parasitical Laboratory technique (Ministry of Agriculture Fisheries and Food, 1986). Diagnosis of *Cryptosporidium* was done using Sheather’s Sucrose solution followed by staining the smears with Modified Ziehl Neilson technique (Casemore, 1991). Blood parasites were identified after Giemsa staining according to Basic Laboratory Methods in Medical Parasitology (WHO, 1991).

**Data Analysis**

All data were entered into Minitab release 14. Chi-square test, at the 5% significance level, was performed to evaluate the association between animals with diarrhea and clinical *Cryptosporidium* infection in three groups. The mean EPG of each worm species in three groups (Groups 1 and 2 were joined) was compared using one way analysis of variance (ANOVA) followed by Tukeys multiple comparison test. Pooled t-test was used to compare EPG of two groups in each worm species. Paired t-test was performed to evaluate anthelmintic efficacy 10 days prior and after the anthelmintic treatment. The data of fecal egg counts were log transformed to stabilize the variance. Statistical significance was considered at P < 0.05.

**Results**

Animals below 1 year (Group 1 and 2), revealed the presence of *Toxocara vitulorum*, *Strongyloides papillosus* and *Strongyle* worm species (Figure 1), *Eimeria* and *Cryptosporidium* species (Table 1) and their fecal egg counts varied between 100-20,00,000 eggs/g of feces.
In 1-2 year age group (Group 3), *Strongyloides papillosus, Oesophagostomum, Bunostomum, Cooperia* and *Trichuris* nematode species and *Cryptosporidium* infections were prominent (Figure 2) while their fecal egg counts varied between 100-1,350,000 epg/g of feces.

In the adult group (Group 4), only *Trichuris, Strongyle* nematode species and *Cryptosporidium* infections were prominent (Figure 3) while fecal egg counts were varied between 100-900 epg/g of feces.

Animals in Group 1 and 2 had the highest mean EPG counts and highest *Cryptosporidium* oocyst counts. *Toxocara* were reported only in animals in Group 1 except in one animal in Group 2. Febantel seemed to be effective for *Toxocara* (P=0.01), *Strongyle* (P=0.00) and *Strongyloides* (P=0.01) in Group 1 and 2. Albendazole was proved to be effective for *Strongyle* and *Strongyloides* helminthes (P=0.00) in Group 3.

The highest level of *Cryptosporidium* infection was reported in Group 4 and its prevalence was 41.5%. The association between diarrhea and clinical *Cryptosporidium* infection was statistically significant in Group 1 and 2 (P = 0.04). The *Cryptosporidium* oocyst count varied from 20 - 25,000 oocysts/g of feces in all groups. Blood parasites identified were *Theileria* and *Anaplasma marginale* and the respective herd prevalence were 65.2% and 60.7% (Table 2). No significant changes in body weights in relation to fecal EPG counts were observed in any of the groups.

Pasture larval counts were increased during rainy seasons. According to the analysis of grazing pasture (*Brachiaria brizantha*) in dry and wet season, results revealed low crude protein (8.1% in dry and 8.6% in wet season), low zinc levels (40mg/g in dry and 62.3µg/g in wet season) and low copper levels (60mg/g in dry and 16.4µg/g in wet season).

### Table 1

**Prevalence of protozoan infection in buffalo herd**

<table>
<thead>
<tr>
<th>Group (Number)</th>
<th><em>Cryptosporidium</em></th>
<th><em>Eimeria</em></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>+ve (%)</strong></td>
<td><strong>Mean Oocyst Count (±SD)</strong></td>
</tr>
<tr>
<td>Group 1+2 (17)</td>
<td>10 (11.2%)</td>
<td>8142 (±11,677)</td>
</tr>
<tr>
<td>Group 3 (10)</td>
<td>6 (6.7%)</td>
<td>37 (± 15)</td>
</tr>
<tr>
<td>Group 4 (62)</td>
<td>37 (41.5%)</td>
<td>1758 (±5397)</td>
</tr>
<tr>
<td>Total (89)</td>
<td>53 (59.5%)</td>
<td>-</td>
</tr>
</tbody>
</table>

In the 1-2 year age group (Group 3), *Strongyloides papillosus, Oesophagostomum, Bunostomum, Cooperia* and *Trichuris* nematode species were identified (Table 1) while their fecal egg counts varied between 100-1,350,000 epg/g of feces.
Figure 2: Seasonal variation of fecal parasitic egg counts in 1-2 year group

Figure 3: Seasonal variation of gastrointestinal parasitic egg counts in adult group

Table 2
Prevalence of Theileria and Anaplasma in buffaloes at Boralanda Government Farm

<table>
<thead>
<tr>
<th>Age Group (N)</th>
<th>No of positives (from 89 animals)</th>
<th>Prevalence (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Theileria</td>
<td>Anaplasma</td>
</tr>
<tr>
<td>Gr 1-2 (17)</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Group 3 (10)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Group 4 (62)</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Total (89)</td>
<td>13</td>
<td>9</td>
</tr>
</tbody>
</table>
Discussion

It was clear that most buffaloes carry both blood parasites without showing clinical signs. However poor weight gain and performance of calves could be at least partially attributed to the presence of blood parasites. Calves less than 1 year, reported the highest mean count of helminth eggs and Cryptosporidium oocysts despite the evident weight gain. Toxocara vitulorum was the predominant problem in this group which needs further attention for strategic control. Febantel appears to be satisfactorily effective in reducing parasitic egg counts.

It is also important to note several calves and cows carried sub clinical and clinical Cryptosporidium infection. It must be remembered that, though parasites may do little or no damage to their hosts, if the environment is appropriate they may cause economic losses by producing illnesses, loss of appetite, weakness, decreased feed efficiency, reduced weight gain and may even result in death (Jayasinghe, 1999).

Calves between 1-2 years had Strongyle infection with Oesophagostomum and Bunostomum and Cooperia species. Prevalence of Cryptosporidium was also low in this group. They did not show much of weight gain possibly because growing age is almost over. Eimeria and Cryptosporidium appear to be the reason for animals to show diarrhea. In adult group very low parasitic egg counts were maintained and may be due to the age related responsiveness and development of immunity causing lower fecundity and susceptibility to reinfection (Soulsby, 1982). Nonetheless Cryptosporidium infection and blood parasites showed highest prevalence with clinical and subclinical level.

Since pasture larval counts were high during the rainy season, the biological control measures to trap parasitic larvae may be considered. The deficiency in crude protein, Zn and Cu levels in grazing pasture may be due to the deficiency of essential nutrients in the soil. As a result, buffalo calves with relatively low birth weights perform poorly making them prone for any infection. Helminth and protozoans, most being opportunistic organisms, infect such growing animals and attempt to establish delicate balance for persistence. A deworming schedule with Febantel in 10 days of age (to remove immature Toxocara larvae) and at the start of a rainy season with Albendazole (to remove Strongyle species) may be sufficient to BGF.

This study clearly showed that the buffaloes at BGF are affected with a problem with multi-factorial etiology in which helminthes play an important role. It is suggested to examine the economics of the farm for possible relocation to a place with fertile soil. Such relocation may address the objectives of the farm better than it being in Boralanda.

Acknowledgement

Dr. R.M. Ariyadasa, Provincial Director, Mr. M Amaraweera and the farm staff, Dr. SSP Silva and his staff in Veterinary Research Institute, are thanked for all assistance extended.

References


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**Netherlands Rabies Case Highlights Importance of Following Pet Travel Rules**

A paper describing the chain of events that led to a rabid puppy being imported into the Netherlands from Morocco via Spain in February this year has recently been published in the journal Euro Surveillance.

The paper describes how a Dutch couple residing in Morocco obtained an eight-week-old puppy in a car park. The puppy was examined by a local veterinarian, who micro chipped it and issued a certificate of good health, although no vaccinations were given. The couple subsequently travelled by car and ferry to Spain where, at a veterinary clinic, they obtained a pet passport for the puppy. They then flew back to the Netherlands.

The authors report that three Spanish customs officials ‘cuddled’ the puppy at Malaga airport, but its passport was not examined. The passport was not examined when the puppy entered the Netherlands either.

The puppy subsequently began to show hostile behaviour and bit its owners, who contacted a veterinary practice. The puppy was given sedatives, but its behaviour became uncontrollable. Having realised the puppy had originated in Morocco, the veterinarians contacted the Food and Consumer Product Safety Authority in the Netherlands. Classical rabies was confirmed in the puppy following its euthanasia. Action was taken by the authorities in the Netherlands to trace all people and animals that had potentially been exposed to the dog’s saliva so they could be given post exposure prophylaxis. In total, 48 known contacts were traced, 45 of which required post exposure treatment; three animals were euthanized.

The authors note that the dog’s owners tried to import the animal in a legal way ‘yet the international legislations were not followed properly by the consulted veterinarians in Morocco and Spain and customs in Spain and the Netherlands’.

They add that, ‘in hindsight, the European dog passport was incorrectly issued by a Spanish veterinarian as, according to the EU legislation, dogs/animals from outside the European Union should be vaccinated for rabies and kept in quarantine for three months upon arrival. Customs at three locations upon arrival and leaving in Spain and arrival in the Netherlands failed to check the vaccination status of the dog.

Under pet travel rules, dogs from unlisted countries outside the EU have to go into quarantine if three months has not elapsed since a satisfactory blood test result.

The authors recommend that lessons learned from the case should be communicated internationally to encourage veterinarians and customs departments to follow international legislation appropriately.

‘Veterinarians and customs officials across Europe should be aware of the risk of rabies importation by animals from within and outside Europe. Particular attention should be given to puppies under the age of three months, which must be vaccinated against rabies and consequently cannot be imported into Europe’, they state (because vaccination cannot be completed until 12 weeks of age).

They also recommend that ‘The public should be made aware of the risks involved in bringing home a living souvenir and of the rules and regulations governing such an action’.

Introduction

Islam is a comprehensive religion guiding the lives of its followers through sets of rules governing the personal, social and public aspects through the verses of the Holy Qur’an and Hadiths, the compilation of the traditions of Prophet Mohammed (pbuh), the two main documents which serve as guidelines.

In Islam, the law is a privileged means of access to the sacred. For most Muslims, Islamic normativity (fiqh or shari’a) is an essential part of being a Muslim. The demand for and production of authoritative rulings is one form of social expression of normative Islam.

The relevance of animal welfare under Islam

Islam provides considerable support for the importance of animal welfare. There is a rich tradition of the Prophet Mohammad’s (pbuh) concern for animals to be found in the Hadith and Sunna and Islam provides considerable support for the importance of animal welfare.

The Qur’an is explicit, with regard to using animals for human purposes. A closer look at the teachings of the Qur’an and tradition reveals teachings of kindness and concern for animals. Nonetheless, the Qur’an, clearly supports the use of animals, including for food. For example:

- And cattle He has created for you (men); from them ye derive warmth and numerous benefits, and of their (meat) ye eat. Surrah An-Nahl 16:5

- And they carry your heavy loads to lands that ye could not (otherwise) reach except with souls distressed: for your Lord is indeed Most Kind, Most Merciful. Surrah An-Nahl 16:7

- And (He has created) horses, mules, and donkeys, for you to ride and as an adornment; And he has created other things of which ye have no knowledge. Surrah An-Nahl 16:8

- We have made animals subject to you, that ye may be grateful. Surrah Al Haj 22:36

- There is not a moving (living) creature on earth, nor a bird that flies with its two wings, but are communities like you. We have neglected nothing in the Book, then unto their Lord they (all) shall be gathered. Surrah Al-Anam 6:38

- Seest thou not that it is Allah Whose praise all beings in the heavens and on earth do celebrate, and the birds (of the air) with wings outspread? Each one knows its own (mode of) prayer and praise, and Allah knows well all that they do. Surrah An-Noor 24:41

We now have a view of animals that shows them not merely as resources, but as creatures dependent on God (Allah) organized into social groups and, most importantly, engaged in the active worship of Allah.

Animals are seen to have their own lives and purpose, valuable to themselves and to Allah above and beyond any material value they may provide to humanity.

The Qur’an is not the only Islamic source for messages of kindness towards animals.

There is a rich tradition of the Prophet Mohammed’s (pbuh) concern for animals to be found in the Hadith and Sunna. For example, the Prophet Muhammad (pbuh):

- Condemned the beating of animals and forbade striking, branding, or marking them on the face.
Islam and rules concerning the slaughter of animals

The humane slaughter of animals is strongly supported in the Islamic tradition. For example, Sahih Muslim (Book 21, Chapter 11, Number 4810) records Muhammad (pbuh) saying:

‘Verily Allah has enjoined goodness to everything; so when you kill, kill in a good way and when you slaughter, slaughter in a good way. So every one of you should sharpen his knife, and let the slaughtered animal die comfortably.’

Prophet Muhammad (pbuh) has also said:

When one of you slaughters, let him complete it, “meaning that one should sharpen the knife well and feed, water, and soothe the animal before killing it”.

He also said “Do you intend inflicting death on the animal twice - once by sharpening the knife within its sight, and once by cutting its throat?”

Islam has also laid down Other Rules for humane slaughter, including that:

1. Animals should have a preslaughter rest, and be well fed and well looked after at the point of slaughter.
2. The animals must be alive or deemed to be alive at the time of slaughter.
3. Slaughter must be performed by a Muslim (who is of sound mind, mature, and fully understands the Islamic procedure and conditions for slaughtering of animals).
4. Animals that are slaughtered should be securely restrained, particularly the head and neck, before cutting the throat.
5. Operator competence is of great importance in order to carry out satisfactory Halal slaughter.
6. Slaughtering tools and other implements used must be for the slaughter of Halal animals only.
7. The knife must be razor sharp and without blemishes and damage. For animals with normal necks, the act of slaughter must begin with an incision on the animal’s neck just before the glottis, and for animals with long necks such as chicken, turkeys, ostriches, camels etc., the incision must be before the glottis.
8. The animal’s trachea and oesophagus must be severed. The spinal cord should not be cut and the head not severed completely so as to induce immediate and massive haemorrhage. In certain mazhab (school of thought), uttering the phrase “bismillah” immediately before the slaughter is compulsory. In others, such utterance is highly encouraged.

9. Slaughtering must be done once only. The slaughtering implement must not be lifted off the animal during slaughtering. Any lifting is construed as one act of slaughter. Multiple acts of slaughter on one animal are prohibited.

10. Slaughter the animal in such a way that its life departs quickly and it is not left to suffer.

11. Bleeding must be spontaneous and complete.

12. Animals should not be shackled and hoisted before bleeding.

13. Hoisting should be done only after the animal has lost consciousness. Restraining equipment should be comfortable for the animal.

14. Further preparation and dressing of the carcass must be delayed until all signs of life and cerebral reflex have disappeared.

Shackling and hoisting conscious animals seems to violate both the humane intent of Islamic slaughter law, and Prophet Mohammad’s (pbuh) comments on the process of slaughter.

Eating meat produced using cruel methods violates the Prophet Mohammad’s (pbuh) general precept to cause animals no pain before their slaughter, as well as more specific injunctions regarding the treatment of food animals. Indeed, if animals have been subjected to cruelty in transport and slaughter, or to general cruelty, meat from them is considered by Islam as impure and unlawful to eat (Haram). The flesh of animals killed by cruel methods (Al-Muthiah) is carrion (Al-Mujaththamah). Even if these animals have been slaughtered in the strictest Islamic manner, if cruelties were otherwise inflicted on them, their flesh is still forbidden (Haram) food.

Oh, ye messengers! Eat of the good things [tayyibat] and do righteous deeds. Surely, I know what you do.” (Qur’an 23:51).

Oh believers! Eat what We have provided for you of lawful and good things, and give thanks for Allah’s favour; if it is He whom you serve. (Qur’an 2:172; 16:114).

The word ‘Tayyib’, translated as ‘good’, ‘pure’, ‘wholesome’, etc. and means pure both in the physical and the moral sense.

In summary, the main counsel of Islam for the slaughter of animals for food is to do it in the least painful manner. All the Islamic laws on the treatment of animals, including the method of slaughter, are based on compassion, fellow-feeling and benevolence.

What is prevalent today?

Many current practices are not in accordance with the above teachings and may result in great cruelty to animals.

Handling of animals before and during transport is often cruel. Some animals are marched on foot for several days. During such transport animals may lose weight and may be beaten unnecessarily. Many animals are not fed and watered en route. Animals — young and old, big or small — may be tied in twos and fours in order to reduce the number of animal minders or personnel on the trail. Such tying results in injury and fatigue to the animals. Some animals are beaten and forced to move quickly in order to reach markets and abattoirs on time. Those that fall down may be whipped to force them to rise.

Similarly, needless suffering is inflicted on animals that are transported three or four days together in overcrowded, ill-ventilated, trucks, especially in hot, humid weather.

Harsh conditions also occur at slaughter plants. Animals may be held in primitive facilities without shade, and animals may be restrained by short tethers. At the point of slaughter, animals are often struck and beaten to make them enter the slaughter facilities.

What needs to be done?

Many Muslims and Islamic religious leaders are not aware of the cruelty that is routinely inflicted on animals during transport, pre-slaughter and at slaughter in many Islamic countries. There is an urgent need to sensitise all Muslims to the teachings on animal welfare in the Quran and the Hadiths. This approach is bound to be more effective in influencing the majority of Muslims in the livestock trade especially the slaughter man in treating animals more humanely. This needs to be done by
intervention at the highest level by Religious bodies and organisations, which could be most effective in giving rulings (fatwas) on this issue.

Progress might be achieved by taking the following measures.

1. A campaign is needed to apprise religious leaders of the current cruelty which occurs during transport and slaughter, for example by slides and videos. This should be done by competent and knowledgeable individuals who are also aware of the Islamic principles of animal welfare, preferably by Muslims in order to give authenticity to their claims.

2. The creation of animal welfare legislation, including animal transport and slaughter, according to the OIE standards and Islamic principles.

3. Government officials in charge of livestock, especially at abattoirs, should be sensitised to the concepts of animal welfare and how these relate to Islamic principles.

4. Abattoirs should be equipped with the facilities required for the good application of animal welfare standards, including unloading facilities, slaughtering boxes, and well-trained personnel to implement correct Halal slaughter.

5. The OIE animal welfare standards, especially those dealing with land transport and slaughter of animals for human consumption which were adopted in 2005 by OIE Members, need to be more strictly implemented by governments.

6. The inclusion of animal welfare as a subject in the veterinary curriculum should be encouraged, including by making available a model syllabus such as that used in the veterinary schools of India.

The OIE welcomes the opportunity to enter into dialogue with governments and religious authorities with the objective of improving animal welfare in all countries of the world.

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**New Strategy Aims to Improve Animal Welfare in the European Union**

The European Commission has adopted a new four-year strategy setting out its proposed actions for improving animal welfare across the European Union (EU).

The European Union Strategy for the Protection and Welfare of Animals 2012-2015 builds on experience gained with the Community Action Plan on the Protection and Welfare of Animals 2006-2010. This action plan, which was adopted in 2006, grouped together for the first time, various aspects of EU policy governing the welfare of animals kept for economic purposes.

The new strategy, which was adopted on January 19, is needed, the Commission says, because 'animal welfare conditions in the Union fall short of a level playing field, which is required to sustain the enormous economic activity that drives the treatment of animals in the European Union. It says it has become increasingly clear that simply applying the same sector-specific rules to animal welfare 'does not always yield the desired results' and that problems of compliance with sector-specific rules highlight a need to consider whether a 'one size fits all' approach can lead to better welfare across the EU. The diversity of farming systems, climatic conditions, land realities in the different member states have led to considerable difficulties in agreeing on unitary rules and even more difficulties in ensuring their correct implementation the EC says. It adds that the market does not provide sufficient economic incentives for compliance with welfare rules.

The EC also notes that, although specific pieces of animal welfare legislation do exist, there are some areas where there is no specific legislation and where it is hard to apply existing general welfare requirements.

The new strategy identifies a number, of common factors affecting animal welfare across the EU:

- A lack of enforcement of EU legislation by member states is still common in a number of areas;
- A lack of appropriate information for consumers on animal welfare aspects of production methods;
- A lack of sufficient knowledge of animal welfare among stakeholders; and
- A need to simplify and develop clear principles for animal welfare.

Two complimentary approaches to improving animal welfare are set out in the new strategy: first, tackling common problems in a new, holistic manner; and secondly, reinforcing or making better use of existing actions.

~ Vet Record, 28 Jan 2012
Joining Efforts to Address Animal Welfare for a Responsible Development of the Livestock Sector

FAO provides a platform for a global, multi-stakeholder approach to enhance animal welfare. Animals enrich our lives as companion animals, they help to plough the fields and to transport harvests to market, they provide essential nutrients through dairy, meat and eggs as well as, other products such as wool and leather. Their welfare is essential, but animal welfare benefits translate also into higher profits, food security and improved human health.

In economic terms, safeguarding animal welfare translates also into profit for many players involved in animal production across the spectrum, from large-scale industry to the poorest farmers in developing countries. When animals are lost during transport, or their meat is rejected because they have suffered injuries or mistreatment in the way they are raised, handled or slaughtered, there are direct repercussions in terms of productivity and price across the food chain. Animals that are kept in unhealthy environments or are stressed are more prone to become ill, or less efficient in transforming feed into weight gain.

Since the ‘80s a great number of studies have quantified the economic returns of animal welfare: for example, appropriate handling of cattle and swine before slaughtering can result in higher carcass yields, higher quality of carcasses and cuts and in greater profitability in the production and packing sectors. Proper handling of animals can cut bruises in half at the meat plant and reduced the amount of meat that gets condemned for that reason. Improved productivity accompanying more appropriate animal handling could occur in the form of 20% higher daily gains, improved feed efficiency and greater margins of profit in the livestock production sector. Feedlot managers have found that reducing electric prod usage in feedlots and increasing quiet handling helps cattle to go back on feed more quickly and reduces death loss due to respiratory sickness.

Abuse to welfare in animals translates to the loss of high quality, nutritious products that affect food security and the needs for children’s cognitive growth, and micronutrients during pregnancy and post maternity health for women. For this many reason, animal welfare has come to be regarded as a global common good, ever more so for the food security of around 1 billion poor farmers who depend on livestock food and income.

FAO has an important role to play as an increasing number of countries demand animal welfare be safeguarded. The Organization gives priorities to an approach to animal welfare that leads to benefits for both producers and their animals and addresses animal welfare not as a stand-alone issue, but as one among other many socially important goals.

For FAO, animal welfare is an integral part to programmes that improve animal health, increase livestock production, and respond to natural disasters where animals are involved; it is recognized as a core component of a responsible livestock sector.

However, animal welfare is a complex and multi-faceted issue that calls for all involved parties (governmental institutions, private sector, civil society, intergovernmental organizations and academic and research centres) to join forces.

FAO recently convened the First Global Multi-stakeholder Forum on Animal Welfare, with participants representing the food industry, farmers, the civil society, inter-governmental organizations, governmental authorities and the academia, reflecting the growing conviction that animal welfare is an issue of widespread interest. The Forum was organized with the support of the European Economic and Social Committee and the European Commission. The meeting was a stocktaking experience convened to share and scale-up best ideas, practices and innovative solutions to the complex animal welfare challenges. It provided a comprehensive overview on activities addressing animal welfare and on the variety of stakeholders providing them.

The Forum was attended by over 250 participants from 35 countries (including Canada, USA, Brazil, Chile, Uruguay, Suriname, almost all EU ones, Norway, Switzerland, Turkey, Israel, South Africa, Kenya, the Gambia, China, Mongolia, Malaysia, India, Australia and New Zealand). It included a wide range of speakers, representing governmental institutions (e.g. Norwegian, Australian, Israeli, and Surinamese
Regional Animal Welfare Strategy for Asia, the Far East and Oceania

The OIE recognises animal welfare as a complex, multifaceted international public policy issue with scientific, economic, religious, regional and cultural dimensions. Animal welfare is increasingly important to consumers and communities. Australia is committed to working with our trading partners and neighbouring countries to improve their animal welfare standards and practices.

The Australian Government Department of Agriculture, Fisheries and Forestry (DAFF) has provided significant international leadership in the development of the 'Regional Animal Welfare Strategy: Asia, the Far East and Oceania' (the RAWS) in association with the World Organisation for Animal Health (OIE). The strategy was endorsed by the OIE International Committee in May 2008.

In November 2007, 37 participants from 12 countries in the Asian region and three international organisations participated in a successful Animal Welfare Workshop. The workshop endorsed nine recommendations that included supporting the development of a broad-based strategic plan to implement the OIE Guidelines for Animal Welfare in the region. A writing group was established and met in February 2008 to draft the RAWS. In May 2008 the OIE Regional Commission for Asia, the Far East and Oceania and the OIE International Committee endorsed the RAWS and plans to develop an implementation plan.

The RAWS provides OIE member countries with a direction for future improvements in animal welfare standards and practices through education, regulation and research and development.

Key to the success of the RAWS is the development of practical and applied implementation processes and the ongoing support of governments, welfare organisations, practitioners, scientists and industry. DAFF hosted and funded a Workshop in November 2008 and drafted a broad based implementation plan. Coordination mechanisms and endorsement procedures were also discussed. Seven regional countries, two international organisations and representatives from industry participated in the workshop. The RAWS Implementation Plan will be submitted to the OIE Regional Commission for Asia, the Far East and Oceania and the OIE International Committee for consideration and endorsement in May 2009.

The Implementation Working Group agreed that the RAWS could only provide general guidance and that more detailed strategies would need to be developed by individual countries in the region based on their priorities and needs.


There is also useful information for teaching children about caring for animals and looking after their pets at http://www.daff.gov.au/animal-plant-health/welfare/links/kids

Excellent practical information relating to the land transport of animals in Australia is available at http://www.livestockwelfarestandards.net.au/

~ Peter Thornber
Treasurer, CVA
Survey Provides Snapshot of Welfare at Slaughter

The results of a survey of animal welfare at slaughter conducted by the Food Standards Agency (PSA) have suggested that the number of animals slaughtered without stunning in Great Britain is 'relatively low'.

The findings from the survey were discussed by the FSA's board at a meeting on May 22. The assessments of animal welfare were carried out by Official Veterinarians (OVs) at 328 approved establishments in Great Britain - 23 red meat slaughterhouses and 75 poultry slaughter houses - between September 19 and 25 last year. The OVs were asked to make an assessment of how each establishment complied with the Welfare of Animals (Slaughter and Killing) Regulations 1995 (WASK). While OVs undertake this type of monitoring on a daily basis, the FSA says that the survey provided a snapshot of activity at the time of the survey. Also looked at the number of premises that were using CCTV and included a breakdown of the number of animals subjected to specific slaughter processes.

The FSA reports that the survey showed that 324 of the 328 establishments were fully compliant with the requirements of WASK, or demonstrated minor deficiencies (such as sheep being held in pens allocated for cattle, or stocking densities being temporarily exceeded). Four establishments demonstrated major deficiencies (such as a homed bovine animal trapped in a pen, or pigs being held in lairage overnight without water). All major deficiencies identified resulted in enforcement action, ranging from referral for investigation to immediate rectification, the FSA says.

Regarding the use of CCTV the FSA notes that 96 of the 253 red meat establishments were operating CCTV as were 42 of the 75 poultry slaughterhouses. No significant variation in compliance with WASK was identified between premises with and without CCTV it says.

Regarding the specific slaughter processes used, the FSA reports that a total of 43,772 cattle or calves were slaughtered during the survey period at 194 establishments, of which 1314(3 per cent) were slaughtered by the Shechita method at Four establishments. Of these, 10 per cent were stunned immediately after bleeding. The survey also found that 1727 of the 43,772 cattle or calves (4 per cent) were slaughtered by the Halal method at 16 establishments; 84 per cent of these were stunned before slaughter and less than 1 per cent were stunned after bleeding.

As far as sheep and goats were concerned, 307,512 were slaughtered at 202 establishments. Of this total, 1917 (less than 1 per cent) were slaughtered by the Shechita method at four establishments. None of the animals was stunned. Halal slaughter was carried out on 154,795 sheep and goats (50 per cent of the total) at 39 establishments, with 81 per cent being stunned before slaughter and less than 1 per cent being stunned after bleeding.

A total of 16,101,844 poultry were slaughtered at 73 establishments during the survey period. Of these, 71,236 (less than 1 per cent) were slaughtered by the Shechita method at five establishments. None of the birds was stunned. Twenty-nine establishments slaughtered 4,766,237 poultry by the Halal method, with 88 per cent of the birds being stunned before slaughter.

'The results indicate that the number of animals not stunned prior to slaughter is relatively low accounting for 3 per cent of cattle, 10 per cent of sheep and goats and 4 per cent of poultry' the FSA says. 'They also show that the majority of animals destined for the Halal trade in both the red and white meat sectors are stunned before slaughter.'

~ Vet Record, 9 Jun 2012

WHO offers some Guidance on Risky H5N1 Studies

The World Health Organization (WHO) has offered some brief, general guidance on safety and security in research on laboratory-modified H5N1 viruses, mainly stressing that researchers should follow existing guidelines and gain authorization from their governments. The WHO also reviewed existing guidelines, such as those in the WHO Laboratory Biosafety Manual, 3rd Edition, the guidance says. The resulting guidance consists of six points.

The WHO guidance comes a few months after the US government issued a new policy on life-sciences dual-use research of concern (DURC)-studies that can be used for good or ill-in late March. While researchers wait for more details on DURC policy, a voluntary moratorium on studies involving lab-modified H5N1 viruses is continuing.

NIAID Director Anthony Fauci, MD, said possible pathways toward lifting the research moratorium would be discussed at the upcoming meeting of the agency's Centers of Excellence for Influenza Research and Surveillance (CEIRS).

~ CIDRAP News, 24 July 2012
Dr Bayvel appointed as Chief Veterinary Adviser of WSPA

World Society for the Protection of Animals (WSPA) has announced that Dr David Bayvel will be joining the organisation on 1 July as Chief Veterinary Adviser. His newly created position will be replacing the role held by Dr David Wilkins from 2004-2012. Dr Wilkins will continue his involvement with WSPA, working on several special projects.

In his pivotal new senior role, Dr Bayvel will help ensure that WSPA is working at the heart of the veterinary profession around the world to support and advance animal welfare. This will include working with the World Organisation for Animal Health (OIE) on the drafting of standards to ensure the implementation of international standards and laws to protect the welfare of animals. He will also be advising on WSPA’s programmes supporting the education of veterinarians through our specially designed animal welfare training modules.

Dr Bayvel is one of the world’s pre-eminent experts in the fields of animal welfare and veterinary science. His career, which has taken him around the world, spans more than four decades and includes posts in private and public sector organisations and veterinary practice promoting ethical care and treatment of animals. He recently retired from the position of Director of Animal Welfare at the New Zealand Ministry of Agriculture and Forestry.

Dr Bayvel said, “I am honoured to join WSPA as its new Chief Veterinary Adviser. I have long admired WSPA’s measured approach to animal welfare and its commitment to improving the conditions for animals around the world. WSPA has a proven track record on the world stage of forging collaborations with other key international NGOs and governments to have a lasting positive impact for animals and their communities.”

Over the last two years, Dr Bayvel has received several prestigious awards and has been honoured by a number of international and national organisations, including the OIE. He was also awarded a Queen’s Service Order in the December 2011 Honours List.

Dr Bayvel has been actively involved with the OIE in addressing animal welfare issues at an international level. He chaired the 2001 OIE ad hoc expert group meeting on animal welfare and chaired the permanent OIE Animal Welfare Working Group from 2002-2012. He will now move to represent the International Coalition for Animal Welfare on this important OIE group.

Mike Baker, Chief Executive Officer at WSPA said, “We are thrilled that David Bayvel will be joining the WSPA family in such a key role. He brings with him a wealth of experience, which will be an invaluable asset to WSPA as we forge ahead in partnership with other key international stakeholders and the veterinary profession working towards a world where animal welfare matters and animal cruelty has ended.

“We also want to express our gratitude to David Wilkins for all his excellent work on behalf of WSPA over the years and for his continued support. We wish him well in all his future endeavours.”

~ http://www.wsiainternational.org/  
May 22, 2012

Genetically engineered bacteria prevent mosquitoes from transmitting Malaria

U.S. researchers have genetically modified a bacterium commonly found in the mosquito's midgut and found that the parasite causing malaria in people does not survive in mosquitoes carrying the modified bacterium. The bacterium, Pantoea agglomerans, was modified to secrete proteins toxic to the malaria parasite, but the toxins do not harm the mosquito or humans. The modified bacteria were 98 percent effective in reducing the malaria parasite burden in mosquitoes, said the report.

With the study, the researchers found that the engineered Pantoea agglomerans strains inhibited development of the deadliest human malaria parasite Plasmodium falciparum and rodent malaria parasite Plasmodium berghei by up to 98 percent within the mosquito. The proportion of mosquitoes carrying parasites (prevalence) decreased by up to 84 percent.

~ Xinhua News Service, 17 July 2012
Two possible scenarios for the future spread of Schmallenberg virus (SBV) in the UK were discussed by experts in the fields of epidemiology and vector borne diseases at a briefing held in London on March 1, 2012.

Prof Peter Mertens, research leader on the vector borne diseases programme at the Institute for Animal Health (IAH), explained that, since animals that had already been infected would be protected from further infection, the virus could potentially burn itself out in its distribution area. However, if the virus managed to survive the winter months -during which time there were no insect vectors to transmit it -it had the potential to reinfect the vector population and other host animals, causing another outbreak of disease.

He pointed out that, if the virus was transmitted again this year, the animals on the edges of the areas that had been infected previously would hemostat risk because they would not have built up immunity to it.

Although infected adult animals only showed mild clinical signs, such as milk drop and diarrhoea, if they had been infected during a critical period of pregnancy, it could have serious effects on the development of the fetus. The deformed fetuses that were being seen now were 'last year's story', he said. They were all the result of infections that had occurred in 2011 during fetal development.

Prof Matthew Baylis, head of the epidemiology division at the University of Liverpool, elaborated on this critical period. 'It looks as though it's infection in sheep between weeks 4 and 8 of pregnancy and, in cattle, weeks 8 to 14 in pregnancy, that leads to those serious effects in the offspring that are born,' he said. This explained why cases were being seen now and why the rate of increase in the number of sheep farms reported as being affected was slowing, but for cattle farms it was increasing.

'This reflects the fact that the period of pregnancy in cattle is longer; it's nine months as opposed to five months in sheep, so if they're infected at the same time, we would expect the effects in cattle to be seen later' he said.

A consequence of this was that the level of infection on cattle farms could reach that of sheep farms over the coming months.

'As we move more towards spring and with heightened awareness about Schmallenberg, I think it's inevitable that we will detect more and more of this infection without it necessarily indicating that we're actually seeing spread,' he said.

However Professor Mertens pointed out that the main concern was that the virus might begin circulating again in vectors during the period when there were a high number of pregnancies in sheep and cattle. 'The lambs that are being produced now are out of the insect vector season, so they perhaps represent not so much of a risk', he said, but calves that had been infected in September to November last year would be produced in April to June, when there would be large numbers of insects.

The main determinant of whether a new outbreak occurred in 2012 was the ambient temperature, he said. 'Climate, and particularly temperature, will influence whether or not the insects can transmit the virus at all,' he explained. Below 10 to 15°C, the virus would likely be inactive, but at higher temperatures, it developed faster inside the vector host. However in his opinion, SBV was unlikely to burn itself out in one year. This scenario, he said, seemed 'too good to be true'.

Professor Baylis added: 'Over the last 40 years, temperature changes in Europe, which Peter Mertens believed the scenario that Schmallenberg virus might burn itself out in one year was 'too good to be true'. Matthew Baylis suggested the UK would see 'more and more cases' this year without it necessarily indicating that the virus was spreading to most of us have felt relatively small, in our model have led to quite a large increase in the risk of transmission of midge-borne viruses? While this did not necessarily suggest that there was a role for climate change in the spread of SBV he said that it did show that 'changing climate is making it more likely that such events will happen'.

Next Steps

Professor Martens explained that work was currently being conducted at the IAH in Pirbright to determine which insect species were capable of transmitting SBV. Due to similarities between SBV and bluetongue virus, including the host species affected and the pattern of disease spread, it was considered likely that Culicoides midges were at least partially responsible for the spread of SBV. The IAH was also looking at the incubation period of the virus in different hosts and conditions.
A high-throughput diagnostic ELISA was under development, in collaboration with colleagues in mainland Europe, to enable the rapid detection of antibodies to the virus. This, he said, would enable thousands of samples to be processed per week to determine which animals had been infected. Research would also aim to determine whether there were other ways the virus could be transmitted. The high density of initial spread of SBV compared with bluetongue virus, which was transmitted by Culicoides midge, suggested that there might be additional routes of local spread, such as by contact, the faeco-oral route or aerosol.

The same company that had manufactured the bluetongue virus vaccine was in the process of developing a vaccine for SBV, he said. The question, was whether one was needed if the virus had the potential to burn itself out. It would realistically take about 18 months to produce a fully licensed vaccine, by which time there might be no virus to vaccinate against.

**Management Options**

Professor Baylis said that it was important to consider what could be done to protect the country’s livestock. One management strategy that he felt should be considered was housing animals during the night. Previous work by his research group at the University of Liverpool had shown that animals were exposed to much larger numbers of midges when they were outside. Although protection would not be absolute, he pointed out that the animals would only need to be housed during a particular period of pregnancy to avoid the serious consequences of SBV infection.

Prof Wim van der Poel, a researcher on emerging and zoonotic viruses at the Central Veterinary Institute in the Netherlands, pointed out that, in Australia, vector borne viral diseases had been controlled by managing the timing of service or insemination of animals depending on the season and concentration of midges. However the climate in Australia was very different from Europe and he felt that it was not very feasible to postpone insemination in Europe. 'I think there is not really much we can do when it comes to management to control the disease,' he said. He added that, in the Netherlands, SBV had been made a notifiable disease so that its spread could be tracked closely. The Dutch Public Health Institute was also conducting a survey of the human population, but, to date, there had been no evidence that people were at risk.

--- Vet Record, 10 Mar 2012

**WSAVA Congress Paper – ‘Eliminating Rabies At Its Source’**

During a stream of presentations on global travel and infectious diseases at the World Small Animal Congress in Birmingham last week, Dr Tiziana Lembo presented evidence to support attempts to eliminate rabies through vaccination in domestic dog populations in endemic areas across Africa and Asia.

Despite being a disease with a very high fatality rate, particularly in rural communities across the developing world, human rabies is 'entirely preventable through post-exposure treatment or through the control of animal reservoirs.'

So said Dr Tiziana Lembo, a research associate at the University of Glasgow giving a presentation entitled 'The global elimination of canine rabies: feasible or fantasy?'

Her take-home message was that, by tackling rabies in domestic dog populations across Africa and Asia - the worst-affected continents in terms of human mortality from the disease - it could be eradicated in these areas.

'All mammals can be infected with rabies, including humans, but only a few species can actually act as maintenance hosts,' she explained. Compartmentalisation of the disease meant that, in any given geographic area, specific species were responsible for the maintenance off different variants of the virus. In Africa and Asia, people were most commonly infected by transmission from infected domestic dogs.

From a UK perspective, not only was there a social obligation to help tackle neglected diseases overseas, but western Europe would benefit from being less at risk from reintroductions of rabies and from a decline in the demand for pre- and post- exposure prophylaxis treatments, which were costly for the public health sector she said.

Concerns about reintroduction had increased since the Pet Travel Scheme had changed its rules to allow dogs to enter the UK from endemic areas after just four months in quarantine, instead of six, as was previously the case. Data from Africa had shown that 'while the infectious period remains around 10 days, as the scheme previously reported, the incubation period can be rather long' she said. At times it was more than four months.
In addition to this, new species spanning various orders were emerging as hosts and, in the past 10 years, six new lyssaviruses had been discovered, two of which were yet to be classified.

It was clear that rabies was a significant problem that needed to be controlled, but, Dr Lembo said: 'We need to ask ourselves whether the elimination of canine rabies is actually possible'.

Previous initiatives aimed at eradicating diseases had identified principal criteria for disease eradication. These were: biological and technical feasibility; costs and benefits; and societal and political considerations. She considered each criterion in terms of the potential constraints to rabies eradication and the evidence to support its feasibility.

**Biological and Technical Feasibility**

'Elimination of disease in reservoir hosts has been attempted in the past and has been incredibly successful in some areas of the world' said Dr Lembo.

Although there had been about the large number of maintenance hosts for rabies, Dr Lembo explained that studies in the Serengeti had shown that cases in domestic dogs dominated both in areas where dog densities were high as well as areas where dog densities were lower, and that cases in other species were linked spatially and temporally to cases in dogs. 'Even if chains of transmission do occur in wild carnivores, they tend to be short-lived,' she said.

Looking at the sequence data of rabies virus variants had shown that, in transmission networks, domestic dog sequences tended to be located at ancestral sites, while sequences from other species were located at the tip of the networks.

This evidence suggested that domestic dogs were the main species responsible for disease maintenance and that vaccination of a big enough proportion of the dog population would lead to interruptions in transmission, eventually enabling disease elimination in other species.

Another technical challenge in disease elimination was calculating how many host species would need to be vaccinated. Working out the optimal vaccination coverage required calculation of the basic reproductive number, or R9. She explained that this was a measure of the number of secondary cases that each individual primary case could cause in a population of susceptible individuals. An R0 of 1 meant that, on average, every infected dog would infect one other. If R0 was less than 1, the infection should eventually burn itself out and if it was greater than 1, intervention was required to prevent spread of disease.

For rabies in domestic dogs in the Serengeti, the R0 had been calculated as between 1.1 and 1.3, which meant that vaccination had a good chance of being effective. Even in areas of the world where dog population densities were much higher, for example Asia, the R0 was still low, she said. 'While there are still uncertainties as to why the R is independent of dog densities, in terms of disease control, this is excellent news.'

Based on the R value and the abundance and turnover rate of the domestic dog population, she said that vaccinating 70 per cent of domestic dogs was the coverage required in areas of high rabies density.

The next consideration had been whether it would be possible to administer vaccines to this many dogs. There had been concerns that stray dogs or those living within remote communities were inaccessible. However evidence had shown that most dogs in Tanzania had owners and the same was true for other countries studied.

Owners were also very willing to bring their dogs to a central point for vaccination, often walking distances of up to 5 km.

'In areas where we've been conducting vaccination campaigns in central locations in the middle of the village where people could bring dogs, coverage has always been incredibly high and independent of the socioeconomic status of the person bringing the dog', said Dr. Lembo. In more remote areas, more creative interventions such as house visits had been effective.

Another operational constraint was a lack of knowledge about the total number of host animals. 'A lot of work has been done in many parts of the world trying to collect information on dog ecology and also dog numbers,' she explained. For the time being, measures were based on extrapolations from segments of the population, but Dr Lembo felt that a solution would be to 'try to encourage local governments to include dog census efforts in nationwide censuses of the human population'.
Costs and Benefits

One of the problems with rabies was that, in many developing countries, the disease was massively underreported, said Dr Lembo. However, it was estimated that more than 50,000 people died from rabies in Africa and Asia each year.

In addition, the disability-adjusted life-year burden for rabies was far greater than that for most other neglected zoonotic diseases that tended to attract more media attention, such as SARS and Nipah virus.

The morbidity effects of rabies should also not be underestimated, she said. Infection caused fear and uncertainty and there were psychological impacts associated with severe, often disfiguring, injuries caused by rabid animal bites. 'People exposed to this virus have to incur very high costs to actually get life-saving post-exposure prophylaxis,' she pointed out. 'This is not only because the vaccine is incredibly expensive, both in terms of the vaccine and rabies immunoglobulin, but also because people need to travel to hospital several times to complete their treatment.'

Central point vaccination of domestic dogs was robust, effective and, at US $2 per shot, relatively cheap. Modeling approaches had demonstrated that dog vaccination was more cost-effective than post-exposure prophylaxis.

'If we prevent human rabies by targeting human populations through post-exposure prophylaxis, this means we're not doing anything in terms of eliminating the disease at the source,' she said. Although vaccinating dogs required a high initial investment, in the longer term costs would 'dramatically reduce'.

Societal and Political Considerations

The approaches used to engage local communities had been well received; there had been good attendance at vaccination campaigns and engagement in global awareness, she said. World Babies Day, held annually on September 28, had helped to promote global awareness since 2008 and, in 2011, 150 countries had participated.

The use of mobile phones was expanding hugely in developing countries and, in Tanzania, this had been taken advantage of. Mobile phone technologies were now being used to report data on vaccine stock management, disease incidence and impact of control procedures.

In some countries, there had been engagement between veterinary and medical services; for example, in some Latin American countries, where the ministry of health had led dog vaccination campaign. The administrative challenges associated with this could be quite difficult, she said, but she was optimistic the situation would improve.

'In terms of the political perspective, global rabies elimination efforts have very heavily relied on the expertise and support of great advocates for global elimination, such as the Global Alliance for Rabies Control and the Partners for Rabies Prevention; Dr Lembo explained. Among other things, these partnership groups were tasked with assessing the global burden of rabies; increasing attention on rabies at all levels; identifying and addressing gaps in canine rabies prevention, control and elimination; providing strategies to endemic countries to help them design national programmes to assess their own situation; and securing financial support.

Challenges

'There are many reasons to believe that we can get rid of rabies' said Dr Lembo. However, one of the main challenges that needed to be faced was improving awareness at the national level. 'This is because rabies mostly affects communities that are neglected, that are marginalised and have little political voice, and also because the species that we need to target for control is neglected by the veterinary sector because it's not a typical economic commodity'.

'We can still work towards generating more and more awareness and making sure that research findings are translated into policy' she added.

Efforts should also focus on increasing capacity within veterinary and public health services for strategies for rabies surveillance and on enhancing intersectoral dialogue and Integration of budgets across relevant ministries. Continuous education of at-risk communities was vital, as was persuading major international donors that investing in canine rabies elimination was worthwhile.

'Most importantly', she said, 'we need to work towards global strategy that should benefit from the support of international communities.'
The threat of new zoonotic disease pandemics should not be underestimated, said Ab Osterhaus, giving the World Small Animal Veterinary Association’s (WSAVA) International Lecture at the recent WSAVA/FECAVA/BSAVA Congress. He highlighted the importance of identifying and tracking viruses so that vaccines could be developed and control measures put in place.

Highly pathogenic avian influenza A viruses can kill about 60 per cent of the people they infect, but, at this time, do not have the capacity to spread from human to human. If mutations occurred that made this possible, it would lead to a highly lethal pandemic.

This was a sobering message from the WSAVA international lecture, ‘Zoonosis to Pandemic: Viral Threats from the Animal World’, given by Ab Osterhaus, head of the department of virology at the Erasmus Medical Centre in the Netherlands, during the WSAVA/FECAVA/BSAVA Congress in Birmingham.

Of even more concern were the results of research, carried out in Professor Osterhaus’s laboratory which showed that it was possible to create a virulent strain of avian influenza virus that was capable of human-to-human transmission. We have analysed what the virus needs to really become transmissible from animal to animal, from mammal to mammal, and probably from human to human;’ he said. ‘It's not more than a handful of mutations.'

He pointed out that, since these mutations were already circulating in separate influenza viruses in the wild, a pandemic of highly pathogenic avian influenza in humans was a very real possibility.

However new strains of existing viruses were not the only threat to humans, and new challenges continued to present themselves. ‘There is a plethora of reasons for that he said, citing globalisation and global travel, urbanisation and human encroachment as examples.

In 1999, seven people had died after visiting Central Park in New York. ‘It took quite a while before the virus was identified as West Nile virus he said, because that virus did not usually occur in the USA. He explained that mosquitoes carrying the virus had probably been transported from the Middle East on aeroplanes. Within two years, it had spread throughout the eastern states of America. We call this kind of outbreak a virgin soil epidemic', he said. 'If you introduce a virus in an area where it has never been before, there's no resistance at all and it sweeps over the country.'

He pointed out that West Nile virus had been 'knocking on the door' of Europe for a long time.

‘Our world is globalising. Our world is changing' he said, and this was contributing to the emergence of new infections.

Wildlife was the origin of most new viral infections, which tended to spill over into domestic animals and then infect humans. ‘I think it's important to realise that we, as the human species, are just another animal species he said. He also pointed out that, while, in the medical world, most of the interest was in public health, animal health and animal welfare were also very important.

Avian influenza virus was a good example of this, since it had necessitated the culling of hundreds of millions of chickens, either because they were infected or because they had been in contact with other chickens that were infected. ‘That has a major impact for global food supply, but also economies in certain countries,' he said.

Infectious diseases also had the potential to infect an endangered species and wipe it out completely.

Fortunately, there were a number of measures that could be put in place to mitigate the risks. These included research to identify new viruses or the potential for existing ones to become more virulent, as well as measures to control the spread of infection, such as vaccination or isolation procedures.

An example of protective measures failing occurred in the USA in 2003, when a number of humans contracted monkeypox virus from prairie dogs that had been kept in quarantine alongside wild-caught Gambian giant rats. Both species had been imported and distributed to pet shops. ‘We have to be very careful with these kinds of measures', he said.

Another issue to consider was whether it was still necessary to vaccinate against viruses that were no
longer present in the population. Professor Osterhaus described the global eradication of smallpox as 'one of the greatest achievements of modern medicine', but, he said, since the late 70s, vaccination against smallpox in children had been discontinued. People under the age of 35 had never been vaccinated against it, and many people had not come into contact with other orthopoxviruses.

While the risk of smallpox was no longer present, other orthopoxviruses, such as monkeypox virus, were maintained in animals and could be fatal if contracted by immunocompromised individuals.

'We can eradicate infection,' he said, 'But I think we cannot automatically say we have to discontinue vaccinating.'

Similarly, many people were immune to measles because they had either been vaccinated against it or infected with it. Measles was a morbillivirus, of which there were many species that infected a wide range of animals. We are making great progress today in eliminating and eradicating measles; he said. He posed the question of whether, if measles were eradicated, vaccination should continue.

**New Technology**

Due to what he described as 'an explosion of new technology', it was now possible to identify new viruses more quickly.

In his laboratory, a new virus human metapneumovirus (hMPV) - had been identified using sequencing. Phylogenetics had shown that its most recent common ancestor occurred about 200 years ago. It had transpired that this was another avian virus that had crossed the species barrier into humans.

~ Vet Record, 5 May 2012

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**AVA Conference: How to Feed Nine Billion People and Maintain Animal Welfare**

In a world where approximately 14 per cent of people currently go hungry every day, less than half the land is stable, and where an increasingly volatile climate impacts agricultural production, any addition to the human population is bound to cause problems.

Dr Virginia Williams, New Zealand Veterinary Association, spoke at the Australian Veterinary Association’s National Conference in Canberra on the conflict between the world’s increasing appetite for animal derived protein, the need for ongoing gradual improvements in animal welfare and where the veterinary profession will make a difference.

“We are not feeding the current seven billion people because many of the world’s populations do not have sufficient land to cultivate, or income to purchase food,” Dr Williams said.

“Degradation of land has increased with growth in human populations and clearing of natural vegetation has led to soil erosion and nutrient depletion. Climate change is also having an effect on agricultural production.

“Another issue is economic viability - farmers will not produce food unless it is economic for them to do so. And of course a big impact has been society’s increasing demand for more humane use of resources, including livestock.

According to the UN Food and Agricultural Organisation, agricultural output will need to increase by 70 per cent by 2050 in order to feed the world’s population which will require another billion tonnes of food grain and 200 million tonnes of livestock meat.

“The key to increasing food production from animals will be in improvement of productivity through selectively using genetic technologies to breed for animal welfare friendly objectives such as enhanced disease resistance. Other techniques will include breeding animals appropriate to their environment.

“Both Australia and New Zealand are already well down the track of genetic improvement that’s essential for increased efficiency in livestock production.

“Australia’s role in food security in not just about producing food for the world’s food deficit countries, but providing technical assistance that helps them feed themselves and improve their ability to afford food.

“There is a real opportunity for the veterinary profession to contribute to the feeding of the nine billion while safeguarding animal welfare,” Dr Williams said.

New Director of the Commonwealth Foundation

Dr. Vijay Krishnarayan, Deputy Director of the Commonwealth Foundation has been appointed as its Director. Dr. Vijay Krishnarayan hails from Trinidad and Tobago and has supported civil society organisations in the United Kingdom, Caribbean and the wider Commonwealth over the last 25 years. A land-use planner by training, he has a special interest in the relationship between development and the environment. Before joining the Commonwealth Foundation in 2006, he spent over a decade in the Caribbean, most notably as Managing Partner for the Caribbean Natural Resources Institute (CANARI), one of the region’s sustainable development think tanks.

From 2006-2012 he served as the Foundation’s Deputy Director. In this capacity he had oversight of the Foundation’s grants and programmes and helped build the organisation’s communications capacity. He led the Foundation’s coordination of civil society inputs to the Commonwealth Heads of Government Meetings in 2007 (Kampala), 2009 (Port of Spain) and 2011 (Perth). He was also at the forefront of Commonwealth organisations’ work to re-engage with their counterparts in Zimbabwean civil society.

On announcing the appointment, Commonwealth Foundation Chair Madam Simone de Comarmond said: “I am very pleased that the Foundation now has Mr. Krishnarayan at the helm. In him, we have a tried and tested leader, who understands the potential that this unique organisation has to offer in pursuit of the Commonwealth’s goals of development and democracy. I offer my full support to him and the staff of the Foundation as they take the organisation forward and into a new phase.”

The Commonwealth Foundation is an inter-governmental organisation guided by Commonwealth values that encourages citizens to act together, learn from each other and dialogue with government. Formed in 1965, it aims to strengthen civil society in the achievement of Commonwealth priorities including democracy, good governance, sustainable development and cultural diversity. Former Directors include Inoke Fotu Faletau (Tonga) and Humayun Khan (Pakistan).

Mr Krishnarayan said: “I am delighted to have been appointed to lead the Commonwealth Foundation. I believe that the irrepressible dynamism of civil society is central to the future of the Commonwealth. The Foundation is uniquely placed to enable peoples’ organisations as they act together, learn from each other and express themselves in support of the Commonwealth’s goals.” He continued: “I am especially proud to be the first Trinidad and Tobago national to have been appointed to the office of Director of the Commonwealth Foundation. I was raised under the motto “Together we aspire, together we achieve.” I can think of no better strapline for the project we are about to embark on.”

Vijay enjoys spending time with his young family, following the Arsenal Football Club and watching test cricket.

CVA President in WVA Committee

Dr. S. Abdul Rahman, President CVA has been nominated to the World Veterinary Association (WVA) Committee on Constitution Amendment representing Associate Membership of WVA.

CVA Officers Meeting in London
August 27th to 30th 2012

For the first time after being elected this year the CVA Officers will meet in London from August 27th to 30th, 2012 to discuss future strategies and discuss the work plan of the association.
The Commonwealth Foundation has appointed Ms Myn García, former Director-Development of the Canadian International Development Agency (CIDA) funded Afghanistan Technical Assistance Program (ATAP) based at Kabul, Afghanistan as its Deputy Director.

She was earlier the Canadian Field Program Manager of the CIDA funded Local Governance Support Program in the Autonomous Regional of Muslim Mindanao (LGSPA) in Southern Philippines. From 2001-2006, she was the Communication and Peace Advisor of the flagship governance program of CIDA in the Philippines- the Local Government Support Program Phase II (LGSP II).

In her work in development, she drew on her areas of expertise in democracy and governance, peace building, gender, cultural diversity, communications for development, social marketing and advocacy, capacity development and knowledge management. She has solid experience in participatory governance, which includes strengthening civil society engagement with government and facilitating community consultations, dialogue and mobilisation. She has worked with national and local governments, civil society organisations, international organisations, academia, media and the private sector in Canada, the Philippines, Sri Lanka and Afghanistan. Her work in the NGO and private sectors included serving as Program Manager of the Laurier Institution, a non-governmental Canadian policy think-tank based in Vancouver, BC working on the economic and social impact of cultural diversity and peace.

As Deputy Director, Ms García has responsibility for Programmes, Grants and the integration of results based management across the organisation.

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  *This course aims to teach the principles and practice of managing all aspects of wild animal health, both in captivity and in the wild. Applicants will be expected to have a degree from a recognised veterinary school.*

- **Wild Animal Biology**
  
  *This course includes much of the high quality tuition provided on the Wild Animal Health course and replaces veterinary skills training with training in research methodologies relevant to the study of wildlife. Applications will be invited from candidates with a biology / zoology degree with preference being given to those that have received, inter alia, training in the paraclinical subjects (microbiology, parasitology and pathology).*

**Contact our Graduate School**

Telephone +44 (0) 20 7468 5542
Fax +44 (0) 20 7468 5060
Email: graduateschool@rvc.ac.uk
www.rvc.ac.uk/postgrad
www.zoo.cam.ac.uk/ioz/postgrad.htm
The CVA and OIE have formally signed an agreement with a view to encourage collaboration between the two organisations on issues of common interest.

This historic document was approved for signing during the General Assembly in May 2012. Since Dr. Rahman could not be in Paris during the General Assembly to sign it, the signed copy of the agreement by Dr. Bernard Vallat, Director General OIE was handed over to Dr. Rahman for signing by Dr. Monique Eloït, Deputy Director General OIE in Paris on June 27th 2012 in the presence of Dr. Peter Thornber Treasurer CVA.

This agreement includes the following issues of common interest:

- The recognition of the importance of animal health and welfare throughout the world and the global nature and emergence of diseases
- The recognition that as diseases knows no boundaries, their control and eradication must be properly addressed in both developed and developing countries
- The role and responsibilities of the veterinary profession in animal health and welfare with special reference to developing countries

Ensuring effective and constructive relationships amongst veterinarians, their associations and official veterinary services.

The importance and delivery of continuing education of veterinarians dealing with farm, wild and companion animals in the above mentioned fields, especially within those countries with limited resources.

It has further been agreed that the OIE will invite the CVA to participate as observer in relevant commissions, working groups, consultations and international conferences that are organised to address issues of common interest and that the CVA will invite OIE to participate in similar works concerning issues of common interest and if necessary and whoever required by circumstances the OIE and the CA will exchange their points of view on all issues of common interest.

The Permanent OIE Working Group on Animal Welfare has been reconstituted with the appointment of Dr. S. Abdul Rahman, President CVA as its Chairman. Dr. Rahman replaces Dr. David Bayvel who will now be representing the International Coalition for Animal Welfare (ICFAW) having succeeded Dr. David Wilkins as the World Society for the Protection of Animals (WSPA) Chief Veterinary Adviser. The other new member of the group is Dr. Peter Thornber, Treasurer of CVA who will be representing Asia, the Far East and Oceania on the Group. Other members of the group include Prof. Hassan Alidaso, Egypt; Prof. David Fraser, Canada; Dr. Andrea Gavinet, European Commission; Dr. Vincent Guyonnet, International Egg Commission; Mr Luc Mirabito, International Dairy Federation, a representative from the International Meat Secretariat to replace Prof. Neville Gregory and Dr. Marosi Molomo, Lesotho.

**OIE Working Group on Animal Welfare Reconstituted**

Sitting (L-R): Drs Mariela Varas (OIE Int'l Trade Dept), S.A. Rahman, D. Bayvel, M. Molomo and D. Wilkins
Standing (L-R): Drs D. Fraser, D. Belton, A. Thiermann (President, OIE Terrestrial Animal Health Standards Commission), H. Aidaso, P. Thornber, V. Guyonnet and A. Gavinet
The CVA Book Programme is coordinated from the Ontario Veterinary College at the University of Guelph by Dr. Brian Derbyshire, assisted by Dr. Barry Burtis, and by Dr. Jeff Cave in Australia. Books are donated by veterinarians in Canada, Australia and New Zealand, all of whom are thanked for their generosity, without which the programme would not exist. They are available for distribution free of charge to graduate veterinarians, but not undergraduate veterinary students, in CVA member countries in good standing. Priority is given to requests from institutional libraries, such as veterinary schools and veterinary associations, and requests from individuals are met as funds permit. Postgraduate students are encouraged to submit their requests through the librarian at their institution, to ensure that the books will be widely available. Because of budgetary constraints and steeply rising mailing costs, the number of books which can be shipped is normally restricted to up to 30 titles for institutions, and up to 5 titles for individual veterinarians in any one year. Individual veterinarians are encouraged to share their books with colleagues in their area if possible.

Requests for books should indicate the required subject areas and/or preferred titles where possible, and they should include the mailing address to which the books should be sent. The latter should be abbreviated as much as possible in order that it may be accommodated in the limited space provided on the customs declaration. It is suggested that those wishing to submit a request should first obtain a copy of the current inventories of books available by contacting, preferably by e-mail, either Dr. Derbyshire or Dr. Cave (see above for contact information). Shipments are made by surface mail, and may take several months to reach their destination. The recipients are requested to acknowledge the safe arrival of the books.

During the period July 2011 - June 2012, 60 books were sent from Guelph to 3 Commonwealth countries as follows: Ghana (33 books), Pakistan (15 books), and India (12 books). Shipments of books from the Guelph depot have been severely curtailed by reduced funding during this period. From Australia and New Zealand, 344 books were sent to 11 different countries as follows: Uganda 97, Belize 65, East Timor 45, Trinidad and Tobago 33, South Africa 32, Swaziland 26, Sudan 17, Ghana 14, India 6, Pakistan 5, and The Gambia 4.

The current inventory at Guelph comprises over 500 titles, and the Australian and New Zealand depot close to 500 titles. Multiple copies of many titles are held. Most of the books were published during the last 20 years; older texts, for which more recent editions are available, are discarded each year. While most areas of veterinary medicine are covered, particularly by the Australian depot, the increasing emphasis on companion animal medicine and surgery in Canada has led to a preponderance of titles in these areas in the Guelph depot, and fewer titles in large animal medicine and surgery, and in public health. The stock of books at Guelph is replenished periodically through the cooperation of the Ontario Veterinary Medical Association by their generous collection of donated books at their annual conference.

July 2012

J.B. DERBYSHIRE
Coordinator
CVA Book Programme
The Fund

This fund has been established by the Commonwealth Veterinary Association (CVA) in conjunction with the Commonwealth Foundation to honour the contributions made by Mr. John Anderson and Dr. L.P.E. Choquette in establishing and promoting the activities of the Commonwealth Veterinary Association.

Financial support to match the funds contributed by the Commonwealth Veterinary Association and the several national and local veterinary associations throughout the Commonwealth may be provided by the Commonwealth Foundation.

