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CONTENTS

	Page
President's Column	3
General Articles	
Gestation Length And Birth Parameters Of West African Dwarf Does Fed With Different Planes Of Nutrition ~ MO Oyeyemi and DA Adeniji	5
Community- And Road-Kill Rabies Surveillance In Kibwezi, Kenya ~ JG Kamau, WO Ogara, JJ McDermott, PM Kitala	10
Comparative Assessment Of Innate Humoral And Cellular Immunity Of Exotic And Nigerian Indigenous Breeds Of Chickens ~ OA Oladele, BO Emikpe, and O Esan	16
Malasseziosis In Dogs ~ Sajan George and S Yathiraj	23
Targeted Selective Treatment Of Sheep Using The Five Point Check ~ GF Bath, JA Van Wyk and FS Malan	29
Reindeer Round Up In The Falkland Islands ~ Steve Pointing	33
The Vet and the Rabbi ~ Roy Aronson	34
International News	36
CVA News	37
CVA Book and Journal Programme	39
CVA Study Fund	40
Regional News	
Asia	41
Australasia/Oceania	42
Canada Caribbean	46
East, Central and Southern Africa	47
West Africa	49
U.K. Mediterranean	51
Calendar of Events	56



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President's Column



The first six months of this year have been hectic for the CVA in preparation for the 5th Pan Commonwealth Veterinary Conference. In addition, I wish to update you with a summary of some of the activities undertaken during the period and what you expect out of CVA in the very near future.

Following the decision of Commonwealth Heads of Government Meeting (CHOGM) in Port of Spain, Trinidad and Tobago, on 28th November 2009, to admit Rwanda as the 54th member of the Commonwealth, the Rwanda Veterinary Association was admitted as a full member of the CVA.

On behalf of the Executive Committee and members of CVA, I warmly welcome Rwanda to our CVA family and invite them to enjoy the vast opportunities which the CVA has to offer not only to the Rwanda Veterinarians but also to the livestock keepers of Rwanda.

With the admission of Rwanda Veterinary Association, the CVA East Central and Southern African Region of the CVA has thus become the largest of the six regions with a total membership of 11 countries. Once again Welcome, Rwanda Veterinary Association!

The CVA projects are planned and executed to cater to the needs of the people. These projects also serve as models for possible implementation throughout the Commonwealth and beyond. The CVA projects are designed to develop capacity of veterinarians, farmers, especially women farmers and others in the developing countries. For the period 2010-11 two new projects namely "Improving Small Scale Farm Productivity Sustainably Using Natural Farming Methods in East and Central Africa to include Zambia and Tanzania" and "Poverty Alleviation of Women Buffalo Dairy Farmers of the Indian sub-continent to include Sri Lanka, Bangladesh and India". These projects are in addition to the two ongoing projects viz., "Poverty Alleviation of Women Poultry Farmers of the Indian sub-continent to include Pakistan and India" and "A Rural Community Rabies Project to Demonstrate the Effectiveness of Combined and Coordinated Medical and Veterinary Intervention of Rabies Control in West Africa (Ghana and Nigeria) and in ECS Africa (Tanzania and Uganda)" which are nearing completion.

Continuing education and professional development is now a high priority of the CVA. A Working Group is now in the process of being established in order to develop a CPD plan. This will be discussed at the next Officers meeting in London in September and implemented in a phased manner in the six regions.

PRESIDENT'S COLUMN

The Book and Journal Programme of the CVA in addition to supporting the Chittagong Veterinary University library, has donated many books and journals to the newly opened Veterinary Faculty of the Kwame Nkrumah University of Science and Technology in Kumasi, Ghana. Please remember that "Your book on the shelf" can help a needy rural Veterinarian or a school in a developing country which needs it. Please donate to CVA Book and Journal Programme and help expand the Programme.

As the CVA Officers meet in London in September, the main agenda of discussion will be the organization of 5th Pan Commonwealth Veterinary Conference in Accra, Ghana next year. This event has now become more significant as this will be the first international Veterinary conference to be held during the Year of the Veterinarian - 2011. The 5th Pan Commonwealth Veterinary Conference (PCVC5) is scheduled for Accra, Ghana from 20th to 25th of March 2011

Please Get Ready and Join the CVA in celebrating the Year Of The Veterinarian!!

July 2010

*Richard Sun-Ire
President*

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Gestation Length And Birth Parameters Of West African Dwarf Does Fed With Different Planes Of Nutrition

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Abstract

Objective: This study was conducted at the small ruminant research unit of the Teaching and research farm, University of Ibadan between 1994 and 1996 to assess the effects of planes of nutrition on prolificacy, fertility and gestation length of West African Dwarf Does.

Design: Eighty (80) does were synchronized using Lutalyse® and randomly divided into four groups A, B, C, and D. Each group consisted of 20 does. Group A does were maintained on high concentrate rations while groups B, C were placed on medium and zero supplementation respectively. Group D does were fed kitchen wastes. Parameters studied were prolificacy, type of birth, kidding rate, gestation length and kids' birth weights.

Results: Groups A, B, C, and D had 95%, 80%, 50% and 75% prolificacy respectively. Percentage prolificacy of Group C does was significantly lower than for the other groups. Groups A and B also had more singletons and twins than Group C does. The difference is significant ($P < 0.05$). Out of the 77 kids produced in the study, Group A does had 19(31.67%) kiddings which is significantly higher ($P < 0.05$) than the kiddings in the other groups.

Conclusion: This study therefore establishes that feeding does before service (flushing), during pregnancy (steaming) and post partum with 1.0kg concentrate supplementation will increase reproductive performance without any obstetrical problem(s) due to fetal oversize. The problem of suboptimal reproductive performance due to reduced grazing areas for extensively managed West African Dwarf goats can be ameliorated by supplementing the does diets with kitchen residues.

Key Words: WAD - West African Dwarf.

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Introduction

The West African Dwarf (WAD) goat is one of the two main breeds of goats in Nigeria; the other being the Red Sokoto (Maradi). Its numerical superiority over the Maradi and relative trypanotolerance makes it the breed of choice in enhancing the supply of animal products in the south. The goat also has superior survival capabilities which are due to some specific physiological acclimatization capacity, ability to consume and digest high raw fiber forage and high fertility. However under the traditional management system where a high percentage of WAD goats are raised, the animals depend mostly on household wastes and bush grazing which do not provide adequate levels of nutrition for optimum production. Osuagwu¹ in his report concluded that the potential of the goat which includes attributes such as high reproductive performance, high fertility, year round breeding, high prolificacy and fecundity, early sexual maturity, adaptation to the environment, hardiness and size, depend largely on the availability of adequate feeds and feeding.

This study is aimed at determining acceptable quantity and quality of feeds that will be sufficient to bring about good reproductive performance without any obstetrical problem(s) by comparing feeds and feedings in urban and rural goat production systems.

Materials and Methods

Eighty WAD does of mixed parity and ten bucks were used for this study. The bucks were purchased from a local market in Ibadan. All experimental animals were kept at the Small Ruminant research unit of the teaching and research farm, University of Ibadan. The does were housed at night in groups of ten per pen while the bucks were kept in the same pen. After parturition, pluripara and primipara nursing does were kept separately in pen sizes of 4.70m X 3.14m and 3.14 X 1.19m respectively. Floor litter which consisted of wood shavings on concrete floor was changed fortnightly

GENERAL ARTICLES

during the rainy season and once a month during the dry season. Fresh drinking water was provided ad libitum. The animals were dewormed with Banmith F®, bathed with Asuntol® regularly, vaccinated annually against Pestes de Petite Ruminantes (PPR) and provided with other veterinary attention when required.

The Experiment

The goats were randomly assigned into four nutritional level groups of equal numbers (20) after equalization of weight and labeled A, B, C and D. All the goats were allowed to graze freely in a paddock between 0800h and 1700h on cultivated pasture comprising mainly elephant grass (*Pennisetum purpureum*), guinea grass (*Panicum maximum*), carpet grass (*Axonopus compressus*), giant star grass (*Cynodon plectostachum*), and provided dry cassava (*Manihot esculenta*) peels. Group A does had their feed supplemented with corn based ration at 1kg/head/day. Group B does were fed 0.5kg/head/day of the corn-based concentrate ration while group C does were fed on cassava peels without any supplementation. Group D does were kept on free range or extensive system of management but kept in pens at night and fed kitchen wastes. The kitchen wastes consisted of remnants of vegetables, maize chaff, millet, maize cobs, leaves for wrapping food items and other remnants of food items. These levels of supplementation were maintained for a period of two years.

All the animals were allowed to graze in the day (0800h-1700h). In the evenings (1700), does in groups A and B were served with the supplemented ration. Subsequently, all the animals in all the groups were synchronized using Prostaglandin F2-alpha (Lutalyse®).

Gestation Length and Birth Parameters

The gestation period for each dam was taken as the number of days from the date of service to the day of kidding. The normal gestation period (NGP) in WAD does was taken as 140-146 days (Devendra and Burns, 1983). Does which kidded after and before 140-146 days were classified into the groups of Long Gestation Period (LGP) and Short Gestation Period (SGP) respectively. The data of 77 WAD kids delivered between 1994 and 1996 were analyzed for the effect of nutrition on gestation length and birth weight of kids.

The kids were weighed within 12 hours after birth using a suspension spring balance (Salter Model, 352, England) and kid viability to stand and suckle were observed and noted.

Statistical Analysis of Data

Data were subjected to statistical analyses using Analysis of Variance and Student 't' test.

Results

Prolificacy and Fertility of the Dams

A total of 60 (75%) of the 80 dams kidded and produced 77 kids during the study (Table 1). Successful pregnancies were recorded in 19 (95%) of the does in group A (heavy supplementation); in 16 (80%) of does in group B (medium supplementation); in 10 (50%) of the does in group C (no supplementation) and group D raised on kitchen wastes in 15 (75%) of the does.

Forty-four (73.33%) of all the does that kidded produced single kids, 15 (25%) gave birth to twins and 1 (1.67%) had triplets. The only triplet in the study was observed in group A. Six (30%) of the does in group A had twins, Four (20%) of the does in group B had twins. There were no triplets in groups B, C and D. (Table 2).

Prolificacy and Fertility	Groups				Total
	A	B	C	D	
No. of does	20	20	20	20	80
No. of does that kidded	19	16	10	15	60
% of does that kidded	95	80	50	75	75

Kidding Rate

Group a does with heavy or highest supplementation produced 27(35.06%) of the total kids from 19 parturitions. Group B does were placed on medium or moderate supplementation and produced 20 (25.77%) of the total kids

	A	B	C	D	Total
Singletons	12 (12)	12 (12)	7 (7)	13 (13)	44 (44)
Twins	12 (4)	8 (4)	4 (3)	4 (2)	30 (15)
Triplet	3 (1)	0 (0)	0 (0)	0 (0)	3 (1)
Sub total	27 (19)	20 (16)	13 (10)	17 (15)	77 (60)
No. of total kids per group %	27 (35.01)	20 (25.97)	13 (16.88)	17 (21.08)	77 (100)
No. of kidding per group %	19 (31.67)	16 (26.67)	10 (16.68)	15 (25.0)	60 (100)

from 15 parturitions. Group C does produced 13 (16.85%) of all the kids in 10 parturitions, while group D does placed on kitchen wastes produced 17 (22.08%) of all the kids from 15 parturitions.

Effect of Nutrition on Gestation Periods

The gestation periods recorded in this study varied between 136 and 156 days (mean=146±10 days). Fourteen (14) i.e. 23.33% of the does that kidded had normal gestation period (NGP), thirty-two (32) i.e. 53.43% had short gestation period (SGP) while the remaining fourteen (14) i.e. 23.33% had long gestation period (LGP). Whereas 64.71% of the does in group A had SGP, only 50% of the does in both groups Band C had SGP and 47.06% in group D. The occurrence of LGP was higher in groups B and C than in groups A and D (Table 3).

Effect of Nutrition on Birth Weight

The birth weights of the kids varied from 0.53kg to 1.90 kg (mean=1.22±0.28). The singletons had the heaviest average birth weights of 1.40±0.22kg followed by the twins

with 1.25±0.11kg and finally triplets with 0.53±0.03kg. The average birth weights of kids of does in group A, which received high nutritional supplementation (1.45±0.23kg) differed significantly (P<0.05) from those of groups B (1.26±0.22kg) and group C (1.22±0.25kg) but not from that of group D (1.45±0.24kg) does (Table 4).

Discussion

Nutrition and Prolificacy

A higher number of successful kidding was recorded in group A with high nutritional supplementation and group D raised on kitchen wastes. These findings are similar to those of Awotwi and Fynn (Awotwi and Fynn, 1992) who reported that goats on free range or on ‘backyard farms’ seemed to compete favorably with high supplemented groups of animals raised intensively. These findings are also in agreement with reports of Osuagwuh and Akpokodje (1986), Osuagwuh (1992), Akusu (1994) and Oyeyemi et al., (2001) that supplementation in the feed of WAD goats has a beneficial effect on vital reproduction statistics. Group B had 80% of all the does kidding while group C had 50%. This is

Table 3: Effect of Nutrition on Gestation Period

Gestation Period (Days)	Groups				Total
	A	B	C	D	
Short Gestation Period (SGP) <140	11 (47.91%)	8 (50.0%)	5 (50.0%)	8 (47.06%)	32 (53.34%)
Normal Gestation Period (NGP) 140-144	3 (17.65%)	3 (18.75%)	2 (20.0%)	4 (35.27%)	14 (23.33%)
Long Gestation Period (LGP) >144	3 (17.65%)	3 (17.65%)	3 (30.0%)	3 (35.27%)	14 (23.33%)
Total	17 (100%)	14 (100%)	10 (100%)	17 (100%)	40 (100%)

Table 4: Effect of Nutrition on Birth weights

Birth weights (kg)	Groups				Total
	A	B	C	D	
Singletons	1.50 ± 0.06 ^a	1.30 ± 0.05 ^b	1.20 ± 0.10 ^c	1.40 ± 0.22 ^a	1.40 ± 0.22
Twins	1.30 ± 0.09	1.24 ± 0.09	1.08 ± 0.03	1.40 ± 0.11	1.25 ± 0.05
Triplets	0.53 ± 0.03	0	0	0	0.53 ± 0.03
Mean total birthweight	1.45 ± 0.23^a	1.26 ± 0.22^b	1.12 ± 0.15^c	1.45 ± 0.24^a	1.35 ± 0.17

a, b, c - figures with different superscripts are significantly different.

*B - Group raised on medium feed supplementation
 C - Group raised on zero feed supplementation
 D - Group raised on kitchen wastes*

significantly lower ($P<0.05$) when compared with 95% and 75% prolificacy in groups A and D. There is a significant decrease ($P<0.05$) in prolificacy and fertility in relation to the decrease in the amount of feed supplied. This is meaningful because animals fed on good rations both quantitatively and qualitatively will come on estrus and cycle normally (Datta et al., 1963; Berhanu et al., 1994). Does in group D, where the animals had a wide range of area to graze competed favorably with those of group A except in the kid viability and ability to suckle post partum.

Nutrition and Type of Birth

Group A does with higher nutritional supplementation produced heavier kids than those with poor nutrition. This agrees with previous studies (Akusu, 1987; Oyenike, 1997; Oyeyemi et al., 2001; Ososanya, 2007). Does in groups A and B had more singletons and twins than does in group C. This difference is significant. ($P<0.05$). This finding is similar to the reports of Alexander (1986) in sheep, Holst et al. (1992) and Oyeyemi et al. (2001) who reported that prolificacy and twinning are to a large extent dependent on quality and quantity of feed available. Akusu (1994) also highlighted the importance of concentrate supplementation as causing increased duration of estrus and improved kid birthweight. Although group D does had more singletons than those in group C, the latter had more twins than those on group D. This may be due to the quality of feed available to the different groups. The only triplet in this study was in the heavily supplemented group. It lends support to the fact that good supplementation would support multiple births with good birth weights. This further confirms that forage alone is not adequate for good growth or body weight, which is a prerequisite to good viability, high ovulatory rates and multiple births.

Nutrition and Kidding Rate

Out of the 77 kids produced in this study, 27 (35.07%) kids from 19 (31.67%) kiddings were from group A. This is significantly higher ($P<0.05$) than the percentages of kiddings and the number of kids in the other groups. Group B had 20 (25.97%) kids from 16 (26.67%) kiddings though the number was higher than Group D with 17 (22.08%) kids from 15 (22.08%) kiddings. These increases were not significant ($P<0.05$). These values however are higher than those reported by Akusu (1994). The differences between this report and Akusu (1994) may not be unconnected with the season of the year during which the studies were carried out and the composition of the feeds that were used in each study. The low kidding rate in Group C with low plane of nutrition suggested that most animals under that condition would either not cycle or have silent heat (Akusu, 1994).

Nutrition and Gestation Period

The results of gestation period (the period of development of the young in viviparous animals, from time of fertilization of the ovum till parturition) showed that 32 (53.34%) parturitions were classified under short gestation period (SGP), which was significantly higher ($P<0.05$) than those with normal gestation period (NGP), with 14 (23.33%) of the total kiddings.

Group A does had 19 parturitions out of which SGP was 11 (64.71%). This is significantly higher ($P<0.05$) when compared to 8 (50.0%) in group B, 5 (50.0%) in group C and 8 (47.06%) in group D. This also reflects the importance of feed supplementation, that is, the more the nutritional supplementation, the heavier the conceptus and thus, the shorter the gestation length. This is in agreement with the report of Osuagwuh (1991). The group D does were next in terms of SGP because of wide area of grazing and ability to pick varieties of food items in the range. It is also important to observe that does with high nutritional supplementation have relatively shorter gestation periods than those with low or no supplementation, thereby increasing the possibility of obtaining at least two kiddings within one year.

Nutrition and Birthweights of Kids

The mean birthweights of kids in group A (with heavy supplementation) is $1.45\pm 0.23\text{kg}$. This is significantly higher ($P<0.05$) when compared with the mean birthweights of kids in group B (with medium supplementation) ($1.26\pm 0.22\text{kg}$) and C (no supplementation) ($1.22\pm 0.25\text{kg}$). Values for kids in group D (raised on kitchen wastes) competed favorably with those in group A with an average birthweight of $1.45\pm 0.24\text{kg}$. The fact that does with higher nutritional supplementation status and those raised on kitchen wastes produced heavier kids than those with little or no supplementation is in agreement with previous studies (Zakari, 1981; Osuagwuh and Akpokodje, 1986; Reynolds et al., 1986).

