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UVAS REVIEWS ARRANGEMENTS FOR INTERNATIONAL BUFFALO CONGRESS



Lahore: The University of Veterinary and Animal Sciences (UVAS) Lahore at a meeting reviewed arrangements for International Buffalo Congress (IBC) 2019 scheduled for February 18, 2019. Vice-Chancellor Meritorious Prof Dr Talat Nasser Pasha presided over a meeting of IBC subcommittees and reviewed the preparations for the congress. The conveners briefed the meeting on the working of their respective committees. Organizing Secretary Prof Dr Nasim Ahmad gave a presentation on the preparations and informed the meeting that over 360 national and international academicians, researchers, experts, professionals from across the world have registered for the congress. Among them 70 are from foreign countries including China, Sri Lanka, Egypt, India, Bangladesh, Italy, Bulgaria, Iran, Iraq, Nepal, Turkey, UAE, Romania, Argentina, Canada, Columbia, Brazil and USA. The congress is an opportunity to showcase the real potential and traits of the world's best breeds of Pakistani buffalo and there are high prospects of exploring international export market for live animals and products such as buffalo semen. Prof Nasim said National Livestock Show will help in motivating farmers to rear more animals with high milk yields. He said various aspects will be discussed in the IBC regarding sharing of innovative knowledge and research for the enhancement of milk production, socio-economic aspects of buffalo production, buffalo management, physiology, health, reproduction, environmental aspects, genetics and breed improvement, Buffalo Nutrition and feed resources and disease control etc. The IBC 2019 will comprise of oral presentations from international and national invited speakers, poster presentations and pre-congress workshops, milk and beauty competition & livestock show at Buffalo Research Institute (BRI), exhibition and post congress farm tour/ UVAS Ravi Campus, Gala dinner with cultural show and visit to historical places of Lahore etc.

UVAS Ravi Campus, Gala dinner with cultural show and visit to historical places of Lahore etc.

Islamabad: "National Workshop on Sustainable Prevention of Foot and Mouth Disease (FMD)" is held in Islamabad. The purpose is to enhance meat exports from Pakistan. The subject workshop is held under the program of US-Pakistan Partnership for Agricultural Market Development. The purpose of workshop is to bring concerned stakeholders & beneficiaries together to share recent development in FMD control in Pakistan and way forward for sustainable prevention for enhanced meat trade in high demand market. Honorable Minister for National Food Security and Research Mr. Sahibzada Muhammad Mehboob Sultan was the Chief Guest and addressed the concluding session of one day workshop. In Pakistan, livestock sector is the largest sub-sector of agriculture and plays a vital role in the economy. Despite the enormity of animal number, animal health and production are compromised due to presence of Foot and Mouth Disease (FMD), which is a highly contagious viral disease of animals and biggest trade barrier for animals and animal products. The animal losses run in billion of rupees annually apart from stocks unable to compete in the export market. Based on successful demonstration of development of technical framework for control of FMD, Pakistan moved to stage two of global preventive control pathway (PCP) in 2015, which is followed by a six year National FMD Control Program namely "Risk Based Control of Foot and Mouth Disease in Pakistan" 2018-2024 with cost assigned of 6.598 million US\$. The program aims at improving food security and will increase the resilience livelihood of livestock farmers to animal disease threats. This program is country wide and is expected to move Pakistan's FMD control efforts from stage two to stage three. The US-Pakistan Partnership for Agriculture Market Development (AMD) is a USAID funded project which aims to improve the ability of Pakistan's commercial agriculture and livestock sectors to compete in international and national markets. AMD encourages investments in four targeted product lines through grants and technical assistance on livestock development, the ongoing US-Pakistan partnership is being catered through "Creating New Frontiers in Agriculture" (CNFA) under its AMD program. Pakistan's meat exports are currently limited to Gulf Countries in order to expand into other markets like China, Indonesia, Malaysia and Russia Pakistan needs to have an OIE endorsed FMD control program and FMD free zone compartments. This endorsement will expand Pakistan's meat export market to number of countries along with new markets. The Federal Minister said on the occasion that Agriculture Market Development is supporting Pakistan's commercial agriculture through improving the ability of sector to meet both international and domestic demand in fruits, off season vegetables and meat. The Honorable Minister said that the representatives of the development partners, provincial governments and national meat production and processing companies and lead technical experts are participating in the workshop to deliberate and put forth a way forward on control and prevention of foot and mouth disease (FMD) in Pakistan leading to enhanced export of meat. Mehboob Sultan said Pakistan is blessed with huge potential for livestock production and processing. The national herd comprises estimated population of 190 million large and small ruminants and 87 million rural and one billion commercial