1. Purpose

Its purpose is to provide financial assistance to:

1. Veterinarians who are members in good standing of their respective national associations to undertake short term study visits to schools, institutions or to undertake short term study courses in veterinary medicine, animal production or related areas in other Commonwealth countries.

2. Animal Health Assistants recommended by the appropriate CVA Council Member and Regional Representative, to undergo further short-term training at a school or institution in another Commonwealth country. It is expected that such visits will promote professional and para-professional contacts and provide grantees with new knowledge and expertise in their respective fields of interest. Study proposals which will directly benefit the rural poor and disadvantaged will receive sympathetic consideration. All proposals will be expected to describe how they will benefit the home institution, veterinary organization and community. The visit is also expected to result in a broadening of cultural experience and horizons and to promote Commonwealth understanding.

2. Guidelines

1. Grants will be limited to persons with field experience and not holding senior positions.

2. The awards are not normally available for University academic or research staff.

3. Preference will be given to related regions with 'south-south' movements being encouraged. In exceptional cases, visits to institutions outside the regions qualifying under south-south arrangement will be considered as long as the cost of the visit does not exceed the allocated fund award (AUS $ 3000). In exceptional circumstances and where approved by the President grantees may receive training in a non-Commonwealth country within that Region.

4. The study period should be preferably between 2-3 weeks.

5. Awards will normally be distributed equally amongst Regions, however, on occasion, the President may authorize additional awards to a particular Region in any one year.

6. The study visits will be financed at a maximum of AUS $ 3000 including a prepaid air ticket for the least expensive and most direct route.

7. Grants are provided only for periods of concentrated study or training on a particular topic or activity and cannot be made for attendance at conferences, meetings etc., nor to underwrite a tour of visits to a number of institutions.

8. A report must be submitted to the Secretary CVA within three months of the completion of the study visit. At the completion of the study visit, the participant must receive a letter of release, which should clearly indicate duration of stay, and satisfactory completion of course. The letter should also confirm that at the time of departure, the participants have not left any debts unsettled. This requirement must be conveyed by the Regional Representative or Programme Director to the host institution before arrival of participant.

9. It will be necessary for the host institution to agree to assist in arranging suitable accommodation etc. affordable by the applicant.

10. Grantees will be expected to give one or two lectures at the host institution or veterinary association on aspects of animal health and production activities in their home country. These lectures should emphasize how their studies in the host country will benefit the rural poor and disadvantaged as well as their impact upon the environment.

11. These lectures and the discussions of topics, both professional and social, with the staff of the host institution or veterinary association will serve to further the aims and objectives of the Commonwealth Veterinary Association.

3. Applications

i) There is a set Study Application Form/Application. Forms are available from the CVA Secretary, or through the CVA Website.

ii) Applications should be submitted to the appropriate Regional Representative for processing, at least 6 months prior to the proposal visit.

iii) The applicants should provide the following:

a) A complete curriculum vitae to the Regional Representative

b) Two passport size photographs

c) A letter of acceptance from the person who will supervise the study program in the host country

d) Evidence that the study has the support of his/her home institution or national association

4. Administration

i) The Study Application Form with supporting documents must be sent to the appropriate Regional Representative

ii) The Regional Representative will review the application and make a recommendation to the Secretary, CVA.

iii) The Secretary, CVA will make a recommendation to the CVA President, who will make the final decision.

iv) The Secretary, CVA will then inform the Regional Representative who will inform the candidate.

Last date of submission of request to Council Members/Reg. Rep. is 30th Oct. 2012. RRs to submit their recommendations before 30th Nov. 2012 to the Secretary, CVA.
World Veterinary Day Celebrated in the Commonwealth on April 28th, 2012

World Veterinary Day was celebrated in many countries of the Commonwealth and we have reports from Nigeria, Pakistan and India.

Nigeria

It was celebrated in city of Akure in Ondo State, Nigeria with the veterinary profession being highlighted by news through banners, radio and television jingles, announcement and news Nigeria with a population of 150 million people is divided into 36 states and a Federal Capital Territory (FCT) called Abuja. Each of these federating states previously marked the World Veterinary Day separately since 2000 on the same day. But this year, activities marking the celebration were concluded in the various states before 25th April 2012 to enable the officers from the respective states chapters of Nigerian Veterinary Medical Association (NVMA) to participate in a centrally organized ceremony on Saturday 28th April 2012.

A well-attended Press Conference that was addressed by Dr Gani Enahoro, National President of Nigerian Veterinary Medical Association was also held.

Pakistan

World Veterinary Day was celebrated at Faculty of Veterinary Sciences Bahauddin Zakariya University Multan Pakistan on 4th May. The event was organized By Zakariyan Rising Vets Society under the supervision of Dr.Saleem Akhtar & Dr. Abdul Asim Farooq. The main theme of the event was Antimicrobial resistance and a special address was presented by Prof. Dr.Zafar Iqbal. A seminar was organized on the topic of “Anti-Microbial Resistance” at the Anatomy lab of the faculty of veterinary sciences Multan. Farhan Ali, Department of clinical sciences, BZU covered different aspects of the topic in his presentation.

In Pakistan World Veterinary Day was also celebrated at Faculty of Animal Husbandry and Veterinary Sciences (FAHVS), Agricultural University Peshawar on 30 April with collaboration of Livestock Trainers and Consultants (LTC), ICI Pakistan (Animal Health Division) and Nawan Laboratories. Brooke Hospital for Animals, and Livestock and Dairy Development Department.

Prof M Subhan Qureshi, Dean, Faculty of AH and Vet Sciences in his inaugural address emphasized on the utilization of livestock resources for the welfare of the people and for supporting the national economy.

WVD was also observed at the Faculty of Veterinary Science, UAF Faisalabad, Pakistan, Prof. Dr. Ghulam Muhammad Chairman, Department of Clinical Medicine and Surgery. Prof. Dr. Nazir Ahmad, Acting Dean, FVS, UAF along with faculty members and a number of students participated in the programme. A seminar was also held on the topic of “Anti-Microbial Resistance”. Dr. Toufeer Mehti Lecturer, Institute of Microbiology, UAF covered different aspects of the topic in his presentation.
Pakistan News

Commonwealth Veterinary Association and Vet Crescent Society, UVAS Lahore arranged a free deworming camp on 17th March 2012 at village Jia-Bagah Raiwand, Lahore. More than 80 registered members participated in this activity and dewormed more than 500 animals. They also provided advisory services to the local farmers. Country Councillor CVA and Vet Crescent Society’s patron Dr. Aneela Zameer Durani, supervised and sponsored the activity. CVA is thankful to staff and veterinary officer, Dr. Nadeem Kamal, L&DD Department for supporting the activity.

CVA has planned a photography competition in collaboration with Brooks Pakistan and UVAS, Lahore in June, 2012

World Veterinary Day in India

World Veterinary Day was celebrated throughout the country with the organization of technical seminars on antimicrobial resistance and other activities to include vaccinating dogs against Rabies, vaccination of stray cows in animal shelters with FMD vaccine etc.,

In the state of Gujarat the Gujarat Veterinary Association held the programme in Navsari Agricultural University, Gandhinagar.

Various technical papers were presented at the scientific session prominent among them being “Use Antibiotics Judiciously To Prevent Antimicrobial Resistance” by Dr. J.K. Malik, Former Joint Director (Research), Indian Veterinary Research Institute, Izatnagar, India and “Understanding Clinical Pharmacology Of Antimicrobials For Their Rational Use In Veterinary Practice” by Dr. A.M. Thaker, Dean, College of Veterinary Science & A.H., Anand Agricultural University, Anand, India.


Dr. S. Abdul Rahman, President CVA was the Chief Guest at the Karnataka Veterinary Association’s WRD celebrations at Tumkur, Karnataka, India on 28 April 2012. He presented a paper on ‘The Role of Veterinarians in Controlling Zoonotic Diseases’.

Recognition for Veterinary College

The Tamil Nadu Veterinary and Animal Sciences University (TANUVAS), India has been conferred with the prestigious ‘Sardar Patel Outstanding ICAR Institution Award 2011’ recognising its meritorious performance in education, research and extension in the country in the field of agricultural sciences including veterinary, animal and fisheries sciences.

At the Award
L-R: Dr. R. Prabakaran, Shri Sharad Pawar, Shri. Harish Rawat, Dr. S Ayyappan

Shri Sharad Pawar, Hon’ble Union Minister for Agriculture and Food Processing Industries presented the Award to Dr. R. Prabakaran, Vice Chancellor, TANUVAS in the presence of Shri. Harish Rawat, Hon’ble Union Minister of State for Agriculture, Food Processing Industries and Parliamentary Affairs and Dr S Ayyappan, Director General, Indian Council of Agricultural Research (ICAR).

~ TANUVAS Newsletter, Jul 2012
OIE Appointments for Aussie Livestock Experts

The Minister for Agriculture, Fisheries and Forestry, Government of Australia, Senator Joe Ludwig, has welcomed the appointment of Australian experts to key specialist groups of the World Organisation for Animal Health (OIE). "This is a real demonstration that Australia’s expertise and commitment to improved animal health and welfare is recognised internationally," Senator Ludwig said.

The announcements were made by the OIE at the conclusion of its 80th General Session of the World Assembly in Paris.

Australia’s delegate to the OIE and Chief Veterinary Officer, Dr Mark Schipp, has been elected to the Council of the OIE, and Department of Agriculture, Fisheries and Forestry (DAFF) Director of Animal Welfare Policy, Dr Peter Thormber, is now a member of OIE’s Animal Welfare Working Group.

The World Assembly also elected the Director of DAFF’s aquatic animals’ program, Dr Ingo Ernst, to the Aquatic Animal Health Standards Commission.

"The Australian Government strongly supports OIE activities and initiatives in animal health and welfare," Senator Ludwig said.

"As a member country, Australia contributes to OIE processes to enhance global animal health and animal welfare and to ensure that standards are science based and will facilitate safe trade in animals and animal products. The appointment of these Australian experts to provide leadership in animal health and welfare standards is a significant achievement and I congratulate each of them.

"Australia has contributed strongly to the OIE for many years and these newly appointed Australian experts will be able to provide a valuable perspective from the Asia—Oceania region."

The OIE was formed in 1924 and is the intergovernmental organisation responsible for improving animal health worldwide with 178 member countries.

Chicken Vaccines Combine to Produce Deadly Virus

Vaccines aren’t supposed to cause disease. But that appears to be what’s happening on Australian farms. Scientists have found that two virus strains used to vaccinate chickens there may have recombined to form a virus that is sickening and killing the animals.

Chickens worldwide are susceptible to a group of herpesviruses called ILTV, which target their upper respiratory tract. The resulting disease, known as infectious laryngotracheitis (ILTV), reduces egg production and can kill up to one-fifth of those infected.

To combat ILTV, farmers vaccinate their chickens with attenuated herpesviruses that can still infect and replicate but do not lead to disease. Australia has used two vaccines, which are produced by Pfizer and called SA2 and A20. In 2006, however, the country purchased a new vaccine from European company Intervet called Serva. Two years later, new strains of ILTV, called class 8 and 9, appeared.

The data for the recombination is "convincing," says Walter Fuchs, who heads the National Reference Laboratory for Infectious Laryngotracheitis of Poultry on the island of Riems in Germany. The combination of vaccine strains to form a new virus is “a problem that needs to be taken seriously,” adds Thomas Mettenleiter, head of the Federal Research Institute for Animal Health also on Riems. Only well-characterized live vaccines, rendered harmless by mutations in the same or overlapping regions, should be used in order to minimize the risk of recombination to a new virulent strain, he argues.

"This is not a panic-button on vaccines," says Browning. And Farrell stresses vaccines have been one of the great success stories of medicine. "The type of important technicality raised in this article should not be allowed to detract from the enormous health benefit generally provided by vaccines," he wrote.

~ Science Now, 13 July 2012
Dr. Jim Fairles Appointed 64th President of the CVMA

Dr. Jim Fairles of Mount Forest, Ontario, has been appointed the 64th national president of the Canadian Veterinary Medical Association. Dr. Fairles succeeds Dr. Lloyd Keddie, of Fairview, Alberta, whose term as president officially came to an end on July 15, 2012.

Dr. Fairles has been a member of the CVMA for many years and for the past six years, he has sat on the CVMA Council as the Ontario representative. He has also been on the Executive of the CVMA for three years. His CVMA work also includes being the CVMA representative and past Chair to the Canadian Animal Health Coalition.

A 1980 graduate of the Ontario Veterinary College and a 1999 graduate of the University of Guelph, MBA, he is now retired from active practice where he had managed a mixed practice in Mount Forest, Ontario for 25 years. His areas of interest include dairy, beef and swine health management.

Canadian Veterinarians Awarded for Exceptional Contributions to Veterinary Medicine and Animal Health

Dr Duane Landals was the recipient of the 2012 CVMA President’s Award. The CVMA President's Award is given on occasion to recognize an individual for his or her dedication and exceptional contribution to the Association. Over the years, Dr Duane Landals has shared his passion, his vision and his leadership with his peers and with the veterinary leaders in Canada and on the international scene.

He graduated from the University of Alberta with a Bachelor of Science degree in Agriculture with a major in animal and soil science, and in 1975, he obtained his Doctor of Veterinary Medicine degree from the Western College of Veterinary Medicine in Saskatoon. At the provincial level, Duane served as Councilor and President of the Alberta Veterinary Medical Association; at the national level, he served on the Council of the Canadian Veterinary Medical Association representing the veterinarians of the province of Alberta.

Dr. Landals was later appointed to the Executive committee of the CVMA and, in 2003, was sworn in as the 57th President of the Canadian Veterinary Medical Association. His involvement in veterinary governance has also made him the ideal individual to Chair the 29th World Veterinary Congress and to serve as Vice-President of the World Veterinary Association.

News from Caribbean

The Trinidad and Tobago Veterinary Association (TTVA) in the last 6 months has actively championed reformation of the Dangerous Dogs Act (DDA). We participated in one out door march, spoke at 3 consultation meetings, participated in 3 TV interviews and 2 radio talk shows. We also forwarded two press releases and had our opinions quoted on several local newspaper articles. Following our support for a revision of the current DDA our legislators have very recently agreed to revisit the act and have introduced more responsible ownership amendments.

The TTVA also led the way by being one of the first Caribbean Veterinary Association to support the CARICOM professional bill. Following talks with our membership and the CARICOM Secretariat and our ministry of trade; the TTVA agreed to support a Caribbean professional bill which would allow qualified veterinary professionals to work in any part of CARICOM. The implication of this support was that, our old outdated veterinary bill would in the near future be replaced by one which would allow veterinarians a greater input in issues affecting the veterinary profession.

In May of this year the Caribbean Veterinary Medical Association was officially recognized by the CARICOM Secretariat as the umbrella veterinary medical association representing veterinary associations in the Caribbean. This recognition came after repeated lobbying and an official presentation by the current CBVMA president at the meeting of Chief Veterinary Officers Guyana.

~ Curtis Padilla, RR, Canada/Caribbean Region
Outstanding Veterinarian Honoured for Contribution to Animal Welfare

The Canadian Federation of Humane Societies (CFHS) recently presented Dr. Carol Morgan, DVM, a British Columbia based Veterinarian, with the 2011 Frederic A. McGrand Award for Excellence in Animal Welfare.

Born and raised in Manitoba, where she developed a deep personal interest in animals, Dr. Morgan attended the Western college of Veterinary Medicine in Saskatoon. After graduation, she pursued mixed animal practice in Ontario, and then companion animal and emergency companion animal practice in British Columbia. Throughout her career, she has demonstrated tremendous service to her profession and to the animals, even those beyond her immediate reach through direct veterinary care.

Dr. Morgan has been an active member of the animal welfare committees of the Canadian Veterinary Medical Association (CVMA), her provincial veterinary association, and the British Columbia SPCA, as well as the Canadian Council on Animal Care and the Society for Veterinary Medical Ethics.


OVC CVMA Award

The 2012 OVC-CVMA was presented to Ms Janessa Wood. The CVMA Award is presented annually to a 3rd year veterinary student at each Canadian Veterinary College. The recipient is selected by his/her classmates on the basis of leadership and achievement in student affairs.


New Officers of Ghana Veterinary Medical Association

At the Annual Meeting of the Ghana Veterinary Medical Association held in March the following were elected as office bearers.

President Dr. Osei- Agyemang Bonsu
Vice President Dr. Boi Kikimoto
Secretary Dr. Meyir Yiryele Ziekah
Treasurer Dr. Alice Attah

Dr. Osei- Agyemang Bonsu holds an MPhil, and MPH degree in Public Health as well as Master of Veterinary Science degree. Previously the Regional Veterinary Officer, Public health in charge of slaughter houses and zoonotic disease control (2001-2004), he is currently the African representative of Genealogical Society of Utah.

Dr. Meyir Yiryele Ziekah is the new CVA Councilor for Ghana. He hails from Lawra in the Upper West Region of Ghana. Dr. Ziekah graduated from Universidad Agraria de La Habana, Cuba, where he obtained a DVM (doctor in veterinary medicine) in 1999. He is currently the Accra Zoo veterinarian with the Wildlife Division of the Forestry Commission.

Mild H5N1 infections in Bangladesh

Bangladesh, which confirmed three more H5N1 avian flu cases this year to bring its total to six, remains the only country in the world with more than one H5N1 case yet no fatalities. An ICEID poster presentation today detailed two of those cases, both in young children who experienced mild forms of the disease in 2011.

All of the children had a history of poultry contact 7 to 10 days before symptom onset. H5N1 viruses isolated from the two patients were of clade 2.2, closely related to viruses circulating in Bangladeshi poultry. The researchers say the details highlight "the importance of surveillance in areas where avian influenza in poultry is endemic, in order to assess the risk of human infection."

~ CIDRAP News, 13 March 2012
ANNOUNCEMENT AND CALL FOR PAPERS FOR THE 30TH TANZANIA VETERINARY ASSOCIATION SCIENTIFIC CONFERENCE TO BE HELD AT AICC, ARUSHA FROM 11TH TO 13TH DECEMBER 2012

The Tanzania Veterinary Association (TVA) will hold its 30th Annual Scientific Conference from the 11th to 13th December 2012 at Arusha International Conference Centre (AICC) in Arusha, Tanzania.

The theme of this year’s conference is: CONTRIBUTION OF THE VETERINARY PROFESSION TO THE IMPROVEMENT OF HUMAN HEALTH

Sub-themes are:
- One health approaches in the control of zoonoses
- Contribution of biomedical research in human and animal health, food inspectorate systems for enhanced food security and safety
- Antimicrobial resistance as a global challenge to the veterinary profession

TVA therefore invites those who wish to present papers during the Conference to submit high quality research papers and/or papers based on field experiences related to the above theme and sub-themes. Abstracts should not exceed 250 words and should include a title of up to 120 characters (including spaces), the authors’ full names and affiliations, and the text body. Full papers that are to appear in the Conference Proceedings typed in double spacing should not exceed 15 pages, excluding figures, tables and references. Abstracts and full papers should be prepared in Microsoft Word format, 12-point font size of Times New Romans in UK English. Posters should be 1.5 m high and 1.2 m wide. It is recommended that the font size for PowerPoint presentation be preferably not less than 26.

Abstract should reach the Chairman of Scientific Committee not later than 15th September 2012 and deadline for submission of full papers is the 15th October 2012.

Submissions in electronic form should be addressed to
Dr Esron Karimuribo, Chairman of the Scientific Committee
E-mail: ekarimu@yahoo.co.uk & karimuribo@suanet.ac.tz

The submissions should be copied to the TVA’s Honorary Secretary email address: <hbudodi@yahoo.com> and for enquiry call Tel: +255 754 384398

Issued by:
Dr Henry Budodi Magwisha (PhD)
Honorary Secretary, Tanzania Veterinary Association (TVA)
West African Veterinary Service Chiefs Meet in Accra

A meeting of chiefs of veterinary services and other stakeholders of Economic Community of West African States (ECOWAS) Member States was held in Accra, Ghana on 2 April 2012 to develop a coordinated regional strategy for addressing animal health diseases towards boosting food self-sufficiency and export of animals and related products by the region.

The six-day meeting was opened by the ECOWAS Commissioner for Agriculture, Environment and Water Resources, Dr. Marc Atouga, who highlighted the importance of the meeting to the realization of the objectives of the ECOWAS Agricultural Policy (ECOWAP), which seeks to engender food self-sufficiency, especially by addressing supply deficiencies.

ECOWAP aims to ensure integrated management of the region's resources and the implementation of common policies to stimulate increased food production through the development of sustainable structures and the building of capacities that will equip the region to compete in international trade in agricultural products.

The Commissioner, who was represented by Dr. Vivian Iwar, Head of livestock development at the ECOWAS Commission, said the objective of the meeting included the development of a coordinated mechanism for surveillance and laboratory procedures for the prevention and control of transboundary health diseases and zoonosis. "We will develop a strategy that will enable us to produce healthy and quality livestock and products for consumption and export," the Commissioner affirmed.

The meeting, which was also attended by livestock producer organisations and resource persons, reviewed the animal health situation in Member States after presentations. Participants also discussed the epi-surveillance and laboratory service situation, and developed a regional reporting system that will input into ECOAGRIS, the regional information system for agriculture in West Africa.

~ www.allafrica.com, 3rd Apr 2012

Activities of the Gambia Veterinary Association

The Gambia Veterinary Association conducted a series of activities related to capacity building for Livestock Technicians, Livestock Owners and Livestock Auxiliaries from three administrative regions of the Gambia. The Association signed a contract with the Regional Project for Sustainable Management of Endemic Ruminant Livestock in West Africa (PROGEBE) which is being implemented in Gambia, Guinea, Mali and Senegal with the aim of preserving and strengthening in a sustainable manner the genetic traits of Endemic Ruminant Livestock notably Ndama Cattle, Djallonke Sheep and West Dwarf Goats; increasing their productivity and exploitation within an enabling physical and institutional environment.

The project is funded by the African Development Bank (AfDB), Global Environment Facility (GEF), the Governments of member countries; and its partners include ITC, UNOPS, ILRI, CIRDES and FAO. It is being implemented by the International Trypanotolerance Centre (ITC) for the AfDB and United Nations Office for Project Services (UNOPS) for UNDP-GEF. The main project partners are ministries and research institutions in charge of livestock in the four member countries: ITC in The Gambia, Agricultural Research Institute of Guinea (IRAG), Institute of Rural Economy (IER) in Mali and Senegalese Agricultural Research Institute (ISRA), ILRI based in Nairobi, Kenya, CIRDES in Burkina Faso and FAO. The Regional Coordination Unit is hosted by ITC in Banjul. In each country, the project operates through a National Coordination Unit, based at Abuko for the Gambia, Conakry for Guinea, Bouguini for Mali and Kolda for Senegal respectively.

The Gambia Veterinary Association (GVA) as a recognized professional body was contracted by the Project for Sustainable Management of Endemic
Group picture of Livestock Technicians and trainers

Livestock technicians and GVA trainers during visit to a herd

Livestock technicians during practical session at holding ground

Group picture of livestock owners during training on animal health, nutrition and housing

Livestock Owners during one of the training sessions on animal nutrition
Ruminant Livestock to implement training programmes for Livestock Technicians, Livestock owners and Auxiliaries from the project sites in the Gambia. Implementation of the training programme was preceded by preparation of the Memorandum of Agreement (MOA) between the GVA and the project which was reviewed and subsequently approved by African Development Bank (AfDB).

Veterinarians and two Animal Nutrition Experts were identified within the members of the GVA. Each of the resource persons was allocated specific topics to serve as a basis for the trainings. Sessions were also held to review the proposed presentations/modules by the resource persons with a view to ensure relevance and quality as specified in the Terms of References (TORs).

Logistics and plans for field visits were further discussed to fully cater for the practical aspects of the training programmes. The training activities were coordinated by the President of the GVA and CVA Councillor.

Training Objectives and Output

The overall objective of the training programme is to build capacity of Livestock Technicians and Auxiliaries to enhance effective delivery of animal production and health care services at the project sites. The training of Livestock Owners is also meant to enhance their knowledge on management with particular emphasis on animal nutrition and sustainable exploitation of feed resources that are available at the project sites and thus improve production.

Six Hundred and Four (604) cattle and small ruminant owners (including 255 women) were trained on animal nutrition, healthcare, management and housing. Similarly, 19 livestock technicians and 19 auxiliaries drawn from the project sites in Lower River, Central and North Bank regions were trained on animal health, nutrition and housing by GVA members during the same period.

Participatory and interactive methods were used to achieve the objectives stated for the training programme. Sessions were held in plenary with discussions and group work. Field visits were also made to cater for the practical aspects of the trainings.

The presentations and topics treated during the training sessions encompassed diseases of Endemic Ruminant Livestock, prevention and control of emerging and re-emerging diseases, clinical diagnosis and treatment of infections, internal and external parasites of Endemic Ruminant Livestock, feeding and management of Cattle and Small Ruminants, ram fattening, handling, storage and quality of commonly used drugs in the field, sample collection methods, Cattle fattening, fabrication of multi-nutrient mineral blocks, utilization, conservation of available feed resources and construction of small ruminant houses.

Some of the recommendations made at the end of the training sessions include organization of regular refresher training for Technicians and Auxiliaries, improved access to veterinary drugs, increase in number of field staff, establishment of better disease control strategies, revamping of field laboratories, revitalization of Livestock Owners Associations, enhance access to credit for livestock owners and traders, development of communication strategies and organization of Livestock shows.

~ Dr. Sulayman Sonko
RR, CVA West African Region

Commemoration of Global Eradication of Rinderpest - The Gambian Chapter

The Food and Agricultural Organisation (FAO) office in The Gambia in collaboration with the Gambia Government and the Gambia Veterinary Association organised a seminar to celebrate the Gambian Chapter of the Global Rinderpest Eradication at Bakau, The Gambia. The objectives of the seminar were to celebrate, share experiences and lessons learned from the Eradication of Rinderpest in The Gambia; map out the way forward to control other epizootics; and sensitize the general public on the role played by FAO and other partners in the Global Eradication of Rinderpest.

The Seminar drew participants from many sectors of the society including Sir Dawda Kairaba Jawara, former president of The Gambia; deputy Minister of Agriculture, Mr Kalifa Kambi; Director General, Regional Directors, and Deputy Directors under the Ministry of Agriculture; Gambia Veterinary Council members, Gambia Veterinary Association members, FAO, EU Charge d’Affaires, Livestock farmers, NGOs and the Press.

Several interesting presentations were delivered by the following people: Mr Sheriffo Bojang (Ministry of
Agriculture), Dr Kebba Daffeh (Animal health and Production Services), Dr Babagana Ahmadi (FAO), Mr G Belzaro (EU Charge d’Affaires), Dr Badara Loun (Gambia Veterinary Association), and Mrs Ada Gaye (Ministry of Agriculture); followed by several contributions from the floor members.

During the opening session, Mr Sheriffo Bojang, Deputy Permanent Secretary of the Ministry of Agriculture delivered the welcoming remarks. Dr Kebba Daffeh, deputy Director of Animal Health and Production Services gave a thorough narrative of the epidemiology, morbidity and mortality of Rinderpest in Africa, and particularly in The Gambia. The control efforts undertaken to eradicate the disease in The Gambia such as mass vaccination campaigns, sero-surveillance activities and projects such as Joint Project 15 (JP15), Pan African Rinderpest Campaign (PARC) and Pan African Programme for the Control of Epizootics (PACE) were highlighted.

Dr Babagana Ahmadi, FAO Country Representative of The Gambia, gave a thorough account on the Global Rinderpest Eradication Program (GREP) of the United Nation's Food and Agriculture Organization. He stated that between 1994 and 2009, through GREP support around 170 countries succeeded in eliminating Rinderpest disease in their countries and acquired OIE certification, thus leading to the declaration of Global Eradication of Rinderpest by 192 member countries of United Nations.

Mr Belzaro buttressed the contributions given by EU through the African Union Interstate Bureau of Animal Resources (AU-IBAR) towards continental projects like PARC and PACE, and further went on to commend FAO, Government of The Gambia, and Gambia Veterinary Council for organizing this seminar.

Dr Badara Loun, President of the Gambia Veterinary Association, registered his gratitude for the involvement of the association in the celebration of this landmark achievement. He further went on to explain how the association came into being and its present activities, whilst noting the role and contributions of the founding fathers like Sir Dawda Kairaba Jawara, Dr Waly N dow and Dr Bakary N Touray for the formation of this association.

The Permanent Secretary of Ministry of Agriculture, speaking on behalf the Deputy Minister of Agriculture, delivered the keynote opening address. She commended the Veterinary Services for a very hard work and dedication that led to the eradication of the disease with
support from regional and international organizations. She
dwelled on all the processes undertaken by the Gambia
to reach to this state of freedom from Rinderpest, and
during her conclusion called on for renewed efforts to
eradicate Pestes des Petits Ruminants (PPR) which
causes high morbidity and mortality in small ruminants.

The following recommendations stood out very
prominently during the discussions:

- More work is needed to prevent re-occurrence of
  Rinderpest disease
- Called for FAO to support the Animal Health and
  Production Services (AHPS) eradicate diseases like
  PPR, African Swine Fever and African Horse Sickness
- AHPS should be restructured to become a full fledge
department
- Having completed the OIE PVS evaluation of the
  veterinary services, the GAP Analysis should be
  undertaken
- Seminars like this should be frequently organised
- An old sticker for cars bearing the PARC project
  logo and an old metallic syringe were handed to
  the FAO rep to the Gambia to keep in the archives
  for posterity

During her closing remarks, Mrs Ada Gaye, reiterated
her Ministry’s desire to create a Department for Veterinary
Services and Dr Kebba Daffehe has been assigned to lead
this process.

~ Dr. Sulayman Sonko
RR, CVA West African Region

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Liver Fluke Infection Could Be Hindering Detection Of Bovine TB

Liver fluke infection in cattle could be hindering the
detection and control of bovine TB, according to researchers at the University of Liverpool, the
Agri-food and Biosciences Institute in Stormont,
and University College Dublin.

Writing in Nature Communications, the researchers describe how they discovered that concurrent infection with *Fasciola hepatica* in
cattle reduces the sensitivity of the single
intradermal comparative cervical tuberculin (SICCI)
skin test used to diagnose bovine TB.

In a study involving over 3000 dairy herds in
England and Wales, they found a significant negative association between exposure to *F*
hepatica and the diagnosis of bovine TB. They also found that calves that were experimentally co-
infected with *Mycobacterium bovis* and *F hepatica*
reacted less strongly to the skin test than those
infected with *M bovis* alone. This, they conclude,
suggests that the efficacy of the bovine TB skin
test is being compromised.

They note that, although the magnitude of the
response to the skin test was reduced in the co-infected
calves, all the animals had responses that would be
considered positive under field conditions, but that
the mean difference in skin thickness was 42 per cent
less than in those infected with *M bovis* alone. 'It is
plausible that a *F hepatica* infection has the effect of
pushing weak SICCI positives into a negative
classification in the field, where interpretation of the
test is not always clear cut' they say.

They also note that *F hepatica* is known to induce an anti-inflammatory state in its host.
'Tests to diagnose bovine TB rely on inflammation
of the skin in response to injected TB proteins,
but if the animal also has liver fluke infection, this
inflammation is suppressed, reducing the detection
of bovine TB; said Diana Williams, one of the lead
authors of the study from the Institute of Infection
and Global Health at Liverpool. 'This means that
cattle infected with both liver fluke and bovine TB
may not be identified by the current bovine TB
surveillance scheme in operation in the UK.'

Matthew Baylis, another member of the research
team from the Institute of Infection and Global
Health, added: 'The potential consequences of
these findings are that infected cattle can continue
transmitting bovine TB to other cattle, to wildlife
reservoirs and, if they are moved from their farm of
origin, to other areas of the country. This may in
part explain the continuing spread of bovine TB
and the failure of the current eradication programme
in the UK.'

~ Vet Record, 26 May 2012
Queen's Birthday Honours

A number of veterinary surgeons were recognised in this year’s Queen’s Birthday Honours list. Chris Gaskell, Principal of the Royal Agricultural College, Cirencester, was awarded a CBE for his contributions to veterinary medicine and agriculture.

Also recognised in the list was animal welfare consultant Sarah Wolfensohn, who was awarded an OBE for services to animal welfare. Brendan McCartan, senior principal veterinary officer with the Department of Agriculture and Rural Development in Northern Ireland, was also awarded an OBE.

Professor Gaskell, who has been principal of the Royal Agricultural College since 2007, was previously dean of the Faculty of Veterinary Science at Liverpool university, where he also served as pro-vice-chancellor. He was a member and then chairman, of Defra's Science Advisory Council from 2002 to 2011, and chairman of the Biotechnology and Biological Sciences Research Council's Sustainable Agriculture Strategy Panel between 2007 and 2011. He served on the RCVS Council from 1995 until 2007, and was chairman of the Committee of the Heads of UK Veterinary Schools from 1997 to 2002. He is currently a member of the Government's Chief Scientific Adviser’s Food Research Partnership, and chaired its Translational Research Sub-Group.

Among others recognised in this year’s birthday honours list was Geoffrey Davies, formerly student administrator and preclinical dean at Bristol veterinary school, who received a British Empire Medal for services to veterinary education.

— Vet Record, 26 May 2012
— Vet Record, 23 Jun 2012

Silk Compound may Render Refrigeration of Some Drugs, Vaccines Unnecessary

A silk-based stabilizer has been shown effective in vivo in allowing some vaccines and antibiotics to be stored at far higher temperatures and for far longer periods of time than those recommended, according to an article published online yesterday in the Proceedings of the National Academy of Sciences.

The National Institutes of Health (NIH)-funded research tested silk films that essentially wrap up live bioactive molecules. The technology was tested on the measles, mumps, rubella (MMR) vaccine, which rapidly loses potency at temperatures above 2 to 8°C; on penicillin, which breaks down within weeks at 25°C and within 24 hours at 37°C; and on tetracycline, which similarly breaks down in solution.

The researchers were able to store the vaccine and the antibiotics for 6 months at up to 60°C without appreciable loss of potency. The NIH said the method raises the possibility of eliminating the need for refrigeration of some drugs and vaccines, which could potentially revolutionize the efficient and widespread distribution of therapeutic agents worldwide.

— EurekAlert News Service, 9 July 2012
New Officers of WSAVA/FECAVA/BSAVA Elected

Two new presidents took up their chains of office at the WSAVA/FECAVA/BSAVA World Congress.

At the BSAVA’s AGM on 15 April, Mark Johnston was elected as the Association’s new President.

Peter Ihrke, of the University of California Davis, succeeded Jolle Kirpensteijn as President of the WSAVA.

New RCVS Officers

Ms Jacqui Molyneux was elected as the new President of the RCVS during the College’s Annual General Meeting on 6 July. She succeeds Jerry Davies, who becomes Vice President, Neil Smith joined the officer team, also as Vice President.

FAO/OIE Global Conference on FMD Control

The Global FMD Control Strategy described in FAO/OIE Global Conference on FMD Control document is not presented as a ‘stand alone activity’, aimed solely at FMD control, but rather as a carrier mechanism to simultaneously progress in other fields, with the strengthening of veterinary systems as the linchpin. To progress with FMDcontrol, strengthening the Veterinary Services (VS) in a sustainable manner will be necessary, and this in turn will create better possibilities to control other priority animal diseases and pursue sensible and cost-effective combinations of activities.

The overall objective of the Global FMD Control Strategy is to contribute to poverty alleviation and improving the livelihoods in developing countries and to protect and further the global and regional trade in animals and animal products.

For further, refer http://www.oie.int/
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Only acknowledge significant intellectual, technical and financial contributions. A short work warrants short acknowledgments.

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Articles of general interest, experiences in treating of clinical cases, country reports, success stories in animal production, using innovative approaches and where possible enhancing the contribution of women and also using sustainable methods are also encouraged.

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Reviews on a specific topic usually are written by invitation. Other authors wishing to submit a review should first enquire of the editor whether the topic is of interest to the Journal. A synopsis of the proposed article often will be requested before the writing of the full version is commenced. Reviews should provide a critical assessment of published works that have contributed to the development or understanding of the chosen topic. The soundness of experimental evidence and the validity of conclusions and recommendations in cited articles should be assessed. Conflicting observations and interpretations should be examined and evaluated.

– Editor, JCVa
CALENDAR OF EVENTS

2012

BVA Congress, Liverpool, UK. 27-29 September

Singapore Veterinary Association (SVA) Annual Congress, Singapore. 2-4 November

Third OIE Global Conference on Animal Welfare, Kuala Lumpur, Malaysia. 6-8 November

27th Biennial Caribbean Veterinary Conference, Port of Spain, Trinidad. 6-9 November

2013

17th FAVA Congress, Taipei, Taiwan. 4-7 January

38th Annual World Small Animal Veterinary Association (WSAVA) Congress, Auckland, New Zealand. 6-9 March

BSAVA World Congress, The ICC/NIA, Birmingham, UK. 4-7 April

AVA Annual Conference, Cairns, Australia. 26-31 May

31st World Veterinary Congress, Prague, Czech Republic. 17-20 September

28th Biennial Caribbean Veterinary Conference, Cayman Islands. (Date to be announced).

CVA Regional Meeting of Australasia/Oceania Region, Fiji. (Date to be announced).

2014

BSAVA World Congress, The ICC/NIA, Birmingham, UK. 3-6 April

CVA Regional Meeting of Asian Region, Colombo, Sri Lanka. (Date to be announced).

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