The singletons in group A had a mean birthweight of $1.50\pm 0.06\text{kg}$, and were heavier than those in groups B and C, but lighter in weight than those in group D with a mean birth weight of $1.60\pm 0.22\text{kg}$. The differences between kids in groups A and D may not be unconnected with varieties of feeds available to does in group D. This finding is similar to those of Kirkwood and Aherne (Kirkwood and Aherne, 1985) in pigs and Awotwi and Fynn in sheep (Awotwi and Fynn, 1992). The birthweights in all the groups were higher than $1.11\pm 0.08\text{kg}$ and $1.20\pm 0.08\text{kg}$ reported for pre-weaning breeding and post-weaning breedings by Akusu and Oyeyemi (Akusu and Oyeyemi, 1998). However, the values

in this study were lower than 1.60kg reported by Akusu (1987). The difference may be due to the level of nutritional supplementation, season and the ages of the dams which differed in the various studies under reference.

The mean birthweights of kids of WAD goats in this study was 1.35kg. There was no significant difference between the mean values of groups A and D. Groups A and D were higher than 1.16kg reported for birthweights of WAD kids by Akusu (1987). These values were lower than published reports in European breeds of goats (Epstein and Hertz, 1964) in which birthweights ranged from 2.6-4.0kg. However, the birthweights of the WAD kids were similar to that of the Black Bengal (Moulick and Systgrad, 1979). This might be a reflection of the adult weights of these breeds (Morand-Fehr, 1981). The WAD goat is a small breed with an adult weight of about 18kg (Devendra and Burns, 1983). Earlier, Sada and Vohradsky (1973) had reported the mean birthweight of WAD goats as 1.4kg. Within breed variations have been observed in other breeds of goats (Devendra, 1966).

It can be therefore concluded that providing feed supplements before service, during pregnancy and post partum to breeding female animals will improve their reproductive performance.

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Community- And Road-Kill Rabies Surveillance In Kibwezi, Kenya

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Summary

We investigated the possibility of cross-infection by rabies between domestic animals and wild mammalian carnivores at a wild-domestic animal interface. The area was known to have a domestic-dog rabies but the involvement of wildlife was unknown. Four sublocations within a transect of approximately 20 km along the Nairobi-Mombasa highway were selected as the study area. A total of 202 households within the area were randomly selected and visited to collect information on wildlife abundance and habits, and for wildlife-domestic dog interactions. Forty of the 202 households were randomly selected for wildlife trapping. An eight-month long community-and road-kill-based rabies surveillance was implemented in the 4 sublocations. The

white-tailed mongoose (*Ischeumia albicauda*), the genet cat (*Genetta genetta*), the common mongoose (*Herpestes* spp), the civet cat (*Viverra civetta*) and the bush squirrel (*Paraxerus* spp), were identified as the most prevalent species of wildlife in the area. Seventy-one percent (143/202) of the households reported having heard or witnessed their dogs fighting with unspecified wild animal species. White-tailed mongooses (11) and genet cats (11) were the species of wild carnivores trapped within the precincts of the households. The domestic dog accounted for 91% (20/22) of the rabies positive animal brain specimens collected in the community-based rabies surveillance. Only 6.2% (5/81) of the specimens from road-kills were positive for rabies including a domestic cat, a goat, a common mongoose (*Herpestes* spp), a genet

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cat, and an unidentified wildlife species.

This study has revealed that small wild carnivores are frequent in Kibwezi and interact with dogs. Dogs are currently the main species for transmission of rabies but there is some rabies in wildlife. The potential for wildlife to act as a reservoir for rabies as in other areas where dog rabies has been controlled needs further investigation

Keywords: Rabies; Surveillance; Community-based; road-kills; Kenya

1. Introduction

Rabies has been reported in Kenya since 1912 (Hudson, 1944). As in other developing countries, the domestic dog is the most important reservoir. During 1991-1996, 999 rabies cases were confirmed: 523 dogs, 314 other domestic animals, 127 humans, and 35 wild animals (Karugah, 1995). However, it is widely suspected that the officially reported incidence is a gross underestimation of the true rabies incidence in Kenya-- particularly because the main incentive for reporting rabies cases (government-supported diagnosis linked to post-exposure treatment of confirmed exposures) has become ineffective (Kitala et al., 2000).

Major constraints in improving understanding of rabies in wildlife in developing countries (including Kenya) are the lack of data on the populations at risk and effective reporting systems on rabies incidence by species. Disease surveillance in free-ranging wildlife is difficult due to inaccessibility of the animals. Non-traditional or novel methods of data collection have to be used (although it often is difficult to draw conclusions from the data).

In Makueni/Machakos Districts (Kenya), the persistence of rabies despite relatively good control of the disease in the rest of the country has led to a suspicion of wildlife involvement in rabies maintenance. The district is surrounded by wildlife-protected areas and rabies has been diagnosed in wildlife in the district (Kariuki and Ngulo, 1985). During 1983-1992, Makueni/Machakos Districts accounted for 29% (623/2149) of the confirmed animal rabies cases countrywide (Chong, 1993). Although a relatively large, poorly supervised and inadequately vaccinated dog population in the district might be the major cause of rabies persistence (Kitala et al., 2001), the role of wildlife has not been investigated.

The present study was carried out with the following specific objectives: describe prevalence of rabies between domestic animals and local wildlife species; determine the abundance of local wildlife species; and to investigate interaction between wild carnivores and domestic dogs.

Currently rabies is considered as one of the major zoonotic diseases of that impacts lives of both humans and livestock and other domestic animals.

2. Materials and methods

2.1 Study area

The study was conducted in the Kibwezi Division of Makueni District. The division covers an area of approximately 3,400 km² and lies between longitudes 37° 55' and 38° 5' east and between latitudes 0° 20' and 0° 30' south. According to the 1999 national census, Kibwezi Division had a human population density of 84,931 people. The division borders the Chyulu National Reserve to the west, Tsavo West National Park to the south, and Tsavo East National Park to the southeast. Over the last 20 years, new human settlements in the division have been established in previous wildlife areas (Jaetzold and Schmidt, 1983).

2.2 Survey for local perceptions on wildlife

A 20-km transect was selected along the Mombasa-Nairobi highway as the study area. The area has both well established villages and newer ones. Four administrative sublocations within the transect were purposively selected because of their proximity to the Mombasa-Nairobi highway for household survey of wildlife occurrence and habits, wildlife trapping and for community-based surveillance for rabies. In the four selected sublocations, a list of all households (total 1209) was compiled by village elders and 202 households were selected using a random-number table for inclusion in the survey. Questionnaires were designed based on the World Health Organization Guidelines for Dog Rabies Control (WHO, 1987) (with minor modifications). Data were collected by administering the questionnaires via personal interviews of household heads or any other adult relative present. A subsequent visit was made if any of these people were not at home at the time of the first visit. The interviews were conducted in the local language (Kikamba). In addition, schoolboys who usually spend most time with household dogs and are therefore more likely to observe dog-wildlife contacts, were also interviewed. The questionnaires consisted of a list of different wildlife species with their local names (Kikamba). The information sought included the frequency of sighting of the animals, their estimated number, time of day seen, and season of the year when most frequently seen. In addition, respondents were questioned about abnormal behaviour they may have noticed exhibited by the wild animals they saw such as aggression and loss of fear towards humans manifested by animals wandering into homesteads.

2.3. Wildlife trapping

To supplement the information from the household survey, 10 of the survey households in each sublocation were selected randomly using a random number-table for subsequent live trapping of wildlife within their precincts. Cage traps, made according to specifications given by the National Live Trap (Wildlife Restraint Series, 1991) were used. All the traps were 100 x 40 x 40 cm. The traps were set on paths leading to the households for 3 to 4 nights; one trap was used per household. The paths were selected to maximize the trapping of animals that were most likely to contact domestic animals and humans. Pieces of fresh chicken meat were used as baits to lure the animals into the baits. The trapped animals were anaesthetized using ketamine (KetasetR, Fort Dodge, USA) alone or in combination with xylazine (RompunR, Bayer, Leverkusen, Germany). The doses were varied to determine the most suitable regime for each species using guideline reference values given by the Wildlife Restraint Series (1991) (Miscellaneous small mammals, ketamine HCL 2.5 - 5 mg /kg).

2.4. Active-surveillance system

One resident field assistant (rabies worker) for each sublocation was recruited in consultation with community leaders. The assistants received pre-exposure immunization against rabies using a purified vero cell rabies vaccine (Pasteur Merieux, Lyon, France) on days 0, 7 and 28 according to the manufacturer's recommendations. In addition, they were trained in rabies and data collection. With the assistance of the local leaders, public meetings were held in the study area to introduce the rabies workers, increase rabies awareness and explain objectives of the study.

Rabies surveillance was conducted via a community approach in the 4 selected sublocations over an eight-month period between October 1994 and May 1995. The public would report all rabies suspect animals either seen or killed, to the field assistants. A rabies-suspect was any animal showing signs consistent with rabies and any animal that they exposed. The field assistants collected heads of any rabies-suspect animal killed by the public. In addition, the field assistants patrolled the Mombasa-Nairobi highway daily using bicycles between 0600 hours and 0700 hours to collect heads of any animals killed by vehicles over the previous 24 hours. Approximately, a 30 kilometre stretch of the highway was checked daily. In cases where heads were crushed completely, an attempt was made to collect brain or spinal cord material. The collected head specimens from rabies-suspect animals and road-kills were placed in a polythene bag and stored in a freezer at the Kibwezi Divisional Veterinary Office before transportation, in transport kits provided by the WHO, to the

Central Veterinary Laboratory in Kabete, Nairobi, for rabies diagnosis using the fluorescent antibody test (FAT) according to the method described by Kissling (1975); the FAT has a reported sensitivity of 97.1% (Kissling, 1975) and a specificity of 99.9% (Charlton et al., 1986).

3. Results

3.1. Frequency of wildlife sightings

Ten different wild carnivore species were reported to have been sighted. The white-tailed mongoose (*Ischeumia albicauda*), the common mongoose (*Herpestes* spp), the squirrel (*Paraxerus* spp), the genet (*Genetta genetta*), and the civet cat (*Viverra civetta*) were the most common species of wildlife sighted by people in the study area (Table 1). In addition, feral domestic cats (*Felis cati*) were also commonly sighted. Larger carnivores like jackals, hyenas, lions and leopards rarely were sighted--- although there were reports of occasional movements of these animals from the surrounding national parks and reserves onto farms.

3.2. Wildlife with "abnormal" behaviour

A total of 114 (56%) households reported sighting wild animals exhibiting what was perceived as abnormal behavior; 80% of households reported having encountered a white-tailed mongoose showing abnormal behavior. Most of these reports described aggressive behavior towards people. Only 7 (6.7%) of all animals showing abnormal behavior had signs of mania (similar to the furious type of rabies); 3 were white-tailed mongooses.

3.3. Wildlife-dog interactions

Seventy-one percent (143 of 202) of the households reported having heard or witnessed dogs fighting with unspecified wild animal species; 70% reported having heard the fights at least weekly. Many considered the white-tailed mongoose as the most likely wild animal involved. The white-tailed mongoose, other nonspecified mongooses and the genets apparently have adapted to living near houses and prey on domestic chicken. Thus, they are more likely to come into contact with the domestic dog.

3.4. Wildlife trapped

A total of 23 wild carnivores were trapped within the precincts of 21 of the 40 households selected for the exercise. They included 11 white-tailed mongooses, 11 genet cats, and a common mongoose.

3.5. Rabies cases detected by active surveillance

Fifty-seven animal specimens were collected during the

Table 1: Frequency of sighting of wild carnivores by respondents in 202 randomly selected households in Kibwezi Division, Makueni District, Kenya (June 1995).

Species	Frequency of sighting (% of households)				
	Daily	Weekly	Monthly	Yearly	Never
White-tailed mongoose (<i>Ischiomys albicauda</i>)	55	23	14	5	3
Mongoose (<i>Herpestes</i> spp)	83	11	4	1	1
Squirrel (<i>Paraxerus</i> spp)	100	0	0	0	0
Civet (<i>Viverra civetta</i>)	8	35	17	20	20
Genet (<i>Genetta genetta</i>)	18	30	24	10	18
Hyena (unspecified spp)	4	2	2	7	85
Jackal (unspecified spp)	2	2	5	12	79
Lion (<i>Parthera leo</i>)	0	0	2	20	78
Leopard (<i>Parthera pardus</i>)	2	2	5	11	80
Caracal (unspecified spp)	23	42	18	3	14
Wildcat (<i>Felis cati</i>)	66	13	9	1	10

Table 2: Fluorescent antibody test results by species of specimens collected during a community-based active surveillance for rabies in Kibwezi Division, Makueni District, Kenya, October 1994- May 1995

Species	Fluorescent antibody test results		
	Positive	Negative	Total
Domestic			
Dog	20	21	41
Cat	1	3	4
Goat	1	2	3
Wild			
Genet (<i>Genetta genetta</i>)	0	2	2
Mongoose (<i>Herpestes</i> spp)	0	2	2
Bush baby (<i>Galago senegalensis</i>)	0	1	1
Jackal (<i>Mesomelias</i> spp)	0	1	1
Honey badger (<i>Mellivora capensis</i>)	0	1	1
Cane rat (<i>Lophiomys imhausi</i>)	0	1	1
Porcupine (<i>Hystrix galeata</i>)	0	1	1
Total	22	35	57

Of these, forty-one (72%) were from domestic dog (*Canis familiaris*). Domestic cats (*Felis cati*) and goats (*Caprine*) were the only other domestic animal species whose samples were collected. Nine specimens from 7 different wildlife species were collected during the same period representing 16% of the total specimens collected. Twenty-two (39%) of the collected specimens were positive for rabies out of which 91% were from domestic dogs (Table 2). None of the 9 wildlife specimens were positive for rabies.

3.6. Rabies cases detected by road-kill

A total of 185 road-kills were observed but only 81 had sufficient brain material remaining for sampling (Table 3). Five of the 81 (6%) specimens were positive for rabies including 1 cat, 1 goat, 1 mongoose, 1 genet and 1 unidentified wildlife species (Table 3). It was interesting to us that none of the domestic-dog samples collected from the road-kills tested positive for rabies.

4. Discussion

Table 3: Species and fluorescent antibody test results of animal specimens collected from road-kills along the Nairobi-Mombasa highway in Kibwezi Division, Makueni District, Kenya, October 1994-May 1995

Species	No. observed	No. brain specimens collected	Fluorescent antibody test results	
			Positive	Negative
Domestic				
Cat	9	7	1	6
Dog	22	11	0	11
Sheep	3	2	0	2
Goat	4	4	1	3
Wild				
Bush baby (<i>Galago senegalensis</i>)	14	4	0	4
African civet (<i>Viverra civetta</i>)	11	6	0	6
Squirrel (Bush; <i>Paraxerus</i> spp)	12	5	0	5
Wild rodents (unspecified spp)	40	24	0	24
Bat (unspecified spp)	5	2	0	2
Mongoose (<i>Herpestes</i> spp)	12	4	1	3
Hedgehog (<i>Atelerix albiventris</i>)	27	2	0	2
Genet (<i>Genetta genetta</i>)	4	2	1	1
Baboon (<i>Papio anubis</i>)	1	1	0	1
Bushbuck (<i>Tragelaphus</i> spp)	2	1	0	1
Jackal (unspecified spp)	2	1	0	1
Porcupine (<i>Hystrix galeata</i>)	5	0	0	0
Hyrax (rock; <i>Procavia</i> spp)	1	0	0	0
Hare (<i>Lepus</i> spp)	6	1	0	1
Cane rat (<i>Thryonomys</i> spp)	3	3	0	3
Unidentified spp	2	1	1	0
Total	185	81	5	76

Like in other African countries, our study shows that the domestic dog plays a central role in the maintenance and transmission of rabies (Tierkel, 1975; Acha, 1981; Bogel et al., 1982; Fekadu, 1982; WHO, 1992; Randal, 2004). This survey suggests that there are frequent contacts between dogs and smaller wild mammalian carnivores. Mongooses, which prey on domestic chicken are the species most likely to be infected with rabies. Whether the population ecology of these species could allow for the establishment of an independent rabies wildlife reservoir remains unclear. Rabies in wildlife has previously been reported in Kenya (Chong, 1993). The potential role of wildlife in rabies deserves consideration, because in North America and Europe, wildlife rabies predominated after canine rabies was controlled (Acha and Arambulo, 1985). In Southern Africa, independent rabies cycles have been shown to occur in the yellow mongoose (*Cynictis penicillata*) and in the black-backed jackal (*Canis Mesomelas*) in Zimbabwe (Thomson and Meredith, 1992). It was not clear in this study whether the rabies virus isolates

from the mongoose and the genet cat were a spill-over from domestic dogs or had adapted to these wildlife species. Further investigations are required to elucidate this by extensive monoclonal antibody studies on local virus isolates and/or sequence analysis of viral genomes.

We tried to get information from primary-school children (especially boys, who spend the most time with the dogs) with mixed results. Such an information-collection programme depended on the personal interest of at least one teacher in the school, and experience was that many teachers felt the study was an extra burden on an already-busy school schedule. Kitala et al. (2000) have demonstrated the central role young schoolboys could play in dog ecology studies as well in uncovering suspected rabies cases.

This was the first time road-kills have been used for rabies surveillance in Kenya. The results indicate that the wildlife populations in areas of endemic rabies do

get infected. The method can be refined to cover a longer period of time to detect dynamics of rabies infections in wildlife populations. The drawback of the method is the opportunistic nature of sample collection making it difficult to extrapolate the results to the wildlife populations to give reliable indices of disease occurrence.

Although subjective, our questionnaire seemed to offer ideas of the potential for dog-wildlife (or even human-wildlife) contact. We speculate that the wildlife carnivores with greatest potential to act as reservoirs include the white-tailed mongoose (*Ischeumia albicauda*), the common mongoose (*Herpestes* spp), and the genet (*Genetta genetta*).

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Comparative Assessment Of Innate Humoral And Cellular Immunity Of Exotic And Nigerian Indigenous Breeds Of Chickens

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Innate humoral and cellular immunity of the Nigerian indigenous and exotic breeds of chickens were assessed and compared for degree of immunocompetence. Natural antibodies and complement levels of Arbor acres broilers, Nera pullets, Nera cockerels and Nigerian indigenous chickens were assessed using haemolysis-haemagglutination assay. Delayed footpad reaction was also assessed. Results obtained from pullets and cockerels were pooled to constitute the mixed types group.

Natural antibodies and complement titers of indigenous chickens and pullets (7.5 ± 0.62 ; 3.3 ± 0.21 and 7.5 ± 0.75 ; 3.0 ± 0.0 respectively) were significantly higher ($p < 0.05$) than those of cockerels and broilers (5.6 ± 0.88 ; 2.7 ± 0.15 and 4.2 ± 0.17 ; 2.8 ± 0.09 respectively). Titers in the mixed type group (6.6 ± 0.61 ; 2.9 ± 0.07) were lower than those of IC ($p < 0.05$). Delayed footpad reaction showed maximum response at 24 hours post challenge in indigenous chickens and broilers and 48 hours post challenge in pullets, cockerels and mixed type groups with indigenous chickens recording the highest delayed footpad reaction value at peak (1.96 ± 0.13 mm).

The study showed higher levels of natural antibodies and complement as well as faster and more intense delayed type hypersensitivity reaction in indigenous chickens than exotic Nera breed both of which are reared for meat and egg.

Key words: Cellular immunity; exotic chickens;

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humoral immunity; Innate immunity; Nigerian indigenous chickens.

Abbreviations

IC	Indigenous chickens
DFR	Delayed footpad reaction
DTH	Delayed-type hypersensitivity reaction
MT	Mixed type
NAbs	Natural antibodies
IBD	Infectious bursal disease
PEG	Polyethylene glycol

Introduction

The Nigerian indigenous chickens which constitute majority (84%) of chickens reared in Nigeria (FDLPCS, 1992) have been able to thrive for centuries in the harsh tropical environment. They are more adapted to tropical conditions like high environmental temperature and humidity as well as poor nutrition than the introduced exotic breeds which perform sub-optimally in the tropics (Marks et al., 1969) since they were not bred to be reared in the tropics. The indigenous chickens are scavengers making them less competitive with humans for grains; they are self-breeding and are produced very economically by rural dwellers with little or no housing, feeding and veterinary care (Okoye and Aba-Adulugba, 1998). They are however characterized by small body size, slow growth, low egg production and late maturity (Nwosu, 1979; Akinokun, 1990). The Nigerian

indigenous chickens have been alleged to be hardy and more resistant to diseases than exotic breeds (Akinokun, 1990). Aire (1973) observed that the bursa of Fabricius of Nigerian indigenous cockerels attained a greater relative organ to body weight than White Leghorn cockerels. Glick (1955) had earlier reported that birds with bigger bursa of Fabricius have greater resistance to disease. Although the indigenous chickens are susceptible to a number of diseases including avian pox, Newcastle disease, coccidiosis and ectoparasitism (Adene, 1989; Nwosu, 1990), they have thrived well in the face of these epizootics resulting in the speculation that the indigenous chicken is naturally endowed with disease resistant trait (Adene, 1990; Akinokun, 1990). However, this assumption is yet to be proven.

Constitutive innate immunity provides the first-line of protection against invading microbes. Natural antibodies (NAbs) and complement are two interrelated humoral components amongst these defenses (Matson et al., 2005). NAbs serve as recognition molecules capable of opsonizing invading microorganisms and initiating the complement enzyme cascade, which ends in cell lysis. NAbs are unique immunoglobulin molecules because their presence do not require previous exposure to a particular antigen. The interaction of NAbs and complement is an important link between innate and adaptive immunity (Carroll and Prodeus, 1998; Ochsenbein and Zinkernagel, 2000). Complement deficiencies have been associated with a range of infectious and non-infectious diseases in humans (Schur, 1983). On the other hand, cellular immunity can be assessed by the delayed-type hypersensitivity (DTH) which is a hypersensitive response mediated by sensitized TDTH cells that release various cytokines. The response generally takes 2 to 3 days to develop during which time TDTH cells are activated to secrete cytokines which induce localized influx of macrophages and the subsequent release of their lytic enzymes (Kuby, 1994).

An earlier study conducted by Aire and Ojo (1974) reported that Nigerian indigenous cockerels were more resistant to *Salmonella gallinarum* infection than White Leghorn cockerels judged by values of haemoglobin, haematocrit, erythrocyte and leucocyte counts. Oladele et al. (2007a) also observed a higher infectious bursal disease (IBD) virus antibody titer in response to experimental infection in Nigerian indigenous chickens than in exotic breed.

This study was therefore conducted to assess and compare innate humoral and cellular immunity in the Nigerian indigenous and exotic breeds of chickens using haemolysis-haemagglutination assay and delayed-type

hypersensitivity reaction. This is in order to substantiate the assumption that the indigenous chickens are more resistant to diseases than exotic breeds.

Materials and Methods

Experimental chickens

Day-old Arbor acres broilers, Nera pullets and Nera cockerels were purchased from a commercial hatchery in Ibadan, Nigeria while fertile eggs of indigenous chickens were sourced and also hatched in a commercial hatchery. 60 viable chicks each of broilers, pullets, cockerels and indigenous chicks were selected for the experiment and reared in the experimental animal unit of the Department of Veterinary Medicine, University of Ibadan, Nigeria which is between latitude 15°N and 30°S with relative humidity ranging from 50-85%, rainfall is approximately 70 inches per annum and temperatures ranges between 28°C and 34°C.

Brooding was done for the first two weeks of life while commercially prepared chick mash/broiler mash (Livestock feed®) and water were provided as appropriate ad-libitum. Newcastle disease vaccine (Hitcher B-1 strain) was administered intraocularly at day-old, while infectious bursal disease vaccine (IBDV) was administered orally at day 11. Newcastle disease vaccine LaSota strain was administered at 21 day-old. Necessary veterinary attention were given as when due throughout the duration of the experiment.

Assessment of innate humoral immunity

Harvesting of plasma: Twenty broilers and ten each of pullets, cockerels and indigenous chickens at 4 weeks of age were bled into vacutainer tubes containing sodium citrate and kept on ice pending centrifugation. Blood samples were centrifuged at 2,500 revolution per minute (rpm), plasma samples were harvested into well labelled eppendorf tubes and immediately subjected to hemolysis-haemagglutination assay while the remaining samples were frozen for future use.

Positive control immunoglobulin M (IgM): Three adult chickens were injected with 50µl of whole rabbit blood in phosphate buffered solution (PBS) into four (4) different places in the pectoral region. The chickens were bled 90 hours post inoculation, plasma was harvested and pooled. This served as positive control IgM and was frozen for future use.

Hemolysis-haemagglutination assay: This assay was carried out as described by Matson et al. (2005). In 96-well 'U' bottom microtiter plates, 25 µl of plasma samples were pipetted into columns 1 and 2 of a U-bottom microtiter plate. Twenty five µl of 0.1M PBS was pipetted into columns 2-12

GENERAL ARTICLES

using a multichannel pipette. The contents of column 2 wells were serially diluted (1:2) through column 11 while column 12 served as the negative control. This resulted in dilution ranging from 1 to 1:1024. Twenty five μl of a 1% rabbit blood cell suspension was added to all wells; the plates were sealed with parafilm M and covered with a polystyrene plate lid. Positive control plasma was also included. Plates were gently vortexed for 10 seconds and incubated by floating in a water bath at 37°C for 90 minutes. After incubation, the long axis of each plate was tilted to an angle of 45° for 20 minutes at room temperature in order to enhance visualization of agglutination. Agglutination titers i.e last well showing agglutination was noted for each sample. Afterwards, plates were kept at room temperature for additional 70 minutes and observed for haemolysis. The last well showing lytic activity was noted for each sample. Half score between two titers were recorded where the termination of agglutination or lysis was intermediate or ambiguous. Results obtained from the pullets and cockerels were pooled to represent the fifth group in order to best simulate the Nigerian indigenous chickens for a more appropriate comparison.

Assessment of innate cellular immunity

Delayed-type hypersensitivity reaction: Delayed-type hypersensitivity reaction was carried out using the delayed foot pad reaction (DFR) method described by Xhu et al. (1999). Forty chickens from each group were used for this experiment. Each group was further divided into 2 subgroups of 20 chickens each and were reared in separate confinements. Chickens in sub-group A of each group were sensitized at 3 and 4 weeks of age by subcutaneous injection of 0.2 ml of killed *S aureus* (150 $\mu\text{g}/\text{bird}$) diluted 1:1 (vol:vol) with polyethylene glycol (PEG) at the neck region while subgroup B were administered 0.2 ml of PEG only and served as control groups. At 6 weeks of age, both sensitized and control birds of the different groups were injected intradermally at the right footpad with 0.1ml of killed *S aureus* (75 $\mu\text{g}/\text{bird}$) diluted (1:1) with PBS as the eliciting challenge. The left foot pads were injected with 0.1ml of PBS alone. The thickness of both footpads at the site of challenge were measured to the nearest 0.01mm using a

digital Venier caliper at the time of challenge i.e. 0 hour and at 4, 12, 24, 48 and 72 hours post challenge. Difference in thickness of the foot pads between the right and left footpads of each chicken was referred to as DFR. Results obtained from the Nera pullets and cockerels groups were also pooled to represent the fifth (MT) group.

Histopathology: Representative chickens from the different subgroups were euthanized in CO2 chamber, their footpads were excised and fixed in 10% formalin. Tissue sections were cut at 5 μm , stained with haematoxylin-eosin and evaluated by light microscopy.

Statistical Analysis

Comparison of mean DFR values obtained from sensitized and unsensitized subgroups of each group of chickens was made using the Student's t-test while mean DFR values obtained from all sensitized groups and mean agglutination and lysis titers were compared using the Least significant difference (LSD) method of Multiple comparison.

Results

Mean agglutination and lysis titers of broilers, pullets, cockerels, MT and indigenous chickens groups are presented in Table 1. While the pullets and the indigenous chickens had the highest agglutination titers of 7.5 ± 0.75 and 7.5 ± 0.62 respectively, which were significantly higher ($p < 0.05$) than 4.2 ± 0.17 obtained for the broiler group and 5.6 ± 0.88 obtained for the cockerels, the MT group had an agglutination titer of 6.6 ± 0.61 which was significantly higher ($p < 0.05$) than the values obtained for broilers but not significantly higher than that of the cockerels. Also, the highest lysis titer of 3.3 ± 0.21 was obtained for the indigenous chickens group which was significantly higher ($p < 0.05$) than those of broilers, cockerels and MT groups. The amount of complement (lysis) relative to NABs (agglutination) ranged from 40% to 67% in all the groups.

Assessment of DFR in all groups showed higher values in all sensitized sub-groups than in unsensitized control sub-

Chicken Types	Agglutination titer	Lysis titer (\log_{10})	Lysis / Agglutination (%)
Broilers	4.2 ± 0.17^a	2.8 ± 0.09^b	67
Pullets	7.5 ± 0.75^c	3.0 ± 0^a	40
Cockerels	5.6 ± 0.88^b	2.7 ± 0.15^b	48
Mixed Types (MT)	6.6 ± 0.61^{ab}	2.9 ± 0.07^b	44
Indigenous	7.5 ± 0.62^c	3.3 ± 0.21^a	44

** Figures in the same column with different superscript are statistically significantly different ($p < 0.05$)*

groups which were mostly significant ($p < 0.05$). In sensitized broilers, DFR increased from a mean value of 0.06 ± 0.01 mm immediately post challenge (pc) to a maximum of 2.45 ± 0.23 mm at 24 hours pc and decreased to 1.48 ± 0.13 mm at 72 hours pc. In pullets and cockerels, DFR increased from 0.3 ± 0.06 mm and 0.3 ± 0.08 mm respectively immediately pc to peaks of 1.66 ± 0.23 mm and 1.47 ± 0.25 mm respectively at 48 hours pc and later decreased to 1.02 ± 0.17 mm and 0.75 ± 0.14 mm respectively at 72 hours pc. The indigenous chickens group showed an increase in DFR from 0.29 ± 0.033 mm immediately pc to a maximum of 1.96 ± 0.13 mm at 24 hours pc decreasing to 0.69 ± 0.1 mm at 72 hours pc. The MT group showed a maximum DFR of 1.55 ± 0.17 mm at 48 hours pc (Figures 1 and 2). DFR value obtained immediately pc for the broilers was significantly lower ($p < 0.05$) than the values from the other four groups. At 4 hours pc DFR value obtained for the cockerels was significantly lower ($p < 0.05$) than those of the broilers, pullets and indigenous group but not that of the mixed types group. At 12 and 24 hours pc, broilers and indigenous chickens had significantly higher ($p < 0.05$) DFR than pullets, cockerels and MT group while at 72 hours pc broilers had significantly higher value than the other four groups.

Sections of the right footpads of sensitized sub-groups particularly the indigenous chickens revealed mild oedema, congested blood vessels as well as marked perivascular infiltration with mononuclear cells which comprised mostly lymphocytes, plasma cells and macrophages. The adipose cushion, dermis and connective tissue layer were also infiltrated. Sections of the left footpads of sensitized chickens and both footpads of unsensitized sub-groups showed moderate to no mononuclear cell infiltration.

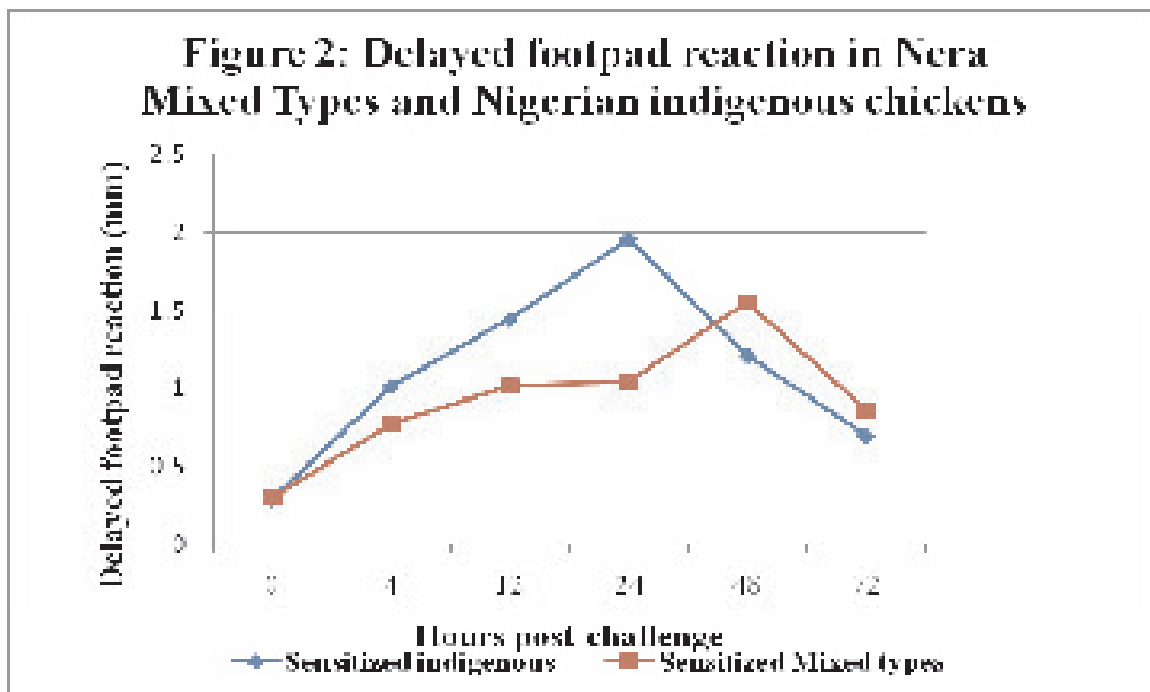
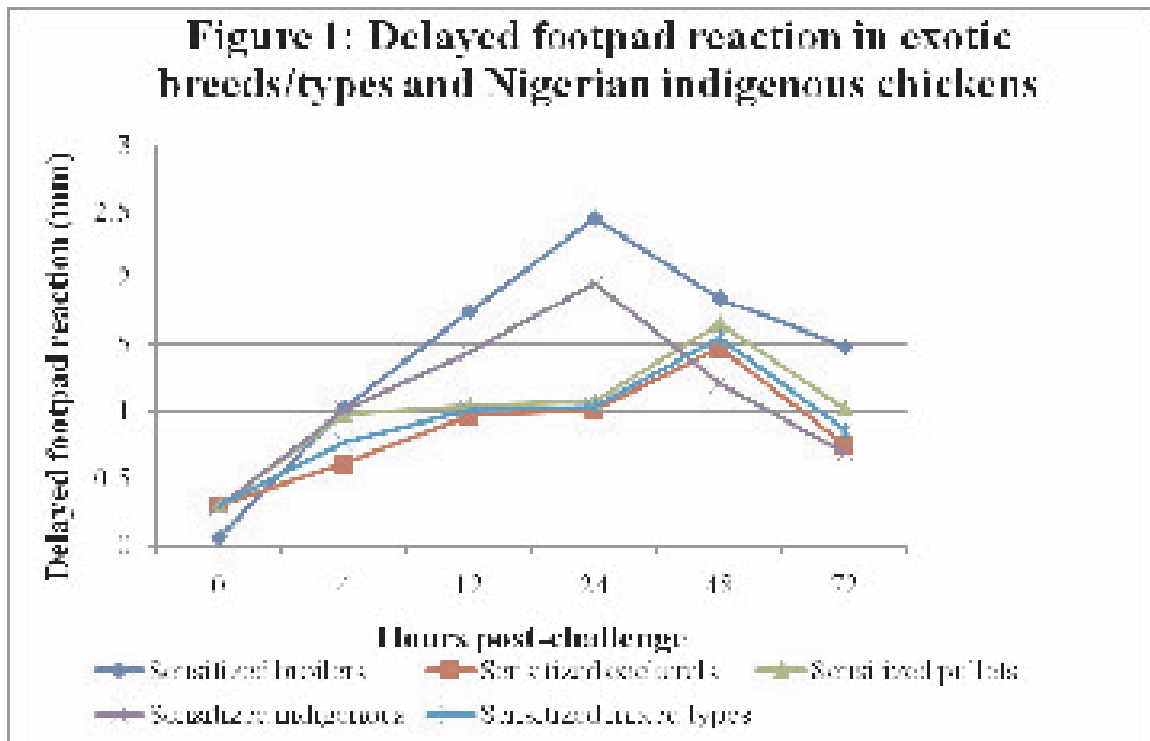
Discussion

Innate humoral and cellular immunity in Arbor acres broilers, Nera pullets and cockerels as well as the Nigerian indigenous chickens were assessed and compared in this study. In hemolysis-haemagglutination assay, agglutination reflects the presence and titer of NAb whereas lysis reflects the interaction of complement and NAb (Matson et al. 2005). Thus, agglutination titers of 7.5 ± 0.75 and 7.5 ± 0.62 and the lysis titers of 3.0 ± 0.0 and 3.3 ± 0.21 obtained for Nera pullets and indigenous chickens respectively which were significantly higher ($p < 0.05$) than the titers obtained for broilers and cockerels shows higher NAb and complement titers in these groups. Although the agglutination titer of 6.6 ± 0.61 obtained for the Nera MT group was not significantly different ($p > 0.05$) from those of pullets and indigenous chickens, the titer is lower and could be significant with regards to immunocompetence. Also,

the lysis titer of 2.9 ± 0.07 obtained for Nera MT group which was significantly lower than those of Nera pullets and indigenous chickens groups shows lower complement level in this group. It was observed that lysis titers were always lower than agglutination titers which indicate that immunoglobulin was not limiting for the measurement of complement levels (Matson et al., 2005) since NAb are responsible for initiating the complement enzyme cascade, which ends in cell lysis (Carroll and Prodeus, 1998). The amount of complement relative to NAb was observed to vary ranging from 40% in pullets to 67% in broilers. Matson et al. (2005) suggested that differences in pattern of immune defenses might reflect differences in life history and ecology of species.

It should be noted that broilers are basically meat type chickens and therefore different from the other groups which are reared for meat and eggs. Thus, the results obtained for broilers cannot be compared with the other groups. A combination of pullets and cockerels best simulates the Nigerian indigenous chicken which has the male and female being reared together for the purpose of meat and egg yield. With regards to assessment of NAb and complement components of innate humoral immunity, higher levels were observed in the Nigerian indigenous chickens than the Nera breed (MT). Earlier workers have observed that chickens artificially selected for high and low primary antibody responses exhibited parallel changes in NAb levels and disease resistance (Pinard et al., 1993; Permentia et al., 2001; 2004). Thus the higher level of IBD virus antibody observed by Oladele et al. (2007a) in Nigerian indigenous chickens than exotic chickens is in concurrence with the higher level of NAb observed in this study. Significantly higher NAb and complement levels observed in the pullets than the cockerels represents sex variation in disease resistance or susceptibility in chickens which requires further investigation.

The results of elicitation of DFR in this study showed maximum response to *S.aureus* antigen at 24 hours pc in broilers and indigenous chickens and 48 hours pc in pullets, cockerels and MT groups. Earlier studies in chickens have shown that maximum response in delayed wattle reaction (Toubler, 1968; Cotter et al., 1987) and delayed-footpad reaction (Oladele et al., 2007b) occurred 24 to 48 hours pc which are in agreement with the findings of this study. Comparison of the responses in indigenous chickens and MT group showed not only an earlier response in the indigenous chickens but also a more intense response as reflected by a higher DWR value of 1.96 ± 0.13 mm. Histopathological examination of footpads showed a more severe reaction in the indigenous chickens compared with the other groups. The marked lymphocytic infiltration at challenge site is one of the



most characteristic features of the DTH reaction (Anderson, 1971; Klessius et al., 1977; Stites, 1994).

The results of this study showed higher levels of NAb and complement as well as a faster and more intense DTH reaction in the Nigerian indigenous chickens than the exotic Nera breed which is an indication of a more efficient innate humoral and cellular immunity in this breed of chickens. This study has, to some extent, substantiated the assumption that the Nigerian indigenous breed is relatively more resistant to diseases. As earlier suggested by Matson et al. (2005) life history and ecology might play important roles in these findings apart from genetics. However, it is necessary to conduct more in-depth studies to further characterize the innate immunity of the Nigerian indigenous chickens for scientific justification of its intensive production for commercial purpose.

Acknowledgement

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International Award For Veterinary Researcher

Dr Dan Tucker, Senior lecture in veterinary public health at Cambridge Veterinary School, was recently named as the winner of the 2009 Dieter Lattice award. The award, worth 20,000 pounds, recognizes the development of alternative to animal testing for veterinary medicines.

Dr Tucker was chosen for his development of physiologically relevant *in vitro* bovine respiratory organ culture system. Working in collaboration with Duncan Maskell,



also of Cambridge Veterinary school, and Josh Slater of the Royal Veterinary College, Dr Tucker has developed a model that allows host-pathogen interactions to be analyzed after either single or mixed infections with *Mannheimia haemolytica* and bovine herpesvirus type 1. The model has replaced the use of animals in some studies of respiratory disease and could be used in developing new vaccines.

Malasseziosis In Dogs

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Yeasts of the genus *Malassezia* are taxonomically classified in the family *Cryptococcaceae* and class *Basidiomycetes*. *Malassezia Pachydermatis* was originally considered as a commensal and has been isolated from the skin of dogs with pruritis (Bond et al, 1996) and ears with otitis externa (Kiss et al, 1997). *Malassezia pachydermatis* is lipophilic, non-mycelial, saprophytic yeast which has an oval to peanut shaped structure with a thick wall and unipolar budding. *M.pachydermatis* demonstrated in dogs, cats and rhinos does not require a lipid enriched medium for growth. The lipid-dependent species include *M.furfur*, found in man, and *M. sympodialis* isolated from cats and man. It can be found on the skin of healthy animals, but can be isolated in much greater number from diseased dogs. This yeast is an opportunistic pathogen that depends on predisposing host factors and immune suppressive mechanisms (Akerstedt and Vollset, 1996) eventually producing skin infection independently or as sequelae to other diseases like hypothyroidism, dermatomycosis, demodicosis etc.

Skin infection caused by *Malassezia pachydermatis* is one of the important conditions, which has gained worldwide attention during 1990s. *Malassezia pachydermatis* is a saprophytic yeast that is common colonizers of the external ear canal, anus, lips and inter-digital skin of healthy dogs. It often causes illness together with other pathogens (e.g. *Staphylococcus intermedius*) and can be dangerous to immuno-compromised humans. The commonest association was that of *Malassezia* with coagulase-positive *Staphylococci* that play an important role in canine seborrheic dermatitis. The frequent occurrence of *Malassezia* in association with *Staphylococci* may be due to the yeast's ability to utilize the B-vitamins produced by the *Staphylococci* (Gabal, 1988). *M. pachydermatis* produces lipases that can help in synthesis of fatty acids and zymogen in yeast cell wall thus activating complement cascade and cutaneous inflammation (Charach, 1997) leading to intense pruritis and clinical signs.

Occurrence

Malassezia is normally a commensal of canine skin and are commonly isolated from the anal sacs, rectum

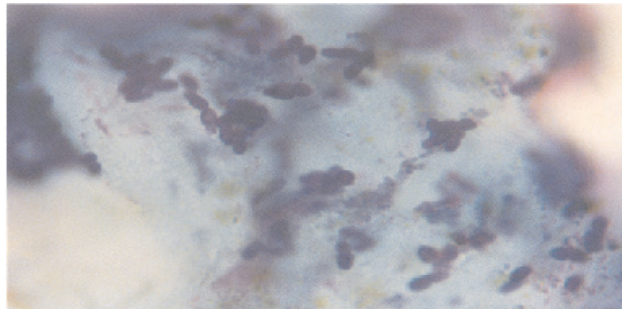
and vagina of healthy dogs and from the ear canal of both normal dogs and dogs with otitis externa (Muller et al, 1989; Mason 1993). *Malassezia* yeasts were also isolated from dog faeces, indicating that they apparently pass through the gastrointestinal tract in unchanged form after having been taken up by licking colonized areas. This also demonstrated the survivability of *Malassezia* yeasts in highly acid milieu in vitro (Raabe et al. 1998).

M. pachydermatis derived antigens may induce an immediate wheal response when intradermally injected in dogs. Type I Hypersensitivity to yeast may contribute to the development of clinical signs in dogs with immediate skin test reactivity, especially in dogs with *Malassezia* otitis externa (YoungSub et al., 2007). A genetic basis for breed predisposition may be due to deficient T-lymphocyte responses to the yeast (Muse, 2000). Predisposing factors present in the host that may facilitate yeast overgrowth include allergic disease, cornification disorders (seborrhea), bacterial skin disease, as well as long-term corticosteroid or antibiotic administration used to treat these disorders. Concurrent disorders like skin hypersensitivity, canine atopy and primary and secondary disorders of keratinisation are frequently identified (Scott and Miller, 1989; Mason, 1993).

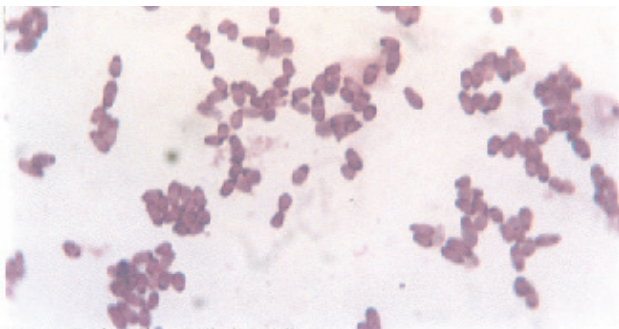
A retrospective study conducted by Carlotti and Laffort Dassot (1996) in 12 cases of *Malassezia* dermatitis in dogs from France showed no age predisposition. However, the condition was most common in 10 dogs of zero to two-year old age group out of 23 cases examined (Larsson et al., 1988). Wagner and Schadler (2000) reported that the colonization with *Malassezia pachydermatis* in healthy puppies occurs immediately after birth. However, the authors have observed that the infection was highest in adult dogs (58.33%) and lowest in puppies (2.08%) among the clinical cases presented in the hospital. Gender, routine vaccination and living conditions were not found to be statistically significant risk factors for *Malassezia*. Analysis of 12 cases of *Malassezia* dermatitis in dogs from France showed no sex predisposition (Carlotti and Laffort Dassot, 1996). The authors report that there was no difference in the occurrence of *Malasseziosis* among the male and female animals.

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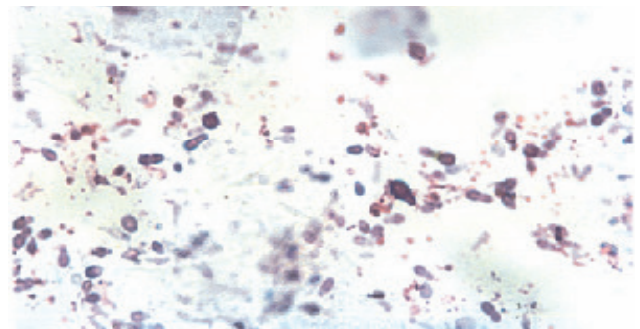
Photo Micrographs Of Malasseziosis Organisms



Organism demonstrated in a clinical case by modified tape strip method



Pure culture



Malassezia pachydermatis

Clinical cases of malasseziosis in dogs



German shepherd dog showing alopecia and greasy debris on the legs



A German Shepherd dog showing signs of otitis and dry scaling and greasy debris in the ears



A German Shepherd dog showing dry waxy alopecia and dry waxy debris

Certain breeds like German Shepherds, Dachshunds, Labradors and Pomeranians are predisposed to this condition. Studies conducted by the authors have shown that the non-descript animals are also equally susceptible for this condition. Other important findings include higher prevalence of the disease in long-haired dogs and those animals kept indoors. This could be due to favorable cutaneous micro-environment as in the long-haired breeds and also due to the lesser exposure of the pets kept indoors to the ultra-Violet rays of sun, which is deleterious to the yeast organisms. *M. Pachydermatis* was identified on 93% human dog owners' demonstrating the risk for zoonotic disease by mechanical carriage on human hands (Morris et al., 2005)

Clinical Signs

Seborrhoeic dermatitis is a clinical term used for symptoms ranging from simple dandruff to severe erythematous, crusty and scaling lesions. The clinical diagnosis is *Seborrhoea sicca*, *Seborrhoea oleosa* or both. The condition is usually secondary to some underlying problem. Canine *Seborrhoeic dermatitis* caused by *Malassezia pachydermatis* was first described by Dufait (1975), a Belgian veterinarian. *Malassezia pachydermatis* seems to stimulate sebaceous secretion and affected dogs show a progressive disease with variations in lipid and keratinous debris explaining the clinical symptoms. Dry, waxy debris increases scaling, whereas greasy debris increases crusting and matting of the coat. Licking and itching cause inflammation and erythema in addition to alopecia (Larsson et al., 1988; Mason and Evans, 1991).

The etiology of otitis externa is complex and the role of *Malassezia* cannot be overlooked. The temperature and humidity in the ear canal are very stable, creating an ideal environment for the yeast and bacteria to grow. Exudate from *Malassezia* associated otitis may be dry, reddish brown or waxy. Several workers have reported that *Pityrosporum canis* plays an important role in the production of otitis externa in dogs (Sharma and Rhoades, 1975; Gedek et al., 1979). The presence of yeasts on examination of ear secretions of otitic dogs has been reported in India by Mathew et al (1970). *Malassezia* organisms were shown to be associated with paronychia and brown staining of the claw in atopic dogs, sometimes resulting in residual pedal pruritus (Griffin, 1996).

Clinical signs associated with *Malassezia* dermatitis are variable but generally consists of erythema, mild to severe pruritus, yellow to grey scale or greasy wax associated with a 'yeasty', rancid offensive odor. The cutaneous lesions were distributed particularly in the facial, cervical and axillary regions, and on the anterior limbs and medial thighs, extending distally to the tarsal area. The lesions are usually

first seen on the abdominal skin, but may spread to the entire abdomen, the axilla, and the inguinal region.

Malassezia organisms differed significantly for various anatomic locations with chin showing the highest number, followed by inguinal and axillary regions (Robert et al., 1996). Studies conducted by the authors have shown that the occurrence of infection is mainly in the ear canal (79.17%). However, the skin lesions were frequently encountered on the axilla and groin regions (66.17%). The most frequently observed primary skin lesions were macule and patch. The secondary skin lesions were mainly alopecia, scale, hyperpigmentation, erythema and hyperkeratosis. Histopathologically, *Malassezia* dermatitis is characterized by inflammation, perivascular infiltration and epidermal and follicular hyperkeratosis with budding yeast cells in the stratum corneum and in the hair follicles (Mason and Evans, 1991).

Diagnosis

Malassezia organisms were identified based on the staining of skin scrapings (Richardson, 1979) and then by the growth on Sabourand's Dextrose Agar (Akerstedt and Vollset, 1996). *Malassezia* organisms were more frequently identified by use of adhesive tape and fungal culturing than by the methods used for cytological examination (Robert et al., 1996). The indispensable diagnostic methods include cytologic techniques (direct impressions, swabbing, skin scrapings, acetate tape stripping), cultures (sterile, contact plates, detergent scrub techniques) and histopathology. Omodo et al., (2003) showed that the adhesive tape strip sampling technique, using the culture method, detected *Malassezia* on the skin of significantly more dogs ($P=0.001$) than the same technique using the stain method and also significantly more than the dry swab sampling technique, using either the culture or stain methods. The authors have showed that tape-strip method as a sensitive and specific tool for detecting yeast population on the skin surface.

Direct impressions can be obtained by gently pressing a clean grease free glass slide over the skin lesions. Acetate tape-strip (preferably a double faced clear acetate tape) is a better choice of demonstration of the organism. Swab cytology is preferred for horizontal ear canal sampling. The smear obtained is then subjected to staining with Giemsa or Gram's methods. The organisms can be easily demonstrated under the oil immersion (1000x) of a compound microscope. The diagnosis is achieved by demonstrating 1 or 2 peanut or foot-print shaped unipolar budding yeast organisms along with squamous epithelial cells per field (Muse, 2000).

The Swabs can be inoculated on to Sabouraud Dextrose

Agar medium with or without antibiotics, and cultured at 37°C for up to 96 hours. Addition of Tween 80 (1%) significantly enhanced the isolation of this yeast from clinical materials. The colonies are creamy in colour, opaque and dull with an entire or slightly lobulated margin. However, culture is generally not recommended as a diagnostic tool in clinical setting. Skin biopsies and histopathology have limited sensitivity and usefulness for *Malassezia* species detection as the organisms mainly reside in the corneocytes, which will be lost during processing resulting in the failure to detect the organism.

M. pachydermatis colonization and infection in some dogs with clinical features of atopic disease and intradermal skin reactivity to other environmental allergens resulting in a wheal and flare reaction to one or more of the dilutions of the *M. pachydermatis* antigens Bond et al., (2002a). Significant increase in the total leukocyte count, phagocytic and ingestion ability of neutrophils, non-significant lower values of metabolic activity of phagocytes, and significant decrease of blastogenic response of lymphocytes were found in the hematological data Hromada et al., (2003).

Therapeutic options

Successful therapy of *Malassezia* revolves around identifying the underlying primary dermatoses. A combination preparation, containing Miconazole, Polymyxin B and Prednisolone was highly effective in controlling the clinical signs of otitis externa and eliminating flora from the affected ears (Gedek et al., 1979). Primary dermatoses might include hypersensitivity disorders (flea / food allergy, atopy, adverse drug reactions), parasitic dermatoses, primary keratinization disorders endocrine imbalances, Vitamin A or Zinc responsive dermatoses (Bruner and Blakemore, 1999). Ketoconazole and other imidazole or triazoles will interfere with synthesis of ergosterol in the fungal cell membrane. Generalized cases are usually treated with Ketoconazole at doses of 5-10 mg/kg once or twice a day orally for up to 30 days. Anorexia, diarrhoea, vomiting, elevated serum liver enzyme activities, icterus and transient lightening of the coat have been associated with its administration. Giving the tablets with food can control occasional vomiting and nausea. Griseofulvin is not effective against *Malassezia* species.

Topical therapy for *Malassezia* is affected by shampoos, dips, and creams or solutions. Widely prescribed is Ketoconazole shampoos, less commonly Selenium sulphide and rarely Chlorhexidine. When used for infectious conditions, topical therapy can decrease microbial counts and reduce surface colonization of microbes and help to prevent relapses. Studies conducted by the authors have shown that Chlorhexidine is superior to the other two

topical preparations in the management of malasseziosis. Chlorhexidine digluconate is a phenol related synthetic biguanidine with bactericidal, viricidal and fungicidal effects. In veterinary dermatology, it is generally used at concentrations between 0.5 to 4%. This compound is known for its good residual activity (Christine, 1998). *Malassezia* organisms derive B-vitamins from *Staphylococcus* (Gabal, 1988). The superiority of Chlorhexidine in the therapeutic management of malasseziosis is attributed to its antibacterial and antifungal activity, which can effectively 'block' the nutrition of yeast organisms.

Mason and Evans (1991) reported that Ketoconazole orally, Selenium sulfide shampoo followed by Povidone iodine rinses, and a Miconazole cream were very effective in resolving the dermatitis. An average dose of 10 to 20 mg/kg or more, should be administered daily for a minimum period of 8 to 12 weeks. *Malassezia pachydermatis* showed the most sensitivity, in decreasing order of efficacy to Ketoconazole, Econazole, Clotrimazole, Miconazole and Nystatin (Kiss et al., 1997).

Comments

Companion animal practice contributes a major field of study in veterinary science. Among the diseases affecting pet animals, dermatological problems carry a significant share. Many of these cases are having a multifactorial etiology and the diagnosis is often misleading due to the overlapping symptoms exhibited. Fungal and yeast infections are long standing ones and are often refractory to antifungals and antibiotics. Further, many of these parenteral treatments are less rewarding as they have deleterious consequences, later in life. Clinico-therapeutic trails using topical preparations for *Malassezia* suggests that Chlorhexidine is superior to Ketoconazole and Selenium sulphide. Nevertheless, the only way to effectively manage *Malassezia* dermatitis is to aggressively treat the causative organisms and address any underlying disorders.

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Farmers lose 300 goats to disease in Kenya

More than 300 goats have died in the last one month in East Pokot District of Kenya following an outbreak of a disease suspected to be Rift Valley Fever.

Kolloa Division residents said that at least 10 farmers in Kolloa and Kaisagat locations had lost half of their stocks and appealed to the government to intervene to avert more deaths.

Pastor Job Rutto of the Africa Inland Church said the symptoms of the disease included coughing, diarrhoea, mucus in the nostrils and foaming in the mouth.

“When slaughtered, the lungs are smaller than usual and dark in colour,” the cleric said.

Pastor Rutto, who is also the representative of livestock keepers from Kolloa at the District Steering Group, complained that even though they had reported the matter to the relevant authorities, no action had been taken to address the plight of the farmers.

“We fear that if the trend continues, we will end up losing all our goats,” he said, adding that the first symptoms were noticed three months ago.

Contacted for comment, East Pokot District Veterinary Officer Joseph Lang’at said he suspected the killer disease to be the contagious caprine pleuropneumonia (CCPP).

~ Daily Nation

Yes, Chicken came before the egg

It’s the age-old question that has puzzled the finest minds for thousands of years-which came first: The chicken or the egg? Now scientists claim to have finally discovered the answer to the conundrum-it’s the chicken which came first.

A team from University of Sheffield and University of Warwick in the UK has found that a protein called ovocleidin(OC-17)is crucial in the formation of eggshells.

It is produced in the pregnant hen’s ovaries so the correct reply to the egg riddle must be that the chicken came first, the scientists say.However,the research does not come up with how the protein producing chicken existed in the first place.

The team used a hi-tech computer, called HECToR to look at the molecular structure of a shell. They discovered that OC-17 acts as a catalyst, kick-starting this conversion of calcium carbonate in the chicken’s body into calcite crystals. It is these that make up the hard shell that houses the yolk and its protective fluids while the chick develops.

Calcite crystals are found in numerous bones and shells but chickens form them quicker than another species, creating six grams (0.2 oz) of shell every 24 hours. Once the shell has formed, the chick expels the egg.

~ Times of India, July 15, 2010

Targeted Selective Treatment Of Sheep Using The Five Point Check ©

*GF Bath, JA Van Wyk and FS Malan
Faculty of Veterinary Science, University of Pretoria
South Africa.*

Although the principle of Target Selective Treatment (TST) has become accepted as a valuable tool in reducing the speed of onset of anthelmintic resistance (AR), and a key part of sustainable and holistic integrated management of parasites (SHIMP), the only practical and proven on-farm method developed to date has been the FAMACHA© system of clinical anaemia evaluation. This by its nature is limited to use in the few haematophagous parasites that cause anaemia, especially *Haemonchus contortus*.

The principle of TST can be extended for use against other important internal parasites, provided that the system developed is practical, economical and reasonably indicative of some form of important parasitism. The candidates for an extended TST system have included nasal discharge (for botfly larvae), ocular mucous membranes for anaemia (for haematophagous worms), submandibular oedema or bottle jaw (for haematophagous worms and conical fluke), body condition score (for worms causing loss of condition) and faecal fouling or dag score (for worms causing diarrhoea). Each of these checks have their limitations and problems but for the present they are the only practical ways of deciding which animals will benefit

from treatment during routine inspection on the farm.

A practical, farmer-friendly guide has been developed to enable users to examine sheep (or goats) rapidly, make effective assessments, identify the likely parasites, identify anthelmintic groups that could be used, use practical systems for temporarily identifying treated animals and to know the limitations of the system. The system has been called the Five Point Check (5o?©) for international, multilingual use and constitutes a further, practical extension of TST. This can make a useful contribution to SHIMP. The new system can be summarised in the slogan “Leave The Best and Treat The Rest” and has an important shift in emphasis from identifying animals that need treatment to identifying those that are unlikely to benefit from treatment. Rather than dosing all animals, we advocate “Look Before You Treat”.

Important notice

The tabulated guidelines on the efficacy of various groups of drugs are generalisations and approximations only. The registered list of efficacies against susceptible strains of

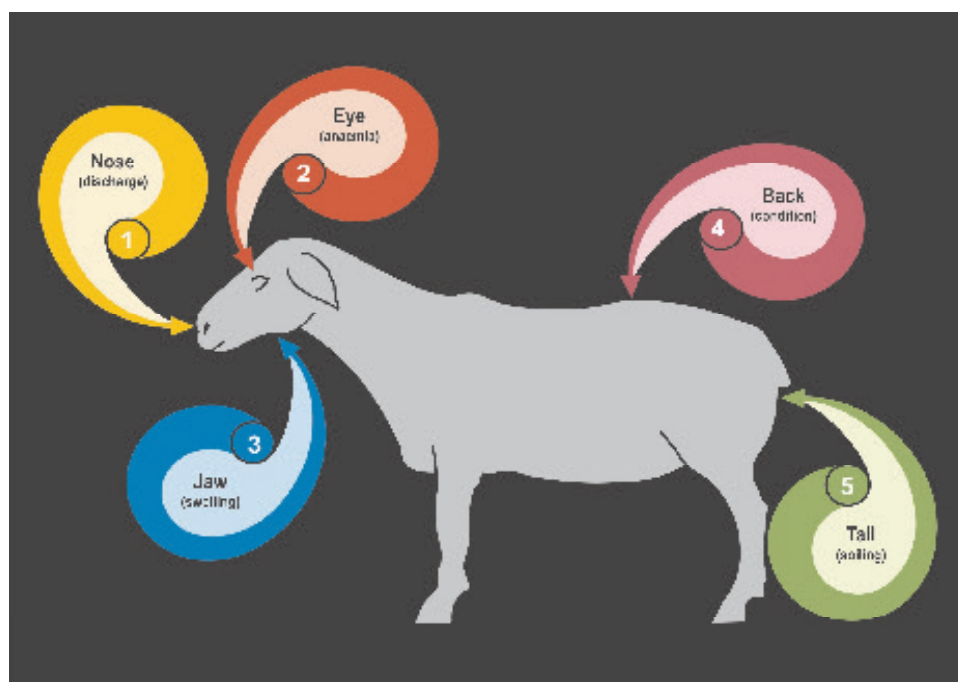


Fig 1: The five Point Check

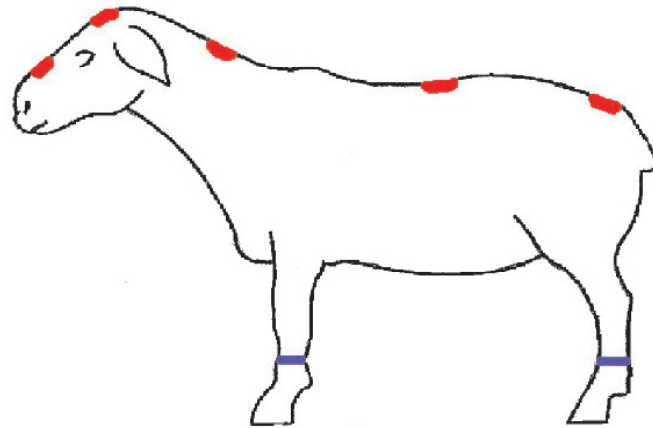


Fig 2: Identification system



The Five Point Check - Observations And Likelihoods

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Check Point	Observation	Possibilities
1. Nose	Discharge 1 - 5	Nasal Botfly Lungworms Pneumonia Other diseases
2. Eye	Anaemia 1 - 5 (FAMACHA [®] card)	Wireworm Liver fluke Hook worms Conical fluke Other diseases
3. Jaw	Soft swelling 1 - 5	Wireworm Liver fluke Hook worms Conical fluke Other worms Other diseases
4. Back	Condition score 1 - 5 (BCS card)	Brown Stomach worm Bankrupt worm Longnecked Bankrupt worm Nodular worm Other worms Other diseases Tapeworms?
5. Tail	Soiling 1 - 5 (Dag score card)	Bankrupt worm Conical fluke Brown Stomach worm Nodular worm Other worms Other diseases
<p>Note that the list of possibilities is largely confined to internal parasites, although the causes may be much more diverse.</p> <p>© Copyright on all material</p>		

Table 1: Probable causes



The Five Point Check - Anthelmintic Efficacy Guide (2009)

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Worms	Groups of Anthelmintic drugs and Group number (South Africa)							
	ⓐ Macrocyclic Lactones	ⓑ Benzimidazoles	ⓒ Imidazoles	ⓓ Salicylanilides	ⓔ Nitrophenols	ⓕ Sulphonamides	ⓖ Organophosphors	ⓗ Isoquinolones
Wireworm	✓	✓	✓	✓	✓	x	✓	x
Hook worms	✓	✓	✓	✓	✓	x	x	x
Brown Stomach worm	✓	✓	✓	x	x	x	x	x
Bankrupt worm	✓	✓	✓	x	x	x	x	x
Longnecked Bankrupt worm	✓	✓	✓	x	x	x	x	x
White Bankrupt worm	(✓)	(✓)	x	x	x	x	x	x
Nodular worm	✓	✓	✓	x	x	x	x	x
Lung worms	✓	✓	(✓)	x	x	x	x	x
Other round worms	✓	✓	✓	x	x	x	x	x
Conical Fluke	x	x	x	(✓)	x	x	x	x
Liver Fluke	x	(✓)	x	✓	✓	✓	x	x
Tapeworms	x	(✓)	x	(✓)	x	x	x	✓
Nasal bots	✓	x	x	✓	✓	x	✓	x

✓ = generally effective (✓) = some efficacy x = ineffective

Note: 1. Resistance to anthelmintics may be found against any of the drug groups, in any of the worm species
 2. Efficacy of an individual anthelmintic must be checked on the label
 3. Use a Faecal Egg Count Reduction Test (FECRT) to assess result

Table 2: Possible treatments

GENERAL ARTICLES

the parasites that appears on labels must be consulted and these are the definitive indicator of the individual product's usefulness. The table is therefore only a guide to assist farmers to identify which drug groups are most likely to be useful given a certain finding, and which are not.

Note also that within a drug group there may be considerable variation in the range of worms covered by various products, and the efficacy of these products against different worms.

Farmers should be wary of buying only on price, because all generic drugs (those with the same chemical name) are not necessarily equally effective. Quality may vary between apparently identical products.

All drug groups are subject to the development of drug resistance in all worms listed, this has to be considered when selecting a drug to be used.

To establish the level of resistance, use the Faecal Egg Count Reduction Test (FECRT).

Drug groups are identified by name but also by number on the container for easy reference.

Farmers are strongly advised to consult with their veterinarian before deciding on the best drug to use in a given situation.

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Climate changes Butterfly schedule

For the first time, a causal link has been established between climate change and the timing of a natural event - the emergence of the common brown butterfly.

Michael Kearney and Natalie Briscoe of the University of Melbourne, Australia, compared temperature records in the city with records of the first brown butterfly to be seen each spring since the 1940s. With each decade, the butterfly emerged 1.6 days earlier and Melbourne heated by 0.14°C on average. Overall, the butterfly now appears 10.4 days before it did in the 1940s (*Biology Letters*, DOI: 10.1098/rsbl.2010.0053).

The pair placed eggs of the butterfly, *Heteronympha merope*, in chambers where temperature could be controlled and found that warmer-than-normal conditions mean the caterpillar pupates earlier and the butterfly emerges sooner.

Kearney and Briscoe then made a mathematical model combining these physiological effects of temperature with climate data. The emergence dates calculated by the model matched the historical records, strongly suggesting that global warming has driven the changes in emergence timing.

“The rise in air temperature links to butterfly emergence in a cause-and-effect pattern,” says Kearney.

~ New Scientist, 27 March 2010

Reindeer Round Up In The Falkland Islands

Steve Pointing

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A small group of us from the Department of Agriculture recently (Jan 2009) attempted to round up a herd of reindeer on West Falkland in order to carry out a census and to perform any animal husbandry or veterinary procedures that might be required.

Background

Reindeer were introduced to the Falkland Islands from South Georgia in 2001. The reason for translocating a few reindeer (approx. 60) from South Georgia was that under a new environmental plan set up for South Georgia all non - native species should be removed within a specified time frame. South Georgia has been awarded the status of a world heritage site because of its spectacular scenery and the importance of its native wildlife species.

On first introduction to the Falklands the reindeer took quite a long time to adapt to their new environment and there were a significant number of deaths in the first few months after their arrival. Subsequently the situation improved and the reindeer herd was moved from the government quarantine station to a farm location on West Falkland. Again this proved to be a bad move and the reindeer did not compete well with sheep on the property and were seriously affected by sheep internal parasites. The reindeer were moved again in late 2006 - to another farm in the SW of West Falkland. By this time there were only 10 hinds and 2 stags remaining.

The Current Situation

During our recent visit to the new reindeer location at Albemarle Station in West Falkland we were able to count the reindeer and observe their general health but we were unsuccessful in our attempt to round them up to carry out hands-on procedures. The number of reindeer has increased from 12 in late 2006 to a current total of about 40 - an increase of more than 300% in 2 years. The good



Herd of reindeer

news is that the reindeer also appeared to be in fantastic condition and breeding well. Their new “camp” consists of 600 hectares of very varied landscape offering a wide range of plant species as well as access to the coast and exposed rocky outcrops with good lichen cover (reindeers really like lichens). There is also plenty of shelter from the very strong winds that frequent these islands.

The Future

Although we weren't fully successful in our attempt to round up the reindeer on this occasion we will make a further attempt later this year. With a bit of advanced planning before our next attempt I think we should stand a very good chance of getting the reindeer into temporarily erected cattle pens where we can handle them directly. I'll update you all when we've had a successful gather.

Football replay helps fight dementia in men

Football can help stimulate the recollections of dementia sufferers. In a study, researchers at Glasgow Caledonian University found that showing football memorabilia to men with the condition stimulated their memories in a “remarkable” way. The study used match photographs and programmes as the basis for discussions. The results showed that the men responded well to the memorabilia and were able to chat to others about their memories of players and games.

~ Deccan Herald, July 17, 2010

The Vet and the Rabbi

Roy Aronson

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I have mentioned that I worked at the Cape Town abattoir for a year after qualifying. I had a number of adventures there and met many interesting people. It is not a great environment for a vet to work in. We dedicate our lives to the health and wellbeing of animals and the reason d'être of an abattoir is to take healthy animals and to render them into meat. A vet working in this environment takes comfort in the fact that he can make an impact in the sense that suffering can be kept to a minimum. My experiences there have shown me that with the checks and balances instituted by the veterinary profession the abattoir is a better today than yesteryear and still not as good as it will be tomorrow.

I have met many colourful and some highly erudite characters working in the abattoir but one who stands out the most in my memory is Rabbi Desmond Maisels.

This is not going to be a piece on whether or not I or the reader agrees with ritual slaughter. That may be a debate for another time. This article is a look at the process by a vet who at one stage in his life worked in an abattoir alongside a rabbi who also worked there

Rabbi Maisels is a “shochet”. This is a person who slaughters specific animals according to the laws of “Kashrut”, the code of dietary laws that prescribe what and how Jewish people eat. These laws are extracted from the Old Testament and observant Jews round the world adhere to them, some more vigorously than others. One needs to understand that there are numerous interpretations as to why these laws exist. The formal orthodox explanation is that God commanded it and that is enough for many religious people. There are some who apply intelligence to the laws and try and justify them based on scientific explanations, of which there really are many. I have had many a long discourse with Rabbi Maisels and he has challenged me in many ways. He has given formal orthodox views regarding Kashrut and I have tried to apply “science” to the laws. There have been surprises for both of us along the way.

The first area that challenges a vet dedicated to the prevention of suffering is the act of ritual slaughter. The laws of Kashrut say the following. The animal must be fully conscious and unblemished at the time of slaughter. The knife used must not be damaged in any way and the

act of slaughter must be swift and efficient and the blade must be drawn rapidly and the animal must be slaughtered with one swift cut.

I as a vet wonder why, in this modern age, we cannot render the animal unconscious using either electricity or a “stun gun” prior to the use of the knife. I have had many passionate discussions with Rabbi Maisels and have heard his side of the story and have observed the act of ritual slaughter as performed by him many times. I have to acknowledge that when done correctly, loss of consciousness is rapid taking a few seconds only and suffering seems to be kept to an absolute minimum. The area of concern for me is how the animals are restrained prior to slaughter. There is no really nice way but provided the restraint is done rapidly, once again suffering is kept to a minimum.

I want to now impart some of the information given to me by Rabbi Maisels. It allows one to glimpse at the past and gives one an understanding of some of the background associated with these laws.

The animal had to be fully conscious and healthy at the time of slaughter. This prevented inhumane handling of the animals prior to slaughter. A fully conscious healthy animal would not have been manhandled. It would not have been hit and no-one was allowed to try and render it unconscious by clubbing it or in any way harming it. Oddly enough, this ensured that it was humanely treated prior to slaughter, a view absolutely shared by my profession. Our methods may differ but the intent is the same, curious. The laws pertaining to the actual act of slaughter also ensure that this is performed in the most humane way. The specifications that the blade must not be in any way damaged and it must be maximally sharp ensure that the slaughter knife is functioning at maximum efficiency. The specification that the cut must be one rapid cut also ensures rapid loss of consciousness so once again, in an odd way the laws of Kashrut coincide with the ethics and values applied by my profession when it comes to slaughter, still more curious.