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UVAS ORGANISED SEMINAR ON PREVENTION OF DRUG USE IN YOUTH

Lahore: The Character Building Society (CBS) of the University of Veterinary and Animal Sciences (UVAS) Lahore in collaboration with Anti-Narcotics Force Punjab Region and Phoenix Foundation for Research & Development arranged an awareness seminar on "Prevention of Drug Use in Youth" in City Campus Lahore. Prof Dr Noor ul Zaman Rafiq delivered a motivational lecture to UVAS students to tackle this menace of drug abuse in youth in present age. He spoke about the various aspects of drug prevention and treatment, identifying harms from drug use, addiction risk factors, key risk and protective factors for drug and types of drug like (cigarette, opium, heroine, opiates, ice crystal) etc. He also spoke about various steps way forward for the prevention of drug in youth through launching awareness campaign, declaration & poster contests, establishing anti-drug societies, SMS service and utilize electronic media to keep youth away from drugs. Dr Noor ul Zaman Rafiq urged that both the teachers and students could play vital role in sensitizing community to the harmful effects of drug use. A large number of students from different departments of UVAS were attended.

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DIFFERENCE BETWEEN FIBER DIGESTION AND NUTRIENTS ABSORPTION IN RATITES AND IN RUMINANTS

By **AYESHA SHARIF ANJUM**
DVM final year CVAS jhang

GIT anatomy and its function have established that the ostrich is an herbivore like ruminants. An adult ostrich on pasture normally trends to eat at least three times as much dry matter as in relation to the dairy cow. Concentrate which are normally offered to the chicks of ostrich should contain at least 15-20% weight of green forage as reason behind is that green color stimulates pecking.

Many comparisons have been documented on efficiency of fiber utilization as great as ion ostrich when compared to ruminants as cattle and sheep. Normally ostrich is able to utilize more than 60% of the neutral detergent fiber (NDF) fraction of its feed and resulting in excellent digestion of fiber sources such as alfalfa as compare to ruminants.

Normally digestive mechanism for fiber digestion in the ruminant as compare to ostrich is very different, resulting in different feeding programs to meet the respective animal's protein and energy requirements. The ostrich's digestive tract is similar as in chicken, than as in cow. Cattle has a four-compartment stomach (rumen, reticulum, omasum and abomasum), compared with smaller, one-compartment based stomach (proventriculus) in ratite species. The rumen is place where most of the microbial digestion of fiber occurs in ruminants. In small intestine absorption of majority of the essential nutrients such as amino acids, lipids, minerals and vitamins occurs. Microbes leaving rumen provide a protein source to the (host) Fiber degradation in rumen resulting in microbial protein release into the small intestine. Volatile fatty acids (VFA) are normally produced and absorbed through the ruminal wall for energy production. This system of fiber digestion allows the bovine to use fiber maximum.

In ostrich side of forage digestion is totally different from that of bovine. Ostrich has small stomach (proventriculus) which serves as a storage organ and trends to secrete pepsin and gastric acid. There is some fiber digestion in the proventriculus. Fiber digestion in the ostrich normally occurs in the large intestine and in cecum where there is microbial population and a absorption of amino acids, vitamins and minerals occurs in the small intestine. By-pass protein is not very much beneficial for ostrich because there is a limited microbial population in the ostrich stomach. Best ostrich forage alfalfa is inadequate in several essential amino acids for growth. Fiber digestion provide the ostrich a rich energy source of VFA. Large intestine and cecum are capable of absