

### فراز خواب سی دنیا دکھائی دیتی ہے

## ڈاکٹر ظفر الطاف مرحوم

ڈاکٹر ظفر الطاف مرحوم کی وصال کی خبر پر ساری دنیا دکھائی دیتی ہے۔ ان کی وفات سے پوری دنیا غمگین ہے۔ ان کی خدمات کو یاد کرنا اور ان کی شخصیت کو جاننا ہر ایک کے لیے ایک سبق ہے۔

### بالہ پولی

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# ویٹ نیوز اینڈ ویوز

ہفت روزہ

پہلی اپریل 2019ء کو شائع ہونے والی پہلی جلد اور اولیات پاکستان میں شائع ہونے والی پہلی جلد

جلد نمبر 04 15:08 15 مئی 2019ء صفحات 10 قیمت 150 روپے شائبہ نمبر 26 ABC کے تصدیق شدہ

ایڈیٹر: ڈاکٹر خالد محمود شوق  
ڈائریکٹر: ڈاکٹر شکیل عباس  
ڈائریکٹر: ڈاکٹر شکیل عباس  
ڈائریکٹر: ڈاکٹر شکیل عباس

## 5 مئی کو لاہور میں پاکستان ویٹرنری میڈیکل ایسوسی ایشن اور ویٹرنری ڈاکٹرز ایسوسی ایشن پنجاب کا مشترکہ اجلاس

لاہور (قلم نگار خصوصی) پاکستان ویٹرنری میڈیکل ایسوسی ایشن اور ویٹرنری ڈاکٹرز ایسوسی ایشن پنجاب کے مشترکہ اجلاس کا انعقاد 5 مئی کو لاہور میں منعقد ہوا جس میں صوبائی اور قومی سطح کے ویٹرنری ڈاکٹروں اور سائنس دانوں کی شرکت ہوئی۔ اجلاس کے افتتاحی سیشن میں ڈاکٹر خالد محمود شوق نے خصوصی خطاب کیا۔ انھوں نے ویٹرنری پیشہ کی اہمیت اور اس کی ترقی کے لیے حکومت سے مطالبہ کیا۔

اجلاس کے افتتاحی سیشن میں ڈاکٹر خالد محمود شوق نے خصوصی خطاب کیا۔ انھوں نے ویٹرنری پیشہ کی اہمیت اور اس کی ترقی کے لیے حکومت سے مطالبہ کیا۔

### پروفیسر ڈاکٹر طلعت نصیر پاشا عبدالاسطو ڈاکٹر کریم بھٹی اور ڈاکٹر مصطفیٰ کمال گار فاکہ آف ویٹرنری سائنس لاہور کا دورہ

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### ڈاکٹر راشد شہزاد صاحب دماغہ ڈاکٹر میٹھرا جرنل پروڈکشن ڈاکٹر سناک پنجاب مقرر کرنے کیلئے سری وزیر اعلیٰ کو ارسال کردی گئی

لاہور (قلم نگار خصوصی) ڈاکٹر راشد شہزاد صاحب دماغہ ڈاکٹر میٹھرا جرنل پروڈکشن ڈاکٹر سناک پنجاب مقرر کرنے کیلئے سری وزیر اعلیٰ کو ارسال کردی گئی۔

### ڈاکٹر محمد شہزاد کاسالو انگریز باک بیماریوں کے لیے طبی معائنات

لاہور (قلم نگار خصوصی) ڈاکٹر محمد شہزاد کاسالو انگریز باک بیماریوں کے لیے طبی معائنات کیلئے سری وزیر اعلیٰ کو ارسال کردی گئی۔

### بیرونگار ویٹرنری ڈاکٹروں کا اسمبلی کے سامنے مظاہرہ احتجاجاً ڈگریاں جلا دیں

لاہور (قلم نگار خصوصی) بیرونگار ویٹرنری ڈاکٹروں کا اسمبلی کے سامنے مظاہرہ احتجاجاً ڈگریاں جلا دیں۔ انھوں نے اپنی ڈگریاں جلا کر اس کے سامنے رکھی۔

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## چولستان یونیورسٹی آف ویٹری اینڈ اینیمل سائنسز کے وائس چانسلر کے عہدے کیلئے ڈاکٹر حامد جلیل کو دوسروں پر برتری

3 امیدواروں کے نام فائنل کرنے کے لئے ڈاکٹر حامد جلیل، پروفیسر ڈاکٹر مسعود بانو، پروفیسر ڈاکٹر مسرور الہی باہر کمرچ کمیٹی نے دوبارہ بھی اٹیئرو یو کے لئے پایا خصوصاً ڈاکٹر بیلا نیوٹیک پنجاب سرورسٹریٹیجک ہماڈورل پیٹک اور معروف صنعتکار سلیم الطاف نے بھی ان تینوں امیدواروں کے ساتھ انٹیرو یو کی اس میں سرچ کمیٹی کے سربراہ لیٹیفینٹ جنرل (ر) ڈاکٹر محمد اکرم جلیل ستار، پروفیسر ڈاکٹر محمد زاہر اور اس حسن وجید شامل تھے، ڈاکٹر حامد جلیل نے چولستان یونیورسٹی کو اس خطی ترقی میں استعمال کرنے کا وٹن پیش کیا، حامد جلیل مختلف بین الاقوامی اداروں کے ساتھ کام کرنے کا تجربہ حاصل ہے، وزیر اعظم عمران خان کی لائسنس کا کے متعلق پہلی تقریر کے نکات بھی حامد جلیل نے فراہم کئے تھے



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# Veterinary News & Views

Faisalabad

Editor in Chief: Dr. Khalid Mahmood Shouq  
Editor: Dr. Tean Zaheer  
Executive Editor: Zeeshan Khalid

Vol. 14 08 - 15 May 2019 Rs. 150/- Page 10 Issue No. 26



National Research Institute For Agricultural Tourism

## SOUND ANALYSIS OF BROILERS TO BE EXPLORED TO BOOST HEALTH AND WELFARE

Researchers are to look at sound analysis of broiler chickens to see what they can tell about the health, welfare and productivity of birds during their lifetime.



The project, coordinated at the University of Bristol's Department of Agriculture, Veterinary and Food Science, comes at a time when there is growing belief that vocalisation sounds in broilers reared under intensive farm conditions may have the potential to be used as a tool to improve health and welfare.

Precision livestock farming is developing management tools aimed at continuous automatic monitoring of animal welfare, health, environmental impact and production in real time. Audio analysis, and decision making informed by audio information and prediction and avoidance of health, welfare and disease impacts through use of automated measures may have the potential to have positive effects on animal health and welfare in poultry farming systems. Led by Dr Andy Butterworth, the project's objectives are the identification and characterisation of vocalisations by chicks, using automated audio assessment

tools, during early life, under normal farm conditions. The project will also examine the possible links between specific individual sound and social behaviours, and the characterisation of possible vocalisation changes in terms of frequency and type of sound as the birds age. In addition, the study which begins in September - will look at whether there are any links between voice changes, frequency and type of sounds with alterations in house environmental factors.

Research The most recent research in this area, "Sound analysis to model weight of broiler chicken" published in *Poultry Science* in 2017, recorded sounds and body weight in an intensive broiler farm during 5 production cycles. For each cycle, the peak frequencies of the chicken sounds were used to estimate the weight and they were compared with the observed weight of the birds. No significant difference was shown between expected and observed weights along the entire production cycles. The identified model used to predict the weight as a function of the peak frequency confirmed that bird weight might be predicted by the frequency analysis of the sounds emitted at farm level.

### Vocalisations by chicks

## OSTRICH EGG MOSAIC COMPETITION HELD AT DEPARTMENT OF POULTRY PRODUCTION UVAS LAHORE

The Department of Poultry Production, University of Veterinary and Animal Sciences, Lahore organized Ostrich Egg Mosaic Competition at Ravi Campus, Pattoki. The students from BS Poultry Science, BS Zoology, BS Dairy Technology, M.Sc. Zoology, M.Sc. Botany, and M.Phil. degree programs very actively participated in the event. The students calligraphed and painted the eggs in unique and astonishing manners.



Ms. Sheeran (M.Sc. Botany) got 1<sup>st</sup> prize in the competition while 2<sup>nd</sup> and 3<sup>rd</sup> prizes were won by Ms. Mem-

ona Irshad and Ms. Iqra Abul Wakeel. Talking to the event, Prof. Dr. Athar Mahmud (Chairman Poultry Production) and Prof. Dr. Talat Naseer Pasha S.I. (Vice Chancellor, UVAS) emphasized on the importance of Ostrich farming and nutritional significance of meat. They also shared that not only the meat, but eggs, feathers, and skin of the ostrich also have huge market and export potential.

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## EUROPE: PLAN FOR PROMOTING POULTRY MEAT TO BE LAUNCHED

The European poultry organisation AVEC is in the process of raising funds for a €5.5m campaign promoting EU poultry meat over the next 2 years.

When the funds are in, a tender for the promotion campaign will become active. The tender, which was already publicised, aims to increase public awareness of high production standards in the European Union as well as the health benefits of eating poultry meat. It also aims to contradict myths/fake news on the production of poultry meat and hopes to see a rise in consumer confidence in eating poultry meat. The campaign tender says the promotion needs to show the relevance of poultry meat for the EU economy and highlight the social impact of the production, especially in rural areas. Key target audiences include not just consumers but key opinion formers, decision makers as well as retailers and catering/food services sectors. The promotion has the support of a number of AVEC's nations including Italy, Germany, Poland and the Netherlands and will be targeted in those countries as well as France and Belgium. Selection is being based on quality and coherence of the strategy, value for money, understanding of the EU promotion rules, experience of EU communication projects and work in the 6 targeted countries. In its last annual report AVEC Secretary General Birthe Steenberg and President Paul Lopez said the organisation's vision was to bring European poultry to every table. "Every consumer, every food professional, every official and every politician needs to know the high value of the European poultry sector. "By choosing European poultry meat, consumers all over the world make a quality choice and we are committed to maintaining consumer confidence in our products via a high level of knowledge, innovation and transparency."



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## EXAMINING THE IMPACT OF MINERALS ON PHYTASE IN POULTRY DIETS

Animal nutrition, health and feed supplement company Alltech is joining forces with Nottingham Trent University in the UK to examine the impact of different forms of mineral on phytase in poultry diets.



The 3.5 year project will begin by assessing the interaction between minerals and phytase in poultry by carrying out an assessment of the gap between phosphorus (P) supply and requirement and looking at the impact of mineral source on phytase activity/P availability.

An undersupply of P leads to impaired skeletal development but oversupply contributes to environmental pollution. The issue is further complicated by the different forms of phosphorus. Plant materials contain phytates in a form that birds cannot use phytate phosphorus. As a result, birds must be offered either a mineral form of phosphorus that it can easily use, or aided in breaking down the phytate into usable phosphorus.

**Pressure to reduce Phosphorus**  
The industry is under pressure to decrease dietary inclusion of mineral phosphorus on both environmental grounds and the finite global supply of phosphates along with supply chain security, which have led to an increase in costs in recent years. However, it is acknowledged that in practice a margin of safety used around the usable P value ascribed to phytase in a formulation matrix due to the health consequences of undersupplying P.

**Understanding phytase**  
Increasing both the understanding of how extrinsic factors impact on phytase efficiency and also how phytase itself influences other key nutrients will increase the precision of nutrient supply to poultry.


The study, overseen by Dr Emily Burton Associate professor in Sustainable Food Production at the School of Animal Rural and Environmental Sciences and Dr Dawn Scholey, poultry research lead, will take place at the University's poultry nutrition research base at the Brackenhurst Campus. Subsequent trials will assess vitamin and mineral interactions by quantifying the impact of premix/feed storage on phytase activity/P availability and also potentially assessing the impact of mineral source on Vitamin E availability.

**Phosphorus is a key nutrient for poultry**

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# مجنوں جو مر گیا ہے جنگل ادا ہے

## سابق ڈین/کمانڈنٹ آرمی میڈیکل کالج سرگودھا بریگیڈ میجر (ر) ڈاکٹر محمد شرف 2 مئی کو فیصل آباد میں انتقال کر گئے

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14-05-2019ء

15:08

26

ABC سے تصدیق شدہ

# ٹوبہ ٹیک سنگھ میں ڈیپٹی کمشنر میاں محسن رشید کی سینئر ویٹرنری ڈاکٹر اعجاز کے ساتھ بدکلامی

رمضان بازار میں جمع سما کی اور غیر قانونی طور پر پولیس کی مدد سے ویٹرنری ڈاکٹر زویہ بیٹری اسسٹنٹ اور گوشت فروخت کرنے والے کو تھما کر اسٹیشن میں لے لایا، ویٹرنری ڈاکٹر زویہ بیٹری اسٹیشن کے عہدیداروں کا سخت احتجاج تھا جس کا رد ان کو کر دیا گیا۔ ویٹرنری ڈاکٹر اعجاز نے ٹوبہ ٹیک سنگھ میں عہدیداروں کو سزا دینے کی درخواست کی اور ان کے خلاف کارروائی کرنے کی درخواست کی۔

No. 1-1650/Stat/L&D/2019 (Ramzan)

GOVERNMENT OF THE PUNJAB

LIVESTOCK & DAIRY DEVELOPMENT DEPARTMENT

Dated Lahore the 1<sup>st</sup> April, 2019.

To

1. The Director General (Ext., Res. & Prod) L&DD Punjab, Lahore.
2. All the Divisional Livestock in Punjab.
3. Director, Poultry Research Institute, Rawalpindi.
4. All the Additional Director Livestock in Punjab.
5. All the Deputy Director Livestock in Punjab.

Subject: **ROLE OF L&DD DEPARTMENT IN RAMZAN PLAN 2019.**

I am directed by the Competent Authority to convey that L&DD Department will play its role during Ramzan 2019 as under:

1. Arrangement of poultry & eggs at Ramzan Bazaars in collaboration with Pakistan Poultry Association (PPA).
2. Livestock & Dairy Development Department will organize meetings with Punjab Poultry Association (PPA) and District Administration for smooth supply of poultry meat and eggs.
3. Poultry meat and eggs will be provided at reduced rate as compared to market rates through Punjab Poultry Association (PPA).
4. Panaflex will be provided by PPA as per previous practice and it will be installed at each Ramzan Bazaar indicating the availability of Chicken meat & eggs.
5. Announcement will be made through loudspeakers / Megaphone regarding the availability of chicken meat and eggs in Ramzan Bazars.
6. Deputy Director Livestock at Tehsil level will monitor the Ramzan Package in the province.
7. Additional Director Livestock at District level will monitor the Ramzan Package in the province.
8. Director Livestock at Division-wise will monitor the Ramzan Package in the province.
9. One attendant will be deputed in Ramzan Bazaar for assistance to District Administration for smooth supply of chicken meat and eggs.

C.C.

1. PSO to Minister Livestock Punjab.
2. PSO to Secretary, L&DD Department.
3. Deputy Director (Price) Directorate General of Industries, Price, Weight & Measures Punjab, Lahore.

STATISTICAL OFFICER

3۔ لائیو سٹاک سیکشن، ایف ڈی اے، ٹوبہ ٹیک سنگھ میں جمع سما کی اور غیر قانونی طور پر پولیس کی مدد سے ویٹرنری ڈاکٹر زویہ بیٹری اسسٹنٹ اور گوشت فروخت کرنے والے کو تھما کر اسٹیشن میں لے لایا، ویٹرنری ڈاکٹر اعجاز نے ٹوبہ ٹیک سنگھ میں عہدیداروں کو سزا دینے کی درخواست کی اور ان کے خلاف کارروائی کرنے کی درخواست کی۔

4۔ ڈاکٹر اعجاز نے ٹوبہ ٹیک سنگھ میں عہدیداروں کو سزا دینے کی درخواست کی اور ان کے خلاف کارروائی کرنے کی درخواست کی۔

5۔ ڈاکٹر اعجاز نے ٹوبہ ٹیک سنگھ میں عہدیداروں کو سزا دینے کی درخواست کی اور ان کے خلاف کارروائی کرنے کی درخواست کی۔

6۔ ڈاکٹر اعجاز نے ٹوبہ ٹیک سنگھ میں عہدیداروں کو سزا دینے کی درخواست کی اور ان کے خلاف کارروائی کرنے کی درخواست کی۔

7۔ ڈاکٹر اعجاز نے ٹوبہ ٹیک سنگھ میں عہدیداروں کو سزا دینے کی درخواست کی اور ان کے خلاف کارروائی کرنے کی درخواست کی۔

8۔ ڈاکٹر اعجاز نے ٹوبہ ٹیک سنگھ میں عہدیداروں کو سزا دینے کی درخواست کی اور ان کے خلاف کارروائی کرنے کی درخواست کی۔

9۔ ڈاکٹر اعجاز نے ٹوبہ ٹیک سنگھ میں عہدیداروں کو سزا دینے کی درخواست کی اور ان کے خلاف کارروائی کرنے کی درخواست کی۔

## لائیو سٹاک حکام کی عدم توجہی بیشتر ویٹرنری ہسپتالوں میں سہولیات کا فقدان

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سورہ یونس آیت 24 ... اس کے لئے تم کو ہماری کتابوں سے نجات دے رہا ہے ...

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محمود قاص، عارف کارگر، یونس فیروز، ارمداظمہ محمود، پارسٹنٹ آف پولٹری پروڈکشن، یونیورسٹی آف ویٹرنری اینڈ انیمل سائنسز لاہور

Table with 2 columns: Name of element and its concentration in mg/kg. Includes elements like Selenium, Zinc, Magnesium, etc.

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جاؤل بھاننے کے طریقے

تعمیر جانا ہے اور اس کے ساتھ ساتھ اس کے لئے مناسب طریقے سے جانور بھاننا ہے ...



1. جال بھاننے کے طریقے ... 2. جانور بھاننے کے طریقے ...

آرسینک اور صحت

آرسینک ایک سنگھٹ اور دہیولہ دار آئینہ ہے ... اس کے استعمال سے صحت کو نقصان پہنچتا ہے ...

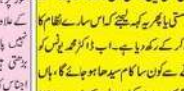
مستقبل کی مسابوہ بندی

آج کی تھک آرسینک کی مقدار، جیون کی معیار ... مستقبل کی مسابوہ بندی کے لئے اقدامات ...

جاؤل اور آرسینک

جاؤل اور آرسینک کے مضر اثرات ... آرسینک کے استعمال سے جانوروں کی صحت کو نقصان پہنچتا ہے ...

کمزور بالائشیں، حیرت انگیز خویاں اور طاقت کا خزانہ



دستین احمد، ڈاکٹر فیروز، ڈاکٹر عزیز، ڈاکٹر عزیز، ڈاکٹر عزیز ... کمزور بالائشیں، حیرت انگیز خویاں اور طاقت کا خزانہ ...

Advertisement for 'ABC' (Animal Breeding and Care) with contact information and services listed.

Advertisement for 'Tuzay' (Tuzay) featuring a picture of a cow and text about animal care and breeding.

Advertisement for 'Wings' (Wings) featuring a picture of a plate of food and text about a healthy diet.

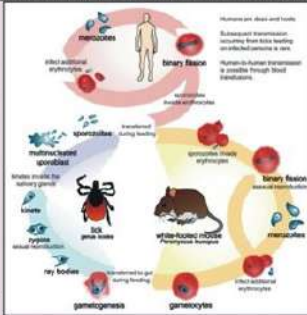
Advertisement for 'Hajrat' (Hajrat) featuring a picture of a cow and text about animal care and breeding.

Advertisement for 'Wings' (Wings) featuring a picture of a plate of food and text about a healthy diet.

# PROPLASMOSES: TICK BORNE INFECTION

Muhammad Abdullah Malik, Muhammad Sohail Sajid

Ticks and tick-borne diseases (TBD) cause major health and management problems of animals in tropical and subtropical areas of the world, including India, Bangladesh and Pakistan, where climatic conditions are suitable for the growth and development of several tick species (Gosh et al., 2007). Hot and humid environment favors the growth and persistence of ticks (Mirzai, 2007). Ticks are highly abundant during summer season where *Hyalomma* spp. is more abundant during the month of June (Sajid et al., 2007). Prevalence of livestock ticks are significant in different regions of Pakistan. Reported prevalence of ticks in cattle and buffaloes is more than 50% and more shares among them are of *Hyalomma* spp. of 5-10 years of age. Among tick-borne diseases, Theileria, Babesia and Anaplasma are chief blood parasites of cattle and buffaloes in Pakistan (Khan et al., 2004). Prevalence of tick-borne diseases differ based on age, sex, breed, tick density, season, geographical area and management. In Pakistan, *Hemaphysalis* and *Hyalomma* are commonly interwoven in the spread of proplasmiasis to ruminants (Rehman et al., 2004). Tick-borne diseases have a common point that after acute infection, the animals become carrier for prolonged period (Callow, 1984). Carrier animals become reservoirs and help ticks in transmission of infection to the vulnerable animals. Babesiosis and theileriosis belongs to apicomplexans and also known as piroplasmiasis (Urchhart et al., 1996). Babesiosis caused by an intra-erythrocytic parasite; *Babesia* (B) spp is highly prevalent in sub-tropical and tropical areas of the world and transmitted by ixodid ticks. The economically significant species of *Babesia* that affect cattle and sheep are *B. bovis*, *B. bigemina*, *B. divergens*, and *B. ovis* (Urchhart et al., 1996). *Babesia bovis* has been stated to be more severe as compared to *B. bigemina*. Cattle of 1-2 years of age are more infected with *B. bigemina* and *T. annulata* (Callow, 1984).



*parva* is restricted to Eastern, Southern and Central Africa and *T. annulata* is present in North Africa, Asia and Southern Europe. Transmission is through ixodid ticks (Schnitger et al., 2000). In case of *B. bovis* the parasite red blood cells congest in micro capillaries of kidney, lungs and brain and ultimately cause organ failure, leading to death (Jongjan and Uilenberg, 2004). *Babesia bovis* is an utmost contagious pathogen and causes neurological and respiratory disorders that lead to death in infected cattle. Disease is characterized by fever, anorexia, weight loss, reduced milk production, anemia and icterus (Callow, 1984). Theileriosis is characterized by high fever, anemia, morbidity, mortality (Aktas et al., 2004). *Theileria* and *Babesia* spp. have a complex life cycle, asexual developmental stages are completed in mammalian blood cells and sexual developmental stages in tick vector (Kakoma and Mehlhorn, 1993). Transovarial transmission does not occur in case of *Theileria* (Schnitger et al., 2000). Clinical signs and symptoms, microscopic examination, serological tests and molecular techniques provide a comprehensive diagnosis and identification of *Piroplasma* spp. Conventional methods used for their identification is Giemsa stained blood smear. Disadvantage of conventional diagnosis is inability to detect carrier animals due to low parasitemia (Figueroa et al., 1993). Different serological methods used for identification of these hemoprotozoa are rapid card agglutination, enzyme linked immune sorbent assay (ELISA), complement fixation test and indirect fluorescent antibody (OIE, 2008). Indirect fluorescent antibody test (IFAT) is less specific due to

cross reactivity of antibodies and ELISA lacks sufficient sensitivity in detecting infection in low parasite burden. Polymerase chain reaction (PCR) is sensitive and versatile method for identification of tick-borne infections in carrier animals (Aktas et al., 2004). Reverse line blot analysis (RLB) can concurrently detect multiple pathogenic species in a sample (Georges et al., 2001) however, special skills and specific equipment is required. Vector screening is important to design a systematic method for vector control to check parasite load in larval nymph and adult stages of vector (Yokoyama et al., 2012).

### RECOMMENDATIONS

- Short term recommendations**
1. Use of acaricides for vector control to prevent transmission from one animal to the other.
  2. Proper hygienic measures to control the tick vector.
  3. Prophylactic measures must be adopted before onset of disease occurrence seasons, especially summer and rainy seasons.
  4. Susceptible animals must be screened for hemoparasite prevalence as early as possible.
  5. Treatment of diseased animals must be done at early age as negligence may lead the animals towards death.
  6. The epidemiological investigation of piroplasmiasis should be done at district and provincial level.
- Long term Recommendations**
1. A lot of work has been going on vaccination and still this sector requires more attention from scientific community.
  2. Different species of theileria and babesia must be detected using modern techniques.
  3. Wide-scaled awareness campaign for sustainable parasitic management.
  4. Government should give incentives to farmers for parasitic control program.

# FOOD FOR THOUGHT: PAKISTAN & IMF BALLOONS

HUZAIMA BUKHARI AND DR IKRAMUL HAQ

It is a fact that after two programs of IMF, under PPP and PMLN, our economic woes have continued. In fact, the situation on fiscal front deteriorated despite taking US\$ 100 million loan from World Bank for six-year-long Tax Administration Reforms Programme (TARP). At the end of TARP in 2012, our tax system was more dysfunctional than before. The critics of IMF blame Pakistani tax administrators and foreign experts for this fiasco. Their main objection is that the IMF and World Bank suggest prescriptions without any debate in Parliament, though State Minister for Revenue, Hamid Azhar said that details would be shared in Parliament! No doubt, as in the past, new IMF's bailout package will entail tough conditions, for which decisions are not only unpopular but detrimental to the economic growth of the country, would have to be taken in the coming days. Instead of abusing IMF, World Bank etc. it is time for introspection. We have failed to reform our rotten, oppressive, unjust and target-oriented tax system that is anti-growth. Had we concentrated on sustainable growth of above 6%, tax could have been increased automatically. Meeting budgetary targets through oppressive taxes and blurring out the ultra-rich is our real dilemma.

The third time government of Nawaz Sharif set new records of borrowing at home and abroad though before coming to power contrary claims were made. On September 4, 2013, PML-N signed fresh loan agreement of \$6.7 billion with IMF and Nawaz's economic wizard, Ishaq Dar said, "It will not hurt the country on the path of sustainable growth and was going to meet ending up with other international lenders". Jubilation on further indebtedness by the PML-N received a jolt when IMF decided to disburse only \$547 million as first tranche, much lower than what Ishaq Dar was expecting. For the release of the remaining amount, tough conditions were imposed and accepted. These were never debated in Parliament as was the case in 2008 under PPP. Now strangely, both PPP and PMLN are criticising PTI Government for availing IMF's bailout without any debate in Parliament, though State Minister for Revenue, Hamid Azhar said that details would be shared in Parliament! No doubt, as in the past, new IMF's bailout package will entail tough conditions, for which decisions are not only unpopular but detrimental to the economic growth of the country, would have to be taken in the coming days. Instead of abusing IMF, World Bank etc. it is time for introspection. We have failed to reform our rotten, oppressive, unjust and target-oriented tax system that is anti-growth. Had we concentrated on sustainable growth of above 6%, tax could have been increased automatically. Meeting budgetary targets through oppressive taxes and blurring out the ultra-rich is our real dilemma.

# EQUINE GLANDERS SEEMS A CURABLE DISEASE NOW

Author's name: Prof. (R) Dr. Ghulam Muhammad<sup>1</sup>, Dr. Muhammad Saqib<sup>1</sup>, Murfaa Batool<sup>1</sup>

Affiliation: <sup>1</sup>Department of Veterinary Clinical Medicine and Surgery, University of Agriculture, Faisalabad-Pakistan



Glanders is infectious, highly fatal, zoonotic disease of equines (horses, mules, donkeys) caused by a gram negative bacterium *Burkholderia mallei*. Clinically, it is characterized by fever, anorexia, progressive loss of body condition, cough, nasal discharge, nodules and ulcers on the skin and nasal septum, cord formation on lymphatics, enlargement of submaxillary lymph nodes and death (Muhammad et al., 1998; Saqib et al., 2012). Diagnosis of the disease is based on clinical signs, mallein test and isolation of the causative bacterium. In Pakistan, Glanders and Farcy Act of 1899 requires the detection and destruction of affected equines. An indemnity (money paid as compensation) of Rs.50 is paid to the owner for destruction of his glanders affected horse/mule/donkey. However, this indemnity is so low that the owners of affected equines are not willing to allow their glanders affected equines to be destroyed. Consequently, they sell diseased equines to other peoples which

spread glanders at new places. A successful treatment of glanders may address this problem. Muhammad et al. (1998) reported a partial short term cure (lasting for about 2-3 weeks) of glanders when affected equines were treated for 4 days with Ringer's lactate devosive + dimethyl sulfoxide (DM) and norfloxacin (NM). Prompted by this short term cure, Saqib et al. (2012) tested the efficacy of a 12 weeks course of antibiotics for the treatment of glanders in 23 horses. The horses were treated IV with double of the recommended therapeutic dose of enrofloxacin (5mg/kg body weight) and trimethoprim-sulphadiazine (1mg Tribissen) (GSK, Pakistan; 32mg/kg body weight) I.V. in week 2 and 3, the dose of the enrofloxacin was reduced to 4mg/kg body weight (i.e. normally recommended dose rate) IV and that of Tribissen to 16mg/kg body weight (i.e. normally recommended dose rate) IV. After completion of 3 weeks IV therapy with enrofloxacin and Tribissen<sup>®</sup> horses were treated orally with doxycycline up to 12 weeks. A visible improvement in the condition of the treated horses was evident from week 1. Fever subsided, horses began to eat almost normal amount of feed, edema of legs subsided, nodules and ulcers on the skin and nasal septum healed in all treated animals. A further improvement was noticed during week 2 and 3 of I.V. antibiotics therapy and no clinical sign other than enlargement of submaxillary lymph nodes could be detected after completion of week 12. Side-effects of treatment were mild and included fasciculations (involuntary jerking of muscles) in foreleg muscles in one horse on day 11 immediately after I.V. therapy with Tribissen<sup>®</sup> and alopecia on the trunk and neck during 2<sup>nd</sup> week of I.V. therapy. Hair growth started 2 weeks after completion of I.V. antibiotics treatment. One pregnant mare aborted on day 17. Induction of immunosuppression at day 90 by I.M. injection of dexamethasone + prednisolone for 10 days did not result in reappearance of any of the sign of glanders.

### AGRI TOURISM DEVELOPMENT CORPORATION OF PAKISTAN

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# AVOIDING MILK FAT DROP DURING HEAT STRESS

Heat stressed dairy cows often suffer milk fat depression, which can be costly to producers in the current challenging dairy market. However, ongoing research suggests that optimising rumen function can help sustain milk fat concentrations in cows under heat stress.

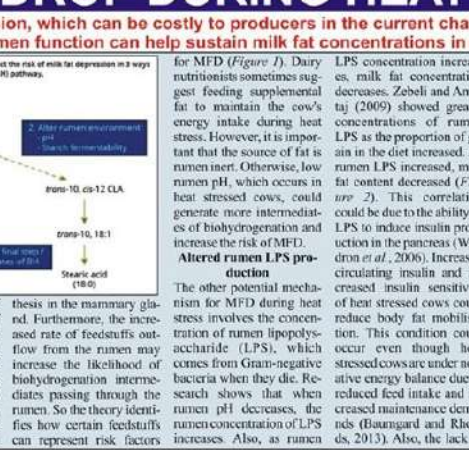
**Milk fat synthesis depends on fatty acids from 2 sources:**

1. **Long-chain fatty acids** (greater than 16 carbons per molecule) derive from the uptake of circulating preformed fatty acids, dietary fat absorbed from the digestive tract, and non-esterified fatty acids (NEFA) from the mobilisation of body fat reserves.
2. **Short-chain (4 to 8 carbons) and medium-chain (10 to 14 carbons) fatty acids** originate in the mammary gland from de novo synthesis (fatty acids created 'new' in the mammary from smaller molecules).

The 16-carbon fatty acids can originate from both sources. For a well-fed cow, an estimated 4% to 8% of milk fatty acids originate from the breakdown of body fat (such as NEFA). However, the proportion of fatty acids from this source would increase progressively as the cow's net energy balance decreases (Bauman and Grinaro, 2001). Under heat stress, there are two potential mechanisms for milk fat depression (MFD). The first one is rumen fatty acid biohydrogenation inhibiting de novo milk fat synthesis. The second one is rumen lipopolysaccharide limiting substrate supply and de novo milk fat synthesis.

**Altered fatty acid biohydrogenation**

According to the well-accepted biohydrogenation theory (Bauman and Grinaro, 2001), MFD results from changes in rumen biohydrogenation of unsaturated fatty acids and the passage of specific intermediates of biohydrogenation out of the rumen (such as trans-10, cis-12 CLA). These biohydrogenation intermediates subsequently interfere with the expression of genes involved in fat synthesis thereby reducing milk fat synthesis in the mammary gland. Furthermore, the increased rate of feedstuffs outflow from the rumen may increase the likelihood of biohydrogenation intermediates passing through the rumen. So the theory identifies how certain feedstuffs can represent risk factors



for MFD (Figure 1). Dairy nutritionists sometimes suggest feeding supplemental fat to maintain the cow's energy intake during heat stress. However, it is important that the source of fat is rumen inert. Otherwise, low rumen pH, which occurs in heat stressed cows, could generate more intermediates of biohydrogenation and increase the risk of MFD.

**Altered rumen LPS production**

The other potential mechanism for MFD during heat stress involves the concentration of rumen lipopolysaccharide (LPS), which comes from Gram-negative bacteria when they die. Research shows that when rumen pH decreases, the rumen concentration of LPS increases. Also, as rumen LPS concentration increases, milk fat concentration decreases. Zebeli and Ameerat (2009) showed greater concentrations of rumen LPS as the proportion of grain in the diet increased. As rumen LPS increased, milk fat content decreased (Figure 2). This correlation could be due to the ability of LPS to induce insulin production in the pancreas (Waldron et al., 2006). Increased circulating insulin and increased insulin sensitivity of heat stressed cows could reduce body fat mobilisation. This condition could occur even though heat stressed cows are under negative energy balance due to reduced feed intake and increased maintenance demands (Baumgard and Rhoads, 2013). Also, the lack of plasma NEFA, potentially an important precursor for milk fat synthesis under heat stress (Bauman and Grinaro, 2001) may contribute to MFD. Other reported negative LPS effects on fatty acid production include: Decrease in activity of lipoprotein lipase (Lopez-Soriano and Williamson, 1994), decrease in expression of lipoprotein lipase and fatty acid transport protein 1 (Feingold et al., 2009) and suppression of enzymes related to de novo fatty acid synthesis in the mammary tissue (Dong et al., 2011).

**Optimising rumen function during heat stress**

Research to date helps explain how MFD during heat stress relates to depressed rumen health. Given this relationship, optimising rumen function could help maintain milk fat content and production efficiency of dairy cows under heat stress. Heat stress causes physiological and behavioural changes in dairy cows. These changes can lead to suboptimal rumen conditions, resulting in production of fatty acid biohydrogenation intermediates and LPS that inhibit milk fat synthesis in the mammary gland. Today, natural digestive health technologies are available to help optimise rumen conditions through the diet, thereby helping to reduce the negative impact of heat stress on milk fat and maintain the production efficiency of high-producing dairy cows. References are available on request.



The Weekly **Veterinary News & Views** **FD # 56**  
 Faisalabad

Editor in Chief: **Dr. Khalid Mahmood Shouq**  
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 Executive Editor: **Zaeshan Khalid**  
 Vol. 14 **08 - 15 May 2019 Rs. 150/- Page 10 Issue No. 26** **ABC Certified**

# CAN MILK BE AN ANIMAL HEALTH INDICATOR?

The research is done by **Wageningen Livestock Research** in the Netherlands, in collaboration with **Delta Instruments**. The researchers want to know if the mid-infrared (MIR) profile of the milk of cows, at the start of lactation, can be used as an indicator of metabolic status, and be used as a predictor for longevity.

**Metabolism changes during early lactation**  
 The incentive to look at

milk samples, collected during the early lactation, is because a range of problems (such as mastitis and lameness) can be scored back to the early lactation of the dairy cows. During this period of the lactation, the metabolism changes and due to the breakdown of body fat, elevated levels of non-esterified fatty acids (NEFAs) and the ketone body beta-hydroxybutyric acid (BHBA) are found in the blood. At the same time, the glucose

concentration is lowered. It is possible that comparable changes can also be found in the milk profiles, and these profiles can be related to the health and the life span of the cow.

**Data from week 3 and 4 post calving**  
 The project started in 2018, and the practical part of the project has been finished at the Dutch research farm 'Dairy Campus'. Milk and blood samples have been collected from 400 dairy

cows in week 3 and 4 post calving. Also data on milk production, disease and fertility have been taken during these weeks. The milk samples are analysed by Delta Instruments with regard to the MIR profile. The blood samples are analysed by Wageningen University & Research for NEFA, BHBA and glucose levels.

**Tools to better manage transition cows**  
 The aim of the project is to see whether the composi-

tion of milk reflects the metabolism of the cow at that time and gives the farmer more insights on the predicted life span of the cow. This type of information helps the dairy farmer to better manage transition cows and to increase longevity of the herd. The results of the project are expected to be made public at the end of 2019.

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## UVAS, IBRAHIM POULTRY TRADERS SIGN MOU TO ENHANCE COOPERATION FOR THE DEVELOPMENT OF POULTRY SECTOR

Lahore: The Department of Poultry Production of the University of Veterinary and Animal Sciences Lahore and Ibrahim Poultry Traders (IPT) signed a memorandum of understanding (MoU) to enhance cooperation for the development of poultry sector.

Vice-Chancellor Meritorious Prof. Dr. Talat Naseer Pasha and Chief Executive Ibrahim Poultry Traders Dr. Habib-ur-Rehman signed the MoU while Chairman Department of Poultry Production, Prof. Dr. Athar Mahmud also present at the UVAS Ravi Campus Pattoki on Thursday.

Under the MoU, both the organisations would organise



Ibrahim Poultry Traders (IPT) will allow Ibrahim Poultry Traders (IPT) to utilize the facilities of labs, lecture rooms and model farm for training programmes. UVAS will provide training and technical sessions for the employee of

graduate students in terms of paid internship leading to jobs and provision of day-old chicks and feeds etc for conducting research project at UVAS. IPT will be called as a guest speaker and highlighted as financial supporter in technical trainings, workshops and international conferences arranged by UVAS Department of Poultry Production. IPT would construct compost bin at their facility for the disposal of dead birds/waste in the best interest of industry and environment.

Speaking on the occasion, Vice-Chancellor Prof. Dr. Talat Naseer Pasha emphasizes to enhance industry and academia linkages for

the promotion of poultry production in the country. He said that the UVAS is closely working with the industry for quality education and research. He said that at the university, has unique poultry set up, disease diagnostic facilities and poultry farms for the training of its students. He mentioned the majority of poultry industries owners are graduates of UVAS. He said the university developed high technology lab which are conducting amino acid analysis of feed and foodstuffs at Ravi Campus for the poultry industry.

**AGRI TOURISM DEVELOPMENT CORPORATION OF PAKISTAN**

## WEEKLY REFLECTIONS: LOOKING FOR OPTIMAL SOLUTIONS

We must realize the fact that it has taken much time for the nation to reach at this juncture where every discussion starts from in mere problems and ends in severity of those problems. None else but we are adding problems the chief among them is problem driven approach

BY DR ABDUL SABOOR

This is quite an alarming situation in the country that individual and collective brains of our intelligent people have been indulged in identifying problems and issues of multifarious character rather than looking for the optimal solutions of those socio-economic problems. Either consciously or unconsciously we are importing a dangerous 'latent' to our youth to shape them to be highly critical on others' deeds and activities. So, their intellectual eye never catches ninety nine good things in a person or in a system but they quickly identify a single odd thing and start crying for its threat to the society. We all forget that creating a type in an economy system is more dangerous than the issue itself which we are highlighting just for gaining popularity. 'Making a mountain out of a mole hill' has become the typical character of many of the stake holders in the public and private organs of the state. Simple issues of economic, social and political nature are so vehemently highlighted as if some war like situation has been created in the country. This is observable in every domain of domestic and public life.



Dr Abdul Saboor is Professor of Economics and Dean, Faculty of Social Sciences, PMAS Arid Agriculture University, Rawalpindi.

ways and means of solving the problem. This is a universal practice that when paradigm of any official and public meeting is diverted towards resolution and solution, constructive ideas come up. A messy governance environment is thus converted into good governance system.

Another important recipe is in respecting all the state organs and institutions. If we are not expert in a particular field, we have no right to criticize the functions of any person or any state organ. It looks odd for a politician to pass judgment against military and bureaucratic establishment and vice versa. Judiciary should not be at the guns of criticism on the part of bureaucrats, journalists, and politicians. We should not come out of our boundaries and jurisdictions. Right persons should do his job in right place. Economist should not try to be politician. Politician should not try to be bureaucrats. Honorable judiciary should run its affairs independent of the whims of politicians and bureaucrats. When every state player would concentrate on his job positively, most of the problems would automatically be evaporated.

A surveillance system should be established by the federal and provincial governments to keep an eye on the public and private statements of all the state actors and key stakeholders. A standard protocol may be designed for that surveillance system in which ethical codes of conduct can be defined. If anyone is continuously talking the issues and problems, some of which may be right or wrong, he is liable to give solutions of those problems. We must learn the universal lesson that a single person is not the cause of a problem, rather the construction of a state system may be carrying some 'manufacturing faults' which need to be addressed through solution oriented strategies rather than problem driven approach.

There is no problem in the world the solution of which could not be sought. Majority of the social, economic and political problems keep a solution within the respective nature of problem. But there might not be any solution until we continue indulged in singing songs of problems and that too loudly. This 'musical chair game' should be stopped now. We may make a pledge for the search of optimal solution of our national problems rather than piling those by repeating the same again and again.

**Dr Abdul Saboor is Professor of Economics and Dean, Faculty of Social Sciences, PMAS Arid Agriculture University, Rawalpindi**

## MODERN FOREST PARK PLANNED AT LAL SOHANRA

Bahawalpur: The Punjab government plans to develop a state-of-the-art forest park on 89 acres with Rs330 million at Lal Sohanra National Park, about 35 kilometres from here.

This was announced at a meeting presided over by Commissioner Nayyar

Iqbal on Friday. At a review meeting participated in by Forests Conservator Javed Gill, Development Director Nosheen Malik, Additional Deputy Commissioner (Revenue) Rizwan Qader, City Assistant Commissioner Rabia Sial and others, it was stated

that the proposed forest park would be provided natural habitat for the conservation of wildlife to convert it into an attractive recreational centre. For this purpose, a botanical garden, natural environment for birds and animals and recreational arrangements of international standards have been proposed. Forest department officials stated that out of the 89 acres, 30 acres could be covered with trees and 20 acres reserved for the botanical garden.

The park may also have a jogging track, swings and a gymnasium.

However, the officials concerned could not inform the meeting about when the details of the proposed forest park could be thrashed out and its PC-1 prepared.

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## SETTING STANDARDS IN MEDICINE PRODUCTION FOR ANIMALS

Though one can trace the history of medicine production for humans, there is no record as to when the need was felt to make medicines for animals.

It is said that it were the shepherds in the Middle East who started making medicines for their sheep, camels, horses and dogs. In India, during Emperor Ashoka's era, two types of medicines were produced from local herbs, one catered to people and the other to animals.

Before medicines for animals were produced, people used to treat their pets and farm animals by giving them in various foods. Horse and miltch animal keepers used herbs to cure infections.

In was in the 18th century in Europe that proper manufacturing of medicines for animals began, though, it became an industry only recently.

A number of industrial units were set up, which not only provided the much needed



medicines for animals but also became a source of employment for people with the relevant skills.

The process is very similar to other medicine production. In the first step, raw material is purchased from the open market in Karachi and Lahore. This material is then shifted to industrial units where veterinary experts prepare a formula under which medicines are manufactured to treat various diseases, including stomach problems and infectious diseases.

After getting the raw material from the open market, the veterinary firm checks its quality in the laboratory. In Islamabad, the manufac-

turers also procure herbs and chemicals in powder form and other imported ingredients.

The workers then hand over the raw material to the laboratory assistants to weigh chemicals and test them, and in the presence of a quality control supervisor, different ingredients are added to the mechanical mixture. Special containers made from stainless steel are used to mix chemicals and herbs.

After mixing them for an hour, the quality control department again checks the powder to see if the mixture is in line with the formula. 'We use a reverse osmosis water purification technology for injections,' Moh-

ammad Khan, a supervisor in the veterinary medicine industrial unit, told Dawn.

In the end, medicine which is in powder form is filled in containers and packets of 500 grams and 1,000 grams while the liquid medicine is poured into bottles and jars through specially-designed pipes and then labeled.

The bottles are then packed into boxes under strict quality control and delivered to veterinary chemist shops.

Though there are many workers involved in the process, their role is limited to handling the machinery and testing the product to ensure its quality.

Dr Israr Shah, an owner of an industrial unit in Islamabad, said the unit produced the product from the market and after testing it, quality medicine is produced for the animal.

He said in his factory, 50 laboratory tests were conducted to ensure that the quality was as per the standards of the health department.



## VALUABLE BIRDS CONFISCATED FROM PET STORES IN ISLAMABAD

Islamabad: The Islamabad Wildlife Management Board (IWMB) raided two pet stores and confiscated more than a dozen valuable birds.

The routine raids on stores in Bazaar Khas and Dargahla resulted in the recovery of eight chukars the national bird of Pakistan, two black partridges, three grey parakeets and three ring-necked parakeets.

IWMB field officer Zaheer Khan told Dawn on Sunday that the birds were confiscated because the owners of the stores were found to be selling them in the open market, which is prohibited by the Islamabad Wildlife Protection Ordinance.

Chukars and black or grey partridges may be kept as pets, with licenses issued by wildlife departments, but trading in them is against the law. Trading in ring-necked parakeets is also restricted under the ordinance, and it is also illegal to keep them



as pets.

Mr Khan said that black and grey partridges and chukars can only be acquired from breeders, particularly in Punjab, after fulfilling the licence conditions set by the provincial wildlife department. 'Breeders are not permitted to trade in these unique birds within the territory of the federal capital under the law,' he added.

Ring-necked parakeets are found in H-8, H-9, Shakarparian and the outskirts of Islamabad, while black and grey partridges inhabit the Margalla Hills National Park.

Mr Khan said that the partridges will likely be released in the Margalla Hills, while the chukars will be handed over to the Khyber Pakhtunkhwa wildlife department to release them into their natural habitat.

Chukars confiscated from poachers a few months ago were released by the Punjab wildlife department into the Margalla Hills, which is not their natural habitat. Mr Khan said that releasing wild birds into habitats other than their natural envi-

ronments puts their survival at risk.

The IWMB officers have filed their paperwork, but action has not been taken against the owners of the pet stores so far.

IWMB suggests ticketing Margalla Hills National Park According to APP, the IWMB has suggested ticketing the Margalla Hills National Park to overcome a shortage of resources.

The Margalla Hills are visited by a number of nature enthusiasts and hikers, and such a step could help generate revenue to preserve such sites.

IWMB Assistant Director Salehahat Ali said entry tickets priced at Rs5 to Rs10 for the national park was suggested at a board meeting.

Despite a budget of Rs16 million, it has been difficult for the IWMB to manage the national park, which is spread over 17,000 hectares.

Entry tickets would help generate a supporting source of income to provide citizens with better facilities when they visit the park, he said.

IWMB also receives some financial assistance from donors who send money to its private account. Mr Ali said the government also gives some funding to keep the cogs in the IWMB management moving.

He said this is a holistic plan that includes a toll charges proposal for vehicles entering the national park through Daman-i-Koh.

He also said an entrance fee would discourage visitors who do not respect the environment, ecology or society, adding that there have been various complaints from park visitors and tourists of misconduct.

He added that unless the board tries to generate income it will be difficult to provide quality services and facilities at the national park.





**DEPARTMENT OF POULTRY PRODUCTION  
DISTRIBUTED IMPROVED CHICKEN BREED IN WOMEN**

Lahore: The scientific team working in the Department of Poultry Production, University of Veterinary and Animal Sciences, Lahore has developed an improved indigenous chicken crossed by crossing Naked neck chicken, Black Australorp and Rhode Island Red. The improved genotype has the potential to lay more than 200 eggs per year with average egg weight of 54 g. This high egg potential chicken genotype can easily acclimatize to local harsh environment. Women empowerment through backyard poultry farming is among the top priorities of the Government of Pakistan. Keeping in view, the Department of Poultry Production distributed the improved local backyard type birds (UVAS BARN CHICKEN) to the women of nearby villages in Patioki. Prof. Dr. Talat Naseer Pasha S.I. (Vice Chancellor, UVAS) appreciated the efforts of Department and emphasized on expanding the outreach of this project. Further it was discussed to build a policy having the concept, "One hen per family member" to help alleviate poverty and reduce hunger among our masses.



UVAS  
Women Empowerment Through Backyard Poultry Farming  
Distribution Ceremony  
National Indigenous Chicken  
May 4, 2019  
Prof. Dr. Talat Naseer Pasha S.I. (Vice Chancellor, UVAS) appreciated the efforts of Department and emphasized on expanding the outreach of this project.

**GCRF PAKISTAN FOOD SECURITY WORKSHOP, SWANSEA**

Swansea University hosted a two-day (30th April-1st May 2019) Food security GCRF workshop together with UK Pakistan Science and Innovation Global Network (UFGIN). Over 30 senior scientists from top UK universities, research institutes and industry partners took part in the discussions. A similar number of scientists and academic colleagues from various Pakistani universities and research institutes joined the discussions through a video link. Prof Tariq Butt who leads the Biocontrol and Natural Products group at Swansea University was the host of the workshop. Pakistan has a growing population reaching 220 million and a quarter of its GDP is driven from agriculture. Agriculture is the main source of food security, a major source of employment and women engagement. More than 60% of the rural farmers are facing serious threats to food security due to climate change causing the spread of new insect pests and diseases. Pakistan is wasting more than 40% of its products due to post-harvest losses. Mycotoxins cause major safety concern both for domestic consumption and export markets. Another intractable challenge was that of pesticide residues. Over 80% of products may have residues which exceed those acceptable to the EU. The residues not only impact on human health but also affect the export earnings from Pakistan agriculture produce to the EU and other countries. Through a series of discussions, the UK-Pakistani partners agreed to find solutions to specific major food challenges. These included:



Animal Health team, Swansea University



Food Security workshop, Swansea university

- 1) Smart surveillance system for crop pests and disease monitoring and forecast. Using on ground, UAVs, and satellite applications.
  - 2) Smart monitoring of livestock diseases especially those that can also be transmitted to humans (zoonoses).
  - 3) Developing biocontrol strategies and produce biopesticides in Pakistan (growing demand)
  - 4) Addressing the issue of AMR both in Humans and Livestock.
  - 5) Reducing post-harvest losses and addressing the issue of food safety due to mycotoxins.
- The collaborating partners attending the workshop represented the University of Swansea, University of Edinburgh, University of Cranfield, Rothamsted Research, University of Essex, Harper Adams University, Canterbury University, Warwick University, Natural Resource Research Institute, Greenwich University, CABI, From Pakistan side, University of Veterinary and animal sciences (UVAS), MNS Multan, University of Agriculture Faisalabad, University of Sargodha, LUMS, University of Arid Agriculture and University of Punjab. The UPSIGN Secretary-General, Dr. Khalid Mahmood appreciated the efforts from both countries and offered all kind of support to develop consortiums going forward to address the UN Sustainable goals of addressing hunger, poverty, women development and education.

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**NEW TECHNOLOGY KEEPS MILK FRESH FOR 60 DAYS**

An Australian company has developed a world-first fresh milk processing technology with the result being 100% natural milk which remains fresh and safe for human consumption for more than 60 days.



*Cillus cereus*, a common but unwanted spore forming bacterium in milk that produces toxins causing vomiting or diarrhoea. In recent tests it was shown that the milk remained fresh and fit for human consumption at the conclusion of a 91-day testing period when compared to only 14 days for standard fresh pasteurised milk. Naturo's patented processing technology makes it possible to ship, rather than fly, the milk to markets all over the world including Japan, China, Malaysia, Singapore and Indonesia. While the process has been applied to cow's milk only it has the potential to expand to other forms of milk including camel, goat, sheep's milk and more.

**Going for commercial scale operations**  
Naturo is currently seeking investment for a pilot plant in Australia capable of producing 10 million litres of milk per annum. The plant will allow the company to establish commercial scale operations for its own brand of products for the domestic and Asian markets. Naturo has recently received \$250,000 in like-for-like funding from the Queensland Government in support of the technology.

**AAVMC KEEPS FOCUSED ON INCLUSION  
VETERINARY COLLEGES CONTINUE DIVERSITY DIALOGUE**

BY KAITLYN MATTSO

The Association of American Veterinary Medical Colleges continued its work to promote the benefits of and offer blueprints on how to create more diverse and inclusive population within veterinary colleges during its Annual Conference and Iverson Bell Symposium, held March 8-10 in Washington, D.C.

Several sessions honed in on the best practices and strategies to build diverse teams and to how to identify unconscious bias, foster honest dialogue, and enhance the admissions process to consider diversity earlier in the process. The theme of the meeting was "The Science of Building Inclusive Teams."

While the conversations may be shifting, the reason and need for diversity should always be percolating, according to Scott E. Page, PhD, author and professor of complex systems, political science, and economics at the University of Michigan.

"Why we want to be inclusive and promote diversity is (because) we are actually going to get better outcomes (on complex problems)," Dr. Page said during a plenary session. "When you are solving complex problems and dealing with complex issues, diversity gives you bonuses."

You have to be able to talk to everyone, and how are you going to learn that if your classrooms don't look like that?"

Administrators and faculty need to listen to what students have to say around this topic and others, he said.

"You picked us to be in your veterinary program, and we have something to contribute to the conversation. We have real concerns, real ideas, and we can bring something really informative to the table," Coleman said.

**The starting line**  
In the session "Competency Based Admissions," Dr. Jacquelyn Pelzer, director of admissions and student support at the Virginia-Maryland College of Veterinary Medicine, discussed two kinds of admissions: holistic review and competency-based admission. Holistic review is a way of

se time and time again to get the job done with fewer resources and larger applicant pools. We can only meet those challenges of diversifying our student communities through the honest reflection of our practices and learning to dance with those tensions."

Dr. Pelzer reported several items Virginia-Maryland focused on to build diversity into its admission process, such as updating its mission statement to include diversity and inclusion, training admissions committee members and interviewees on that mission and its relation to diversity, and implementing a multiple mini-interview format to assess nonacademic attributes.

"We should have the courage to address the hidden aspect of privilege within our admissions practices



Attendees listen to Scott E. Page, PhD, author and professor of complex systems, political science, and economics at the University of Michigan, at the Association of American Veterinary Medical Colleges Annual Conference and Iverson Bell Symposium, held March 8-10 in Washington, D.C. (Photos courtesy of AAVMC)



Panelists (left to right) Lisa Greenhill, EdD; Dr. Jacquelyn Pelzer; Dr. Jonathan M. Levine; Dr. Keinita S. Rogers; Nancy Watson, PhD; and Jeremy Coleman during the AAVMC session "Critical Dialogues about Exposed Values and Alignment of Artifacts to Build Inclusive Teams in Veterinary Medicine."

Lisa Greenhill, EdD, senior director of institutional research and diversity at AAVMC, has seen the discussion shift during her 20 years working with veterinary academics, she said in an interview with JAVMA News.

"The conversation has changed dramatically. Years ago, issues around cultural competency, privilege, and microaggressions would be far more controversial. Now, if we have provocative speakers, people are more engaged, willing to listen, and they know there is a direct impact on the student, faculty, and staff experience."

**The changing landscape**  
Dr. Greenhill said, during the AAVMC session "Critical Dialogues about Exposed Values and Alignment of Artifacts to Build Inclusive Teams in Veterinary Medicine," that the conversation can always go further. She spoke about the idea of shared values to drive team development.

"Organizational values drive organizational behavior. Our policies, practices, and procedures make us believe organizational behavior is entirely rational, when reality they are a reflection of our values. When your values are clear, your decisions become clear," Dr. Greenhill said.

She suggested some of the following questions for organizations to consider when thinking about values:

- Are diversity and inclusion stated in the mission and vision?
- Are diversity and inclusion a permanent component of strategic planning efforts?
- Are leaders, volunteers, and new staff expected to complete diversity and inclusion training and professional development as a part of onboarding or promotion?
- Are leadership activities

and embrace the value of multiple excellences other than hanging on to our historic perceptions of what merit and excellence looks like," Dr. Pelzer said.

Nearly 400 educators from around the world registered for the conference, which was themed "The Science of Building Effective Teams." The meeting focused on strategies for building diverse and inclusive teams in work environments.

Dr. Pelzer mentioned that most veterinary colleges use a form of holistic review, and while Virginia-Maryland has had luck with the process, the veterinary college is in the process of moving to a competency-based system.

The reason for the change can be partially attributed to a lawsuit, Students for Fair Admissions v. Harvard, that could change the approach to race-conscious affirmative action in college admissions. The suit claims that Harvard University, which uses a holistic review process, discriminates against Asian-American applicants. The suit is likely to go to the Supreme Court.

In addition, Texas Tech University Health Sciences Center, which includes the proposed School of Veterinary Medicine, has agreed to end its consideration of race and national origin in admissions. The change comes after the center came to an agreement with the U.S. Department of Education's Office on Civil Rights earlier this year, according to news re-



Lisa Greenhill, EdD, senior director of institutional research and diversity at the AAVMC, said the conversation has changed dramatically around issues such as cultural competency, privilege, and microaggressions in the nearly 20 years she has been involved in veterinary academia.



Panelists (left to right) Lisa Greenhill, EdD; Dr. Jacquelyn Pelzer; Dr. Jonathan M. Levine; Dr. Keinita S. Rogers; Nancy Watson, PhD; and Jeremy Coleman during the AAVMC session "Critical Dialogues about Exposed Values and Alignment of Artifacts to Build Inclusive Teams in Veterinary Medicine."

Dr. Page does research on how diversity improves performance and decision-making.

He recommended several questions to ask in order to measure diversity, such as: Whom are we hiring? How are we caring people on performance? Whom are we promoting? How are we paying people? Who is winning awards? To whom are I sending emails? Are people comfortable at work? What things do we want to accomplish, and can we get the right people in the room to accomplish them? Diversity may be a consideration for faculty and administrators, but veterinary students are also keen to have their voices heard.

"The conversation about diversity in veterinary medicine is important," said Jeremy Coleman, a student in the Western University of Health Sciences Class of 2023, who is black. "You are going to have clients not only that look like you, but clients who look like all of

onstrate a core set of entry-level competencies needed to be successful in a program and subsequent professional life.

Diversity within the student community at Virginia-Maryland, assessed on the basis of ethnicity, race, gender, and socioeconomic status, has increased from 7 percent in 2009 to 38 percent in 2018, according to Dr. Pelzer. Virginia-Maryland uses the holistic review process.

"If we are not considering diversity from the beginning and we value diversity, we need to think differently," she said. "We are all passionate about doing the right thing, but we compromise."



Panelists (left to right) Lisa Greenhill, EdD; Dr. Jacquelyn Pelzer; Dr. Jonathan M. Levine; Dr. Keinita S. Rogers; Nancy Watson, PhD; and Jeremy Coleman during the AAVMC session "Critical Dialogues about Exposed Values and Alignment of Artifacts to Build Inclusive Teams in Veterinary Medicine."

ports. The office had conducted a 14-year probe into the use of affirmative action in admissions policies at the School of Medicine.

**'It's for inclusive**  
The AVMA Council on Education, which accredits veterinary colleges, took steps to better incorporate and highlight the importance of diversity and inclusion by revising several of its accreditation standards in March 2017. Standard 9 (Curriculum) now states that there should be opportunities for students to gain and integrate an understanding of the important influences of diversity and inclusion in veterinary medicine, including the impact of implicit bias. Standard 7 (Admissions) now states that student recruitment and accreditation practices must be nondiscriminatory.

"Diversity and inclusion are) not an elective. This is core material. It should be core material. This is not a soft skill. This is one of the success metrics for our graduates," said Dr. Keinita S. Rogers, executive associate dean and director of diversity and inclusion at Texas A&M University College of Veterinary Medicine & Biomedical Sciences. Dr. Rogers was awarded this year's Iverson Bell Award for her contributions to advancing inclusion and diversity (see story).



Panelists (left to right) Lisa Greenhill, EdD; Dr. Jacquelyn Pelzer; Dr. Jonathan M. Levine; Dr. Keinita S. Rogers; Nancy Watson, PhD; and Jeremy Coleman during the AAVMC session "Critical Dialogues about Exposed Values and Alignment of Artifacts to Build Inclusive Teams in Veterinary Medicine."

"We cannot afford for our students not to be able to work across the aisle, to work with others, to recognize difference, to embrace difference, and do a great job with difference," she said.

For Dr. Rebecca Stinson, associate director of student support and admissions at Virginia-Maryland, a strong and diverse team includes several attributes: a sense of community, cultural competency, and civility, respect, and engagement.

Cultural competence is best described as understanding the effects of bias on decision-making and developing a strategy to deal with the issues that may arise from that bias. Dr. Stinson said during the "Creating Collaborative and Inclusive Teams" session.

At the conference, the overarching drive for attendees seemed to be not only learning strategies for creating diversity within the veterinary field but also finding ways to keep potential veterinarians engaged and thriving.

Dr. Greenhill said, "We want to create future professionals who will be at their best, and if they're finding off a bunch of nonsense in the classroom or the larger academic environment, that's not going to produce what we are committed to producing."

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**AVIAN KENYA 2019**  
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Kenya is a country in Africa and a founding member of the East African Community (EAC). Its capital and largest city is Nairobi. Kenya's territory lies on the equator and over the East African Rift covering a diverse and expansive terrain that extends roughly from Lake Turkana to Lake Rudolf (and further south-east to the Indian Ocean. It is bordered by Tanzania to the south and southwest, Uganda to the west, South Sudan to the north-west, Kenya has a population of approximately 48 million people in January 2017.

**AGRICULTURE AND FORESTRY** are by far Kenya's most important economic sectors in terms of domestic production and the livestock sector contributes about 12 percent of Kenya's Gross Domestic Product (GDP), 40 percent of the agricultural GDP and employs 50 percent of the agricultural labor force. Total livestock population is estimated at 3.3 million

Exotic cattle, 14 million Indigenous cattle, 36 million chickens, 3.6 million pigs, 27.7 million goats and 17 million sheep, 0.3 million camel & 1.8 million Donkeys. Livestock production also plays an important economic and socio-cultural role among many communities in Kenya. Kenya's chicken population is estimated at 32 million chickens, approximately 80 percent of which are indigenous, while 20 percent are commercial layers and broilers. Other poultry types such as turkey, duck, pigeon, ostrich, guinea fowl and quail are becoming increasingly important.

Annually, the country produces about 20 tonnes of poultry meat worth \$40 million and 1.3 billion eggs worth \$115 million. Milk production in the country includes 4.6 billion litres from cattle, 6.4 million litres from goats and 340 million litres from camels providing an important source of livelihoods to Kenyans.

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