How about the fact that nowadays, in these modern times, there are numerous very effective methods of rendering the animal unconscious prior to slaughter? Surely

it is more humane to slaughter an unconscious animal. Well, the rabbinical view is that if the process is performed successfully by a competent qualified shochet then the act of slaughter is as rapid and loss of consciousness is as quick compared to the use of the modern methods. Also, remember that a method is only as good as the operator. A “captive bolt” or an electric stunning apparatus or any other so called humane slaughter method is only as good as the operator and often these people are not as well trained as they could be. Their compassion for animals may also be suspect. Rabbis who are trained to slaughter undergo an extensive apprenticeship and have to pass practical as well as theoretical exams so that one thing can be assured, the shochet is well trained. The Jewish religion has as one of its core values compassion and the ethical treatment of animals so the Rabbi has a number of things going for him. He is highly trained and skilled at his job ensuring efficiency and he is obliged by his religious training to have compassion for the animals he is dispatching. These two factors ensure ethical and humane treatment.

There are currently many scientific dissertations on ritual slaughter. Many of these researchers say that an animal that has its throat cut whilst conscious feels pain for up to a minute. If this is true then I for one do have a problem with ritual slaughter of a conscious animal.

The reality however is that we, the human race, are

comprised of many different people with many different persuasions. The various countries we all find ourselves living in have constitutions that mostly enshrine the freedom of the individual. These constitutions also mostly guarantee religious freedom and observation. This may ensure that those who wish to practice ritual slaughter within their communities do so because the laws of their country allow them to.

Can we the human race all turn into vegetarians? I doubt it. I have asked myself many times “what can I do in my small capacity to help?”

My answer is to promote the **ethical treatment of animals**. Those destined for slaughter **must** be ethically treated and handled from the time of their birth till the time of their death. I believe that the definition of **ethical** should be our work for the future. We know instinctively what this means but we need a set of laws that transcend international borders and an agreement to apply them across the board. Until then ritual slaughter probably will remain in place.

Veterinary Relief In Haiti

An animal welfare relief team arrived in Haiti on January 23, 2010 to help treat and deal with animals affected by the earthquake there on 12 January 2010.

The team was responding to an official request for assistance from the government of Haiti, which expressed concern about the potential for outbreaks of both human and animal disease.

The World Society for the Protection of Animals (WSPA) and the International fund for Animal Welfare (IFAW) led the Animal Relief Coalition for Haiti (ARCH), which comprised a range of international animal welfare groups. The ARCH team in Haiti had meetings with government officials and



international agencies, such as the United Nations, to define the most pressing animal - related problems, and to identify options for a wide - ranging, long-term plan for improving the infrastructure for veterinary care, animal vaccination and animal population control .

WSPA says that, of the estimated 500,000 dogs in Haiti, only about 100,000 were vaccinated against rabies last year. Also, the Haitian government did not have sufficient medicines and vaccines to protect pigs, cattle and other livestock against illnesses such as anthrax and cholera.

~ Veterinary Record, January 30, 2010



International News

New mandate for Dr Bernard Vallat as Director General of the OIE

Dr Bernard Vallat has been appointed for a third mandate as Director General of the World Organisation for Animal Health (OIE).



During the 78th Annual General Session of the World Assembly of Delegates of the World Organisation for Animal Health (OIE) held between 23 – 28 May 2010 at Paris, France, the official Delegates of the 176 OIE Member Countries re-elected Dr Bernard Vallat in the first round to the head of the Organisation for the next five years. The election was held with secret ballot using the rule “one country, one vote”.

This is Dr Vallat’s third mandate as Director General of the OIE. During the past 10 years, Dr Vallat led OIE actions in several new issues such as animal welfare, animal production, food safety and the strengthening of the veterinary services. He also gave the OIE a major role to play in the international management of sanitary crisis such as H5N1 avian influenza and the recent H1N1 pandemic 2009 crisis.

“I am very grateful and honoured by the trust Member Countries have granted me” Dr Vallat said after his new election. “Leading the OIE during the last 10 years has been a very challenging and exciting experience. I am very pleased to continue the hard work we already started in collaboration with all my colleagues not only at the OIE Headquarters here in Paris, but also with my colleagues within the Regional and Sub-Regional Representations and all OIE Members and partners”, he added.

During his presentation before the election, Dr Vallat gave some indications as to the strategic objectives of the OIE discussed during the World Assembly for the period 2011-2015, notably the continued strengthening of OIE’s involvement in policy design and governance related to decision -making in animal health and welfare including the quality of veterinary services.

New strategic objectives also include sanitary issues related to climate change such as emerging diseases and interactions between climate and animal production or the protection of bees, and the associated communication policies.

Norbrook Professor

Dr Colette Henry has been appointed as the Norbrook Professor of Business and Enterprise at the Royal Veterinary College (RVC). The newly created position is funded by Norbrook Laboratories and is, the college says, the first formal business and enterprise professorship created in a European veterinary school.



Professor Henry is currently President of the Institute for Small Business and Entrepreneurship and before joining the RVC she was head of the department for business studies, and director of the Centre for Entrepreneurship Research, at Dundalk Institute of Technology.

In her new role, she will head up the RVC’s new Centre for Veterinary and Bioveterinary Enterprise, and work alongside RVC Enterprise, which helps RVC scientists and clinicians to develop the Centre. She will help to develop the college’s teaching by integrating enterprise into science and clinical courses. A research programme will also be created to support innovative business practices in the veterinary sector on a national and international basis.

~ **Veterinary Record, February 6, 2010**

CVA Officers at BVA

Dr Bob McCracken and Dr S Abdul Rahman CVA Officers met Dr. Bill Reilly, President of British Veterinary Association at the BVA House and appraised him about the future activities of the CVA especially the forthcoming PCVC5 in Accra, Ghana. Dr Reilly assured the support of BVA towards PCVC5.



Other Meetings in London

Compassion in World Farming

Dr. S. Abdul Rahman, Secretary CVA attended the meeting of the International Advisory Council of Compassion in World Farming (CIWF) in Godalming, UK from 14th and 15th June, 2010 and has invited CIWF to join the Commonwealth Veterinary Association as Associate Member. Dr. Philip Lymbery, Executive Director of CIWF has expressed keen interest in this.

World Society for Protection of Animals

Dr. Rahman also met Mr. Mike Baker, the Director General of World Society for Protection of Animals (WSPA) on 16th June, 2010. Mr. Baker has recently been appointed as the Director in place of Maj. Gen. Peter Davies. Dr. Rahman and Mr. Baker discussed mutual cooperation between WSPA and CVA in various projects of the CVA. WSPA has been supporting CVA in all its animal welfare programmes and was

a major sponsor of the Animal Welfare session at the last Pan Commonwealth Veterinary Conference in Barbados in 2007 and at the Australasia Oceania regional meeting in Samoa last year. WSPA has also been invited to join the CVA as an Associate Member.

Alliance for Rabies Control

A meeting was held between Mr. Kim Doyle, Director Alliance for Rabies Control (ARC) and Dr. Rahman in London regarding rabies prevention and control in the Commonwealth countries. ARC is partnering with CVA in observing World Rabies Day in various countries through the National Veterinary Associations. A full day Rabies Workshop will also be held during PCVC5 in Accra, next year supported by the ARC.

Mayhew International

A meeting was also held on 16th June 2010 with Mayhew International who are supporting the training of Veterinarians from Afghanistan in India as a joint venture with CVA. Mr. Chris Sainsbury represented Mayhew and Dr. Rahman explained the programme of training which will be held in November this year.

Mayhew international also has shown interest to be an Associate Member of the CVA.

Programme Director represents CVA at the Canadian Veterinary Medication Association Convention

Dr. Bob McCracken, Programme Director CVA visited Calgary, Canada and participated in the CVMA convention. He also attended the CVMA council meeting and gave a presentation on CVA. Details of his visit will be published in the next issue of the journal.

5th Pan Commonwealth Veterinary Conference Organising Committee Meeting

The Secretary of the CVA Dr. Rahman visited Accra, Ghana from 11th to 12th March 2010 and had detailed discussions with the Ghana Veterinary Medical Association. The meeting was attended by Dr. Richard Suu-Ire, President,



CVA Officers with GVMA Executive

L-R: Drs F Danso, Helena Acquah, KB Darkwa, Richard Suu-Ire, Abdul Rahman, KM Aryee and Olatunji Nasir

CVA , Dr Olatunji Nasir, Regional Representative West African Region, K.B. Darkwa, President, GVMA, Dr. K.M. Aryee, Secretary, GVMA, Dr. (Mrs.) Helena Acquah, Treasurer, GVMA, Dr. F. Danso, Dr Hope Otsyina and Dr E.B.N. Koney, Members, Scientific Committee.

During the three days of stay the team visited many hotels, conference centre etc. and finalized the details of the conference in addition to formulating a draft scientific programme. Various committees were also constituted.

A website has been hosted and readers are requested to visit the website www.5PanComVetConf2011.com

CVA Officers visit Commonwealth Foundation

Dr. Bob McCracken, Programme Director CVA, Ms. Helena Cotton, Media & International Affairs Officer BVA and Dr. S. Abdul Rahman, Secretary CVA visited Marlborough House, London and met Ms. Rose Longhurst, Grants Officer - CAs & Capacity Building, Commonwealth Foundation (CF) and had detailed discussions regarding the activities of the CVA. The CF is the principal funding agency for all CVA Projects. Currently two projects namely “Poverty Alleviation of Women Poultry Farmers of the Indian sub-continent to include Pakistan and India” and “A Rural Community Rabies Project to Demonstrate the Effectiveness of Combined and Coordinated Medical and Veterinary Intervention of Rabies Control in West Africa (Ghana, and Nigeria) and in ECS Africa (Tanzania and Uganda)” are being supported by the CF which are nearing completion.



L-R: Dr Rahman, Ms Longhurst, Ms Helena Cotton and Dr Bob McCracken

For the year 2010-11 two new projects namely “Improving Small Scale Farm Productivity Sustainably Using Natural Farming Methods in East and Central Africa to include Zambia and Tanzania” and “Poverty Alleviation

of Women Buffalo Dairy Farmers of the Indian sub-continent to include Sri Lanka, Bangladesh and India” have been approved. In addition, the CF supports the Book and Journal programme of the CVA.

Truth about Cats and Dogs in Australia

There are about 4 million pet dogs in Australia and about 2.4 million pet cats. The RSPCA received 69,383 surrendered dogs and of these 31% were euthanized, 33% reclaimed and 27.7% re-homed.

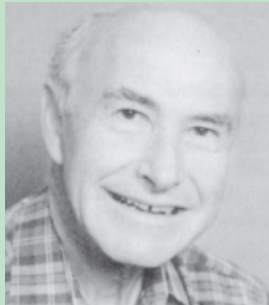
In total about 250,000 unwanted animals are euthanized each year and 60,000 of them in New South Wales.

The Australian pet industry is worth about A\$ 5 billion a year and the sale of pets in Australia is worth A\$1.5 billion.

Annual spending on a pet dog in NSW and ACT is A\$ 2624.

~ Sunday Herald June 6,2010

Book & Journal Programme



Dr. J.B. Derbyshire

The CVA Book Programme is coordinated from the Ontario Veterinary College at the University of Guelph by Dr. Brian Derbyshire, assisted by Mr. Jim Brett, the College Librarian

A depot is also maintained in Wodonga, Vic Australia by Dr. Jeff Cave, Regional Representative, Australia / Oceania

CONTACTS:

Dr. Brian Derbyshire, Coordinator, CVA Book Programme, Department of Pathobiology, Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada N1G 2W1.
E-mail: jderbysh@rogers.com

Dr. Jeff Cave, Department of Primary Industries, 1 McKoy Street Wodonga, Victoria 3689, Australia E-mail: jeff.cave@dpi.vic.gov.au



Dr. Jeff Cave

Book & Journal Programme

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 2009 - June 2010, 118 books were sent from Guelph to six Commonwealth countries as follows: Ghana (30 books), Pakistan (29 books), India (25 books), Nigeria (22 books), Tanzania (7 books) and Trinidad & Tobago (5 books). From Australia, 71 books were sent to 6 countries as follows: East Timor (31 books), Pakistan (13 books), Ghana (10 books), Nigeria (10 books), Malaysia (6 books), and Trinidad & Tobago (1 book).

The current inventory at Guelph comprises close to 500 titles, and the Australian depot, including sub-depots in New Zealand and Western Australia holds close to 200 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 was recently replenished through the cooperation of the Ontario Veterinary Medical Association by their generous collection of donated books at their annual conference.

July 2010

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. 2010. RRs to submit their recommendations before 30th Nov. 2010 to the Secretary, CVA.



Asia

World Veterinary Day

India

Bihar Veterinary Association (BVA) which is a provisional member of Indian Veterinary Association (IVA) celebrated World Veterinary Day (WVD) on 24th of April 2010 by holding an interactive session at BVA building in Patna where technocrats from both human and animal health were invited at a common platform. Prominent physicians like Dr. C.P Thakur (Ex-Central Minister, Ex-MP and Padma Shree Awardee), Dr. R.N Singh and Dr. Hai from the medical faculty in Patna and Dr. H.R Mishra (Ex-Principal, Ranchi Veterinary College), Dr. Alauddin Ahmed (Ex-Vice Chancellor, Sher-E-Kashmir Agriculture University, Jammu & Kashmir; Principal, Bihar Veterinary College), Dr. Dharmendra Sinha (Secretary General, Indian Veterinary Association), Dr. Biresh Prasad Sinha (President, Bihar Veterinary Association) from the veterinary faculty attended the session.

Pakistan

Vets Care Organization (VCO), Pakistan observed World Veterinary Day on 24th April 2010 by holding a seminar at the Veterinary Campus, Lahore. The theme was "One World; One Health".

On the occasion, "a walk" was held in the University campus by the Vice Chancellor Prof. Dr. Muhammad Nawaz in which the staff and students participated. After the walk, the Vice Chancellor Prof. Dr. Muhammad Nawaz inaugurated the seminar. The Vice Chancellor lauded the efforts of Vets Care in arranging various activities related to animal health and welfare.

As a part of the WVD programme, VCO also organized a two-day free treatment camp at the Out Door Hospital of Veterinary School, Lahore. The UVAS is the oldest veterinary institute in Asia (established as a Veterinary School in 1882) and is playing a key role in animal health.

World First Vaccination Gun Cuts Risk Of Self Injection

The Sekurus injector has a radically different design. It features a patented 'self-tenting' needle guard and two-step mechanism that allows the operator to tent the animal's skin and deliver the vaccine in a one-handed action", explains Simcro Director and Manager of Research and Development Rod Walker. "This means the other hand can be kept away from the injection site, virtually eliminating the risk of accidental self-injection".

Traditionally, operators have to use one hand to hold the injector while grasping a fold of the injector animal's skin with the other hand to prepare, or "tent" it for the injection. Every year, farmers and vets suffer needle-stick or self-injection injuries as a consequence of having their hand close to the injection site.

"We believe this is a world-first for vaccination technology and it opens up huge opportunities for Simcro," comments Walker. "This level of operator safety has simply not been available until now and is particularly

significant when treating large animals in difficult situations. The action of Sekurus also ensures the injection is delivered quicker, more precisely, and with less stress to the animal. With Sekurus now available we believe the bar has been raised with regard to the benefits of increased operator safety and animal welfare expected by farmers.

The Sekurus "Self-testing" injector was launched in New Zealand in February alongside Bopriva, from Pfizer Animal Health. Bopriva is Pfizer's new vaccine for the temporary reduction of testosterone in bulls, which reduces aggressive and sexual behaviours, making bulls more easily manageable in larger mob sizes with reduced pasture damage.

~ VetScript, April 2010

Australasia Oceania

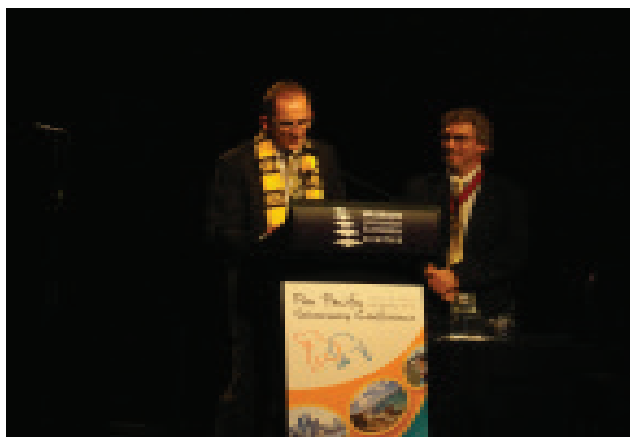
3rd AVA-NZVA Pan Pacific Veterinary Conference, Brisbane, Australia

The 3rd Australian Veterinary Association - New Zealand Veterinary Association Pan Pacific Veterinary Conference was held at the Brisbane Convention and Exhibition Centre from 23-28 May 2010. This conference was attended by around 1000 delegates, which included approximately 150 from New Zealand.

Dr. Peter Thornber, Treasurer, CVA, Dr Helen Beban, CVA Councillor New Zealand, Dr Peter Jolly, Editor NZVJ and CPD Director, NZVA and Dr. Abdul Rahman, were among the participants who attended the conference. Dr. Rahman attended the International Presidents meeting which was organized by AVA to discuss international cooperation

between national associations. The meeting was attended by Dr Larry M Kornegay, President-Elect AVMA, Dr. Bill Reilly, President BVA, Dr. Richard Wild, President NZVA, Dr. Mark Lawrey, President AVA Dr. Shane Ryan, President Singapore Veterinary Association, Dr. G Barry Smyth, Vice President AVA (currently President AVA) and Dr Steve Atkinson, Board Member AVA. Dr. Rahman invited all the Presidents to attend the PCVC5 in Accra. Dr. Wild and Dr. Reilly praised the activities of CVA especially its commitment to help developing countries of Africa and Asia through the more developed countries of the Commonwealth such as Australia, Canada, UK and New Zealand.

At the Gala Dinner



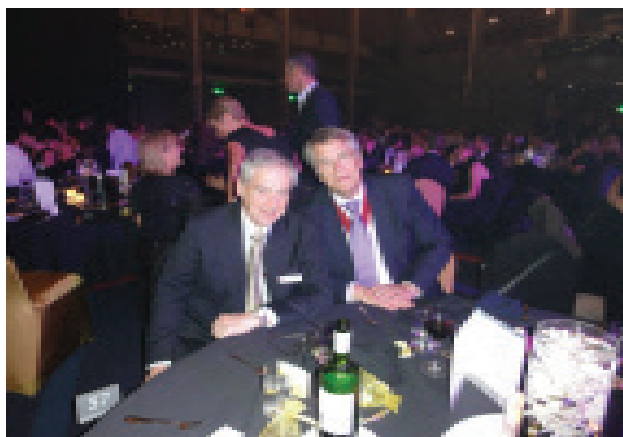
Drs Richard Wild and Mark Lawrie



L-R: Drs Peter Jolly, Helen Beban, Richard Wilde and Abdul Rahman



Drs Peter Thornber, Helen Beban and Peter Jolly



Drs Barry Smyth (left) and Bill Reilly

Doctorate For Professor Heath

For the first time in almost ten years, the University of Sydney has awarded a Doctor of Veterinary Science (*Honoris causa*) to an Australian veterinarian, Professor Trevor Heath.



Prof Heath's career started when he graduated with first class honours from the University of Sydney faculty of Veterinary Science (BVSc, 1960), and he has since gained national and international distinction for his work in animal health research and education.

After a period at Michigan State University as a Fellow in Medical Education, he was appointed Professor and Dean of Veterinary Science at the University of Queensland, a position he held from 1973 until 1980. After completing his term as Dean, Prof Heath held a Chair in Veterinary Anatomy until 1998. He was then appointed an Emeritus Professor of the University of Queensland, and has served as an academic consultant to Kings College, London UK from 1999 until the present.

Dr Carroll honoured

Australian Chief Veterinary Officer (CVO) Andy Carroll has been recognized as one of James Cook University's most outstanding graduates as part of the institution's 40th anniversary celebrations.



Dr. Carroll was one of 14 recipients of the *Outstanding Alumni* award.

New AVA Executive

Dr Barry Smyth has been elected AVA President for 2010-2011. Dr Smyth graduated from the University of Melbourne in 1972. He is a Registered Specialist in Equine Surgery, a Past President of the Equine Veterinarians Australia (EVA) Special Interest Group. He has worked in a number of different veterinary practices in three Australian states, in academia in Australia and overseas and is a qualified company director. He replaces Dr Mark Lawrie. The AVA Board of Directors and Senior Managers are as follows.

2010-2011 Board of Directors

President Dr Barry Smyth, and Directors Drs Steve Atkinson, Michele Cotton, Ben Gardiner, Peter Gibbs, Ron Harris, Mark Lawrie, Julia Nicholls, Pam Short.

AVA Senior Management Team

Chief Executive Officer Mr. Graham Catt, National Corporate Services Manager Mr. John Robb, National Communications Manager Ms. Marcia Balzer, National Veterinary Director Dr Kevin Doyle, National Strategy and Services Manager Dr Deborah Neutze.

New CVA Councillor Singapore

Dr. Lee See Yang has been appointed as the new CVA Councillor of Singapore. Dr Yang graduated with a Bachelor of Veterinary Science (Honours) from the University of Sydney in 2007. Upon graduation, Dr. Lee joined Companion Animal Surgery in Singapore as a Veterinary Surgeon. His special interests include small animal internal medicine, veterinary Chinese herbal medicine and emergency medicine. Prior to his veterinary degree, Dr. Lee also obtained a Bachelor of Business in Business Administration (Distinction) from RMIT and a specialist diploma in Molecular Biotechnology from Ngee Ann Polytechnic. Currently, he is the Honorary Secretary of the Singapore Veterinary Association and is pursuing an IVAS certified course on Veterinary Herbal Medicine.



International Recognition For New Zealand And Australian Animal Welfare Scientists

The World Organisation for Animal Health (OIE) approved the expansion of Massey University Animal Welfare Science and Bioethics Centre in New Zealand to include new partners in may 2009. This reflects the strong existing collaboration between the agencies that is now formalized and internationally recognized.

The centre includes the Animal Welfare Science and Bioethics Centre (Massey), the Agresearch Animal Behaviour and welfare research Centre for Animal Welfare Research Centre (Ruakura), the Animal Welfare Science Centre (Victoria), the Centre for Animal Welfare Ethics (University of Queensland) and the Division of Livestock Industries (CSIRO, Australia).

The application to expand the centre was supported by the Ministry of Agriculture and Forestry New Zealand (MAFNZ) and the Australian Department of Agriculture, Fisheries and Forestry (DAFF).

The inclusion of the Australian and New Zealand Government partners, gives the centre a unique blend of scientific and public policy expertise to influence animal welfare out comes and to assist with global capacity building efforts.

The centre is managed by the Centre Management Committee, which includes members from MAFNZ, DAFF and the five research institutes. The role of Chair in 2009 - 2010 will be provided by New Zealand and this role will alternate between the two government agencies.

The Centre will work with the OIE in the development of Intonation guidelines and standards on Animal Welfare and will provided opportunity for collaboration with similar organizations internationally. It will also work with Animal Welfare experts in other institutions and have a strong connection with the OIE Regional Animal Welfare Strategy, which can be viewed via dote DAFF website at www.daff.gov.au.

The Primary role of the centre, is the provision of expert scientific, bioethical and educational advice for the OIE. The centre has a pool of some 44 internationally recognized professional scientific staff with an annual contribution of between 60 and 70 papers to the scientific literature. Other roles will include the provision of scientific and technical training, the organization of appropriate scientific meetings, and the coordination of scientific and technical studies in collaboration with other organizations and other Animal Welfare experts in Australia and New Zealand.

The OIE International Animal Welfare leadership mandate includes livestock production animals, wild animals, those used in research testing and teaching as well as animals used for work, sport, recreational and display purposes.

Peter Thornber

Manager Australian Animal Welfare Strategy / Communications.

Department of Agriculture, Fisheries and Forestry

~ AVJ, Vol.88 No.4 April 2010

Conserving And Developing Local Live Stock Breeds

A recent livestock survey in Fiji, Niue, Tonga and Samoa has revealed that there is ample genetic diversity found in local pigs and chickens. This rich diversity in animal genetic resources is a significant contribution from the Pacific towards this International Year of Biodiversity.

Data collected from the survey will allow researchers to identify some locally adapted breeds that show specific resistance or tolerance to diseases, limited feed and water, as well as climate change.



Secretariat of the Pacific Community (SPC) is helping Pacific Island countries and territories meet challenges in food security, including livestock and knowledge on the diversity of local livestock is crucial to decision-making.

The aim is to develop, conserve and use local breeds of livestock to enhance food security and livelihoods of Pacific communities.

~ Land Resources News, Vol.6 No.1 April 2010

Pacific Avian and Pandemic Influenza Task Force Meeting in Nadi, Fiji

The Pacific Regional Influenza Preparedness Project [PRIPPP] is a 4 year project which commenced in mid-2006, designed to build capacity of 22 Pacific Island Countries and Territories [PICTs] to deal with 'highly pathogenic avian influenza' [HPAI] and pandemic influenza. It is a unique initiative in that human and animal health components of the Secretariat of the Pacific Community [SPC] work closely together in delivery. PRIPPP is funded jointly by AusAID and NZAID. There are three main areas of intervention:

- Preparedness and broader emergency plans
- Surveillance and response by public and animal health systems
- Regional coordination and project management

The PRIPPP is monitored by the Pacific Avian and Pandemic Influenza Task Force [PAPITaF] which comprises representatives of both human and animal health Ministries in the Pacific. In the case of animal health, representation is from the Pacific Heads of Veterinary and Animal Health



Services [PHOVAPS] of SPC. PRIPPP had its origins in the Pacific Ministers of Health meeting in 2005, convened jointly by the World Health Organisation [WHO] and SPC and strong support was indicated for this decision by the PHOVAPS Meeting held that same year.

The 3rd Meeting of PAPITaF took place in Nadi, Fiji from 25 to 27 May, 2010. This meeting reviewed progress and made recommendations aimed at ensuring project activities are complete by the extended project closure date of December, 2010. Discussions were also undertaken on a possible new project, aimed

at building on the achievements of PRIPPP and addressing emerging needs. The Immediate Past President of CVA, Dr Robin Yarrow has been a member of PAPITaF since its inception. The CVA is most grateful to the SPC for kindly facilitating this very meaningful participation by a member of its Executive Committee. PRIPPP has played an important role in helping to strengthen animal health services in PICTs.

US Profession Tips The Gender Balance And Increases Specialisation

The American Veterinary Medical Association (AVMA) has released its most recent membership data, which reveal that there are now more women than men in the association, for the first time in history. In 2008, men had still outnumbered women, but by 2009 there were 44,802 women members and 43,196 men.

With around 85% of American veterinarians as members, the association's figures are a good indicator for the profession nationally.

Some other professions are seeing similar trends. According to the American Association of Colleges of Pharmacy, women overtook men in the profession in 2008. And about 70% of graduating optometrists are women

according to the American Optometric Association.

Not surprisingly, the AVMA statistics also pointed to an increasing trend for veterinarians to seek board certification as specialists.

There was a 15.5% increase in the number of specialists compared to 2006, and internal medicine specialists increased by 11% in just one year.

Some other professions are seeing similar trends.

~ AVJ, Vol.88 No.4 April 2010

Canada Caribbean

New Dean of Veterinary College at the University of Saskatchewan

Dr. Douglas Freeman has been appointed as the Dean of the Veterinary College at the University of Saskatchewan.



Dr Freeman who began his five year term on 1st March 2010, will become the regional veterinary college's 6th dean in its 45 year history. He replaces Dr. Charles Rhodes, the WCVM's dean since 2002. Dr Rhodes is retiring after 39 years of service with the college.

~ CVJ, Vol.51 February 2010

Globally Recognized Epidemiologist Appointed CFIA Research Chair At UPEI's Atlantic Veterinary College

The University of Prince Edward Island's (UPEI) Atlantic Veterinary College (AVC) is world renowned for its expertise in veterinary epidemiology through its Centre for Veterinary Epidemiological Research. This expertise has been further strengthened by recent appointment of Dr. Javier Sanchez as the Canadian food Inspection Agency (CFIA) Chair in Regulatory Veterinary Epidemiology at the AVC.



Dr. Sanchez received his Doctor of Veterinary Medicine in Argentina in 1992. In 2004, he received his PhD in

epidemiology (the study of health and disease in populations) from UPEI and was awarded the Governor General's Gold Medal for Academic Excellence. From 2003 to 2007, Dr. Sanchez worked as a research associate at the AVC. In 2007, he was appointed as a risk analyst in the Animal Health Risk Assessment Unit of the CFIA.

Dr. Sanchez has authored or coauthored 25 peer-reviewed publications and is internationally recognized as an instructor in epidemiological methodologies, having taught in Canada, New Zealand, Australia, Brazil, Costa Rica, Grenada, and China over past 5 years.

150 year celebrations at Ontario Veterinary College

The Ontario Veterinary College (OVC) will mark the 150th year of its founding in 2012, but the celebration has started already with the first in a 4 year series of symposia, VetMed Evolution: Animal, People and the Environment. The symposium was a success as it attracted a greater than expected audience of academics, veterinarians, and the public with a provocative look at women in the Veterinary profession.



The first in the series, changing Lives: Women in Veterinary Medicine, held on May 28th, covered a wealth of topics such as Women Veterinarians - making history in the 20th Century, Women faculty at OVC: the Early Years, and Wives of Veterinarians - Practice Managers, Caregivers add Community Builders.

Future symposia topics include Changing Cultures: Veterinary Medicine in Literature in 2010, Changing Roles of Animals in Society, the Human-Animal Bond in 2011, and Changing the Globe: International Veterinary Medicine.

Rwanda's Initiative to Fight Poverty by "One Cow per Poor Family" Programme

Recovery is a word you hear a lot in Rwanda. From public service announcements on television to billboards - it's the motto for a place that just 16 years ago was torn apart by genocide. More than one million people were murdered in 1994, as ethnic strife turned neighbour against neighbour in one of the bloodiest civil wars in the world's history. The "one cow per poor family program" (locally known as GIRINKA) is helping a recovery process.



One cow per poor Family (Girinka) programme was inspired by the Rwandan culture and initiated by His Excellency the President of the Republic in 2006. The cabinet meeting of 12th April 2006 approved the program as one of the 2020 vision under Economic Development and poverty Reduction Strategy (EDPRS) and internally displaced persons (IDP) implementation measures. This programme aims at enabling every poor household to own and manage an improved dairy cow which would help the family to better their livelihood through increased milk and meat production and to improve soil fertility of their land for their crops using the available manure. This will not only improve the nutrition, but also increase the earnings of beneficiaries, from milk, milk products, meat and sale of manure.

This programme is implemented in two ways **(i) Donation:** a poor family receives a cow free of charge from the government. When the cow calves, the calf is given to the neighbour who keeps it and gives the next calf to the next neighbour and so on. This procedure is called "heifer in trust scheme" or "credit revolving scheme". The second way is **(ii) Loan:** an average family gets a bank loan

to buy a cow through a guarantee fund managed by the Central Bank of Rwanda but issued by financial institutions that have entered contractual arrangement with the Central Bank on condition that the interest rates would be minimal as compared to commercial rates. It is the responsibility of the average family, to be able to comply with the criteria necessary to receive the cow. For example: being able to construct a cow shed (Kraal) and a field

planted with different pasture species for nutrition purpose.

One cow per poor family programme was a success and other related initiatives have followed. For instance, in Southern Province, Kamonyi District initiated another programme as a process of producing many cows in the community whereby the first owner remains with the calf and the next beneficiary takes the mother and so on. This is much faster than heifer in trust scheme mentioned above because there is a possibility of getting a new calf every year to the benefit of different households. Another initiative is: a cattle owner gives a cow to his neighbour who keeps it for him and when it calves twice the owner gives one calf to the neighbour as recognition for his work to care for his cow.

Elsewhere, well-off cattle keepers give cows to poor neighbours to enable them to own cows for milk, but also to benefit from manure.

Farming and Animals

Rwanda presents a challenging environment for farming, where crop yields per hectare have been declining since the mid-1990s. This is due to the destruction of much

CVA REGIONAL NEWS

of Rwanda's livestock during the genocide, leading to a reduction in manure supply. Access to water is also limited, so farmers are trained in water harvesting to ensure they can care for their animals properly. The approach of providing families with good quality livestock to supply milk, meat and manure has proven so successful that it has been adopted by all the beneficiaries. The aim of 'One Cow per Poor Family' policy is to provide every poor family in the country with good quality, suitable livestock.

Caring for the Environment

Landlocked, hilly Rwanda is one of the most densely populated countries in Africa, and this places huge pressures on the environment. As families try to produce more food



from smaller plots, soil quality is declining. Deforestation is a problem, as the rising population needs more land to cultivate and extra fuel to burn, and the valuable wetlands are under threat.

The sustainable farming techniques introduced however enable farmers to manage their land in an environmentally sensitive manner. Fertility is restored to the soil, protecting it from erosion. People begin to grow more food on their existing plots of land, so they have less need to clear forests and fuel-saving stoves also spare the trees.

Partners in the Programme

Apart from local initiatives mentioned above we also

have other local and international NGO's that contributes to the "one cow per poor family program". These includes; Heifer International, Send a Cow Rwanda, LWF and others but to mention a few.

— John Musemakweli
Member of Rwandan Parliament -
The Chamber of Deputies, and
CVA Councillor, Rwanda

Bringing Books To Africa

Every two years, students from the Onderstepoort Faculty of Veterinary Science at the University of Pretoria in South Africa set out to help fellow veterinary undergraduates in Africa by distributing textbooks and journals to veterinary faculties in a number of countries where these are needed.



The 'Books for Africa' project was established in 1993 and each trip takes two years of planning and fund raising to make it a reality. In November and December this year, the students plan to visit veterinary faculties at universities in Zambia, Zimbabwe, Tanzania, Uganda, Kenya and Mozambique. During the last trip in 2008, over 10,000 km were covered.

The project is entirely reliant on sponsorship and donations of everything from textbooks to transport and visas to vaccinations. The 2010 team is asking anyone who might be able to help in some way to contact them by e-mail at luca@mendes.co.za.

More information about the Books for Africa Project can be found at www.library.up.as.za/vet/vbfa10.htm

~ Veterinary Record, February 13, 2010



West Africa

World Veterinary Day Celebrated Across Nigeria

Activities marking the World Veterinary Day were conducted across various states in Nigeria and the Federal Capital city, Abuja. The event was celebrated with public lectures, exhibitions and press visits and releases on the theme of the celebration. The celebration reached its zenith with an elaborate ceremony at Abuja Sheraton Hotel and Towers, attended by a wide range of government functionaries, veterinarians, journalists and other professionals.

In a related development, the executive members of the Nigerian Veterinary Medical Association in a bid to further the cause of the profession, had paid a courtesy visit to the Speaker of the House of Representatives, the Inspector General of Police and the Director General, National Agency for Foods, Drugs Administration and Control (NAFDAC). In their separate visits, the President, Dr. Charles C. Ibe called on the National Assembly, the police and NAFDAC to help in the passage of various veterinary related bills before the two chambers of the assembly. Enforcement of veterinary laws and recruitment of veterinarians into relevant units of the police and formulate friendly policies that would promote availability of veterinary drugs and products in

order to strengthen the quality of veterinary services in the country are some of the issues involved. The association wishes to announce that the 47th annual congress will be held from 17th - 23rd October, 2010 in Makurdi, Benue State capital tagged "The Food Basket of the Nation". This event is likely to be held concurrently with the CVA sponsored Fertility Workshop and the Regional Meeting of the CVA in West Africa.

At the private sector, the Animal Care Konsult Services, a private veterinary outfit and the highest private employer of veterinarians in Nigeria celebrated its 30th anniversary in the service of veterinary profession. The event attracted the *crème de la crème* of the profession, livestock farmers and consumers. The celebration ended with a workshop on diagnostic techniques in poultry and fish farming.

B.M. Agaie
CVA Councillor, Nigeria

Report On Celebration Of World Veterinary Day in Ghana

As part of this year's national celebration of the World Veterinary Day, two major activities were organised in Cape Coast in the Central region. These were an outreach programme involving the vaccination of dogs, cats and monkeys against rabies on 20th April, 2010 and a public lecture on rabies on 21st April, 2010.

Outreach Programme

Cape Coast is the regional capital of the Central Region of Ghana. According to the 2009 animal census, there were 4,418 dogs and 7,781 cats. There have been reported cases of rabies involving both humans and animals over the years.

A free vaccination camp was held and in all 191 dogs and 109 cats were vaccinated. No monkeys were vaccinated. The Metropolitan Director of Agriculture, veterinary staff and members of the Central Region branch of the Ghana

Veterinary Medical Association have made immense contributions towards this programme.

Public Lecture on Rabies

Public lectures on rabies were held at the Conference Hall of the Ministry of Food and Agriculture, Cape Coast. The Chairman was Dr. Joseph Enchill, a retired veterinary surgeon. The welcome address was given by Dr. A.N.A. Ayitey, the Regional Representative of the Ghana Veterinary Medical Association.

Dr. K.B. Darkwa, the President of the Association addressed the gathering. Other lectures were from Sir Dr. Anthony Annan Prah, a veterinary surgeon with the University of Cape Coast and Dr. Joseph Nuertey, the Metropolitan Director of Health Services, Cape Coast. Sir Dr. Anthony Annan Prah made

CVA REGIONAL NEWS

his presentation from a veterinary perspective while Dr. Joseph Nuertey's was from the human perspective. Both presentations focused on the etiology, clinical signs, symptoms and prevention of rabies.

In all 102 participants comprising of the staff of the Ministry of Food and Agriculture, Statistical Service, Social Investment Fund, Forestry Commission, Electricity Corporation, students and lecturers of the Faculty of Agriculture, University of Cape Coast, staff and pupils of the Adventist Preparatory School, and the general public attended the lectures.

Both activities were a major success and they achieved

their objectives considering the fact that this was the first time the World Veterinary Day was being celebrated in Cape Coast.

There was press coverage of all the activities on the national television, GTV, Radio Central, YES FM, Atlantic FM, Ahomka FM, Nkwa FM and Graphic Publications.

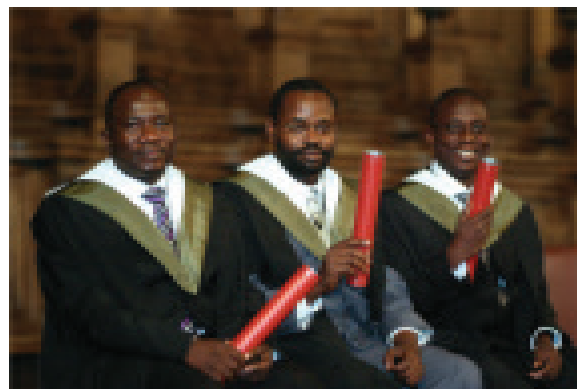
Kingsley Mickey Aryee
CVA Councillor, Ghana

Commonwealth Scholars Complete Online MSc

African students supported by Commonwealth scholarships are among the first graduates of an online animal health MSc by distance learning. The first cohort graduating in International Animal Health have been awarded degrees by the University of Edinburgh. The part-time online programme is designed to allow students around the world - many of whom are working vets - to continue work while developing their skills. It offers students in developing countries access to the world leading expertise of Edinburgh's Centre for Tropical Veterinary Medicine. Close to 60 of the 80 students currently enrolled in the programme are supported by Commonwealth Scholarships, which fund Commonwealth citizens studying with UK universities. The Commonwealth Scholarships Commission has also provided funding for University of Edinburgh vets to run a summer school at Makerere University in Kampala, Uganda.

According to the Programme Director, Dr Mark Eisler, "International Animal Health MSc continues the CTVM's 30-year tradition of delivering world leading postgraduate education in Tropical Veterinary Medicine to students from the parts of the world where it is needed most". The University of Edinburgh is currently recruiting students for the October 2010 intake.

For further details of the programme and how to apply see: <http://www.internationalanimalhealth.ed.ac.uk> or contact the Programme Director: mark.eisler@ed.ac.uk.



Commonwealth Scholars.

L-R: Drs Wellington Bessong, from Cameroon, Dennis Muhanguzi, from Uganda, Emmanuel Allegye-Cudjoe, from Ghana



*Students engaging in field work in Uganda
(photos by Dr Mark Eisler)*

UK Mediterranean

Dr Karen Reed Appointed Head of Welfare and Research at Brooke

Dr Karen Reed, Regional Representative, CVA UK Mediterranean Region and Chair of the BVA's Overseas Group, has been appointed as the new head of Animal Welfare and Research at the Brooke Equine Welfare Charity.



Ms Reed joins the Brooke from the Society for the Protection of Animals Abroad (SPANNA), where she was Veterinary Director. She will lead a team of animal welfare specialists providing technical support to the Brooke's country partners and the UK office.

'I am really looking forward to working alongside my dedicated colleagues here at the Brooke in the UK and overseas she said. 'The key objective of my new role is to keep working equine welfare at the centre of our work by ensuring it is underpinned by high-quality Animal Welfare information. The charity's goal is to increase the number of working animals it can help from 730,000 to two million a year by 2016.'

The Brooke also recently announced that it will be expanding its work into Senegal. It will be running a 15-month pilot project there following a scoping study in 2008 of seven countries that explored the potential for expanding its operations. The charity says that, of these countries, Senegal presented the highest number of working animals with significant welfare problems, as well as a high level of human poverty.

The Brooke will be working in partnership with Agronomes et Veterinaires Sans Frontieres (AVSF), which will provide regional insight to help develop relationships and tools for future expansion within Senegal. During the first phase of the project, a comprehensive assessment of the key welfare issues affecting working animals in the area will be carried out. This will help inform the development of the programme.

Ms Tania Dennison, programme adviser for Africa at the Brooke, commented: 'It is a learning phase for all concerned and through this test period; AVSF and the Brooke intend to improve the welfare of working horses and donkeys through activities aiming at changing the practices and behaviour of owners and handlers to positively impact on the longer-term contribution of these animals to livelihoods.'

~ Veterinary Record, April 24, 2010

Top Teaching Award For RVC Lecturer

Dr Sarah Baillie, a lecturer at the Royal Veterinary College, was named the 'most innovative teacher of the year' at the Times Higher Education (THE) awards on October 15th, 2009.



She is the developer of the 'haptic cow', a virtual reality simulator designed to help veterinary students and others learn the skills of palpation before moving on to live animals.

The haptic technology - including the cow! - has been so well received by the students, making learning an enjoyable and rewarding experience for them. This innovation has already had a positive impact on the way veterinary students learn, and its international adoption proves its universal brilliance.

Dr Baillie has also invented haptic horse and a core skills trainer. The former helps prepare students for treating abdominal complaints such as equine colic; while the latter series of haptic computer games designed to help veterinary students improve their dexterity and perceptual skills. A shorter version of the game has been taken to schools and to exhibitions at the Royal Society and Royal Institution to engage students in science as well as veterinary medicine.

Dairy Industry Award for Dr Christianne Glossop

Dr Christianne Glossop, the Chief Veterinary Officer for Wales, received the Royal Association of British Dairy Farmers' (RABDF) Princess Royal Award at a ceremony at Buckingham Palace on March 11. The award, which was presented by the Princess Royal herself, recognises outstanding services to the industry.



Having dedicated her career to improving the health and welfare of livestock, Professor Glossop has most recently been involved in devising and implementing TB control and eradication measures in Wales.

New Chairman for BVA Board

Mr Derek Williams has been elected as the new non-executive Chairman of the BVA Board. He succeeds Brain Hoskin, who had been Chairman of the Board since its establishment and who stood down last year having reached the end of his term of office.



Mr Ted Chandler, a former President of the BVA, has been elected as Deputy Chairman of the Board.

Mr. Williams has been a member of the BVA Board since 2008. He previously ran a 12 million publishing business, TC Scott, for 25 years during which time the company provided advertising and other services to the BVA. More recently he chaired the Publications Review Group, which resulted in the transfer of Veterinary Record and In Practice editorials and production processes to the BMJ Group.

~ **Veterinary Record, February 6, 2010**

Third Veterinary World Cup Cricket 7-11 November 2011

The Veterinary World Cup Cricket Tournament comes to New Zealand next year, the first time the competition will be venturing outside South Africa.

Held every four years to coincide with the "real" World Cup Cricket Competition, it is designed to foster camaraderie within the veterinary profession and associated industries. While ability is rewarded, the emphasis is on good fellowship and social interaction.

Games are played as 22 eight-ball overs per innings with no more than three overs per bowler. A batsman has to retire on reaching 50 runs but can return if the team is all out prior to the end of the allotted overs. Each team will play two games per day in a round-robin format with the finals being held on the last day.

The tournament is to be played at the picturesque Ongly Park cricket ground in Palmerston North. This park has 10 cricket wickets all within view of one another - a

perfect base for the tournament.

It is expected 12 teams will participate - six New Zealand and six overseas with supporters to take numbers to around 180 people.

This is a huge opportunity for New Zealand veterinarians and the animal health industry to showcase the country and sporting prowess to overseas colleagues.

VetScript will be bringing further updates on planning for the event over the next 12 months. The event is proudly sponsored by NZVA, SVS, Hill's Pet Nutrition, Stockguard and Bomac.

Rodney Vercoe, tirauvetcentre@xtrax.co.nz
www.vetericricket.com

~ **VetScript, February 2010**

Honours for RVC Team

Each year, the American Veterinary Medical Association organizes a contest for aspiring animal welfare scientists to meet and test their skills in assessing animal welfare in a variety of practical and theoretical settings.

In 2009, Royal Veterinary College UK entered a team for participation. This was the first time that a team had entered the contest from outside of the USA and Canada. Standards were high and expectations guarded.



The competition took place over two days, and was hosted by Michigan State University and cosponsored by the AVMA. There were three different categories of terms-science undergraduates, veterinary undergraduates and postgraduates-and all were assessed on four scenarios. These were farmed meat goats, laboratory rats, farmed sheep and captive white-tailed deer.

Despite its inexperience in the competition setting, the RVC team won a grand total of five categories, including highest score overall; highest team assessment score; first place undergraduate team; highest individual (Rebecca Fisher).

The contest has been heralded as a positive and significant event in the RVC calendar, for its centre for Animal Welfare, the Biveterinary Science degree programme and the College as a whole, in recognizing the quality and importance of Animal Welfare teaching and learning.

~ *Veterinary Record*, April 3, 2010

New President of BEVA

Dr Madeleine Campbell was elected as the new President of the British Equine Veterinary Association (BEVA) at its annual general meeting on 15th December 2009. Dr. Campbell, who succeeded Chris Housed as BEVA President, is based in East Sussex, and has a particular interest in equine reproduction.



~ *Veterinary Record*, January 2, 2010

Vulnerable British Dog Breeds 'Risk Extinction'

Interest in the Sealyham terrier is on the increase, according to the Kennel Club, UK

The Sealyham terrier is on the club's list of vulnerable native breeds - those that have fewer than 300 puppy registrations each year, and which the club believes risk extinction. It hopes that the renewed interest in the breed will help reverse the decline in its numbers. Registrations of otterhound puppies have declined by 42 per cent in the first quarter of 2009.



~ *Veterinary Record*, May 9, 2010

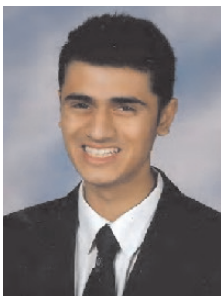
First animals to live without oxygen

Deep under the Mediterranean Sea, small animals have been discovered that live their entire lives without oxygen and surrounded by 'poisonous' sulphides. Researchers writing in the open access journal *BMC Biology* report the existence of multicellular organisms (new members of the group *Loricifera*), showing that they are alive, metabolically active, and apparently reproducing in spite of a complete absence of oxygen.

~ *Deccan Herald*, June 12, 2010

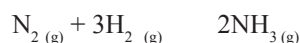
Urine: don't flush it away

At first glance, we may wonder how we can be running out of food. Our planet is blessed, perhaps uniquely, with a combination of just the right factors for life. Paradoxically, our own success has been our downfall; as we drive for efficiency in agriculture we deplete our soils of essential nutrients. In recent times, chemistry has tried to find a solution.



Fertilisers are chemicals which are added to soil to increase its fertility. They are usually subsidised, but rising prices have caught out developing nations¹. With starvation on the horizon, it is of paramount importance to place the control of crop yields back in the hands of local farmers. In this essay I hope to detail one method in which we can do this.

Nowadays, compounds of ammonia (NH₃) are particularly favoured in fertiliser development. The nitrogen they contain can be used directly by plants to manufacture amino acids, the so-called building blocks of life². In terms of food, using nitrogenous fertiliser promotes healthy growth and higher yields. Usually, the required ammonia is produced in the Haber process:



However, as GCSE chemistry has taught us, the temperature and pressure requirements (450°C, 200 atm, iron catalyst) make this process unviable in small-scale farm production. The method I suggest is comparatively energy-efficient and easy to replicate. For it to work, three cheaply-available inputs are needed: urine, the enzyme *urease*, and magnesium chloride (MgCl₂).

We are all familiar with the pungent odour given off by urine as it goes stale. Microbes hydrolyse the nitrogen-rich urea in urine ((NH₂)₂CO), producing alkaline ammonia gas. But this is a slow process, and the gaseous products may take weeks to form. The addition of the enzyme *urease* (derived naturally) will speed up the reaction considerably³:



Once we have left the reaction to 'go' for a few hours (the pH should become alkaline), the magnesium chloride can be added. This absorbs the ammonia, and precipitates out as the white solid (NH₃)₆MgCl₂. Dissolving this solid in water will produce our fertiliser concentrate, which can be diluted further and sprayed onto the crops.

This two-step method contains little advanced chemistry; it isn't meant to. I like to think of it as a farmer's 'DIY process', from building the simple reactor needed to treating the crops. The idea of using urine to grow food may not seem palatable at first, but to feed a hungry world, it is the best chemistry could hope for.

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1 http://findarticles.com/p/articles/mi_hb3120/is_11_80/ai_n31011416/; 8th October 2009

2 <http://tfti.org/factsandstats/N.cfm>; 8th October 2009

3 <http://www.submersibledesign.com/drinkpee/diy.html>; 9th October 2009

By Ibrahim Hasanyn Naim Sheriff. Class S6C at Dulwich College, Dulwich Common, London SE21 7LD

Article: Joint Winner of the Food Competition for Royal Society of Chemistry (RSC, UK) Chemnet, pub. 'RSC Chemnet News'

Kangaroos Fall Victim To Fluoride

Kangaroos living in Victoria's south-west, near the Alco aluminum smelter and Austral Bricks factory at Craigieburn, are developing tooth and bone deformities from exposure to fluoride emissions.



Unconfirmed reports indicate that more than 200 Kangaroos living near these sites have been culled in recent years.

There are also concerns that Kangaroos might not be the only animals affected in the area, and other foraging animals may also be at risk. The Environmental Protection Agency (EPA) was first warned of the effect the emission levels were having on the kangaroos in 2005.

Last year autopsies were performed on 49 Kangaroos at the University of Melbourne, with results showing that all but one were suffering fluorosis, which can lead to bone growths, lesions and deformities in the jaw and teeth.

~ AVJ, Vol.88 No.4 April 2010

Additional References

Journal of Commonwealth Veterinary Association

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Articles should have a structured abstract of no more than 250 words. The subdivision is up to the author, but should encompass the Objective, Design, Procedure, Results and Conclusion. Write subheadings in lower case bold letters, followed by the text on the same line. List nonstandard abbreviations and their explanations after the abstract. Use only the abbreviated form in the text. Avoid use of abbreviations in the abstract. The main headings, following an untitled introduction, are Materials and Methods, Results, Discussion, Acknowledgments and References. The introduction should state the purpose of the study. The contents of Materials and Methods should enable others to reproduce the work. Present the findings in Results concisely and logically. Evaluate and interpret the findings in the Discussion, but do not present new data. If possible, write the main conclusions at the end of the Discussion. Headings may vary from standard if the variation makes the article more informative.

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Type each table double-spaced on a separate page. Number tables in Arabic in the order they are referred to in the text. Each table should have a concise title that describes its content adequately. Information in the table must not be repeated in detail in the text. Do not use vertical lines. Use horizontal lines to separate the table from the title, and footnotes and column headings from data.

Figures

Both black and white and colour photographs are encouraged to a maximum of five only. Figures can be submitted in digital form as separate files. They should be saved as TIFF, JPEG or EPS files with a resolution of 300 dpi. EPS files must be saved with the preview option. Illustrations provided as MS Word files will not be accepted. Write legends for figures and explanations of symbols on a separate page. Legends should contain enough information to make the figure comprehensible without reference to the text.

References

Cite only those publications that are essential for the understanding of the study. Number text references consecutively, in the order in which they are mentioned, by superscript Arabic numerals. Write and number the reference list in the sequence of the references in the text. References to journals, books, conference proceedings, organisational papers, anonymous editorials, foreign language articles and internet web sites, respectively, are written as follows:

1. Gibson KT, Hodge H, Whittam T. Inflammatory mediators in equine synovial fluid. *Aust Vet J* 1996; 73: 148-151.
2. Peterson ME, Randolph JF, Mooney CT. Endocrine diseases. In: Sherding RG, Editor. *The Cat: Diseases and Management*. 2nd edn. Churchill Livingstone, New York, 1994: 1403-1506.
3. Rhodes AP. Infectious bovine keratoconjunctivitis vaccination. In: *Proceedings of the 23rd Seminar, Sheep and Beef Cattle Society*, New Zealand Veterinary Association, June 1993.
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7. Council of Docked Breeds. The case for docking. <http://www.cdb.org>. 1992. Retrieved 15 October 2001.

List all authors if there are five or fewer. When there are more than five authors, list only the first three and add 'et al'. Write titles of books, journals and other publications in italics. Capitalise only the first letter of the book titles. Do not underline or use bold letters. The abbreviation of journals follows that of Serial sources for the BIOSIS previews database. Cite references to unpublished work only in the text, with a notation of (personal communication) or (unpublished). Please send a copy of any cited work that is included in the reference list as 'in press'. It is the authors' responsibility to check the accuracy of reference citations.

Acknowledgments

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

2010

62nd CVMA Convention, “*Best Medicine Practices – Timely Topics*”, Calgary, Canada. **July 7-10.**

26th Biennial Caribbean Veterinary Conference, Ocho Rios, Jamaica. **November 3-6.**

6th International Colloquium on Working Equids, New Delhi, India. **29 Nov - 3 Dec.**

13th CVA-West African Regional Meeting and Workshop on Ruminant Infertility, Nigeria. (Date and venue to be announced).

2011

5th Pan Commonwealth Veterinary Conference, Accra, Ghana. **March 21-25.**

AVA Annual Conference, Adelaide, South Australia. **May 15-20.**

NZVA Annual Conference, Christchurch Convention Centre, New Zealand. **June 20-24.**

30th World Veterinary Congress, Cape Town, South Africa. **October 10-14.**

CVA Regional Meeting of UK Mediterranean Region, Malta. (Date to be announced).

2012

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

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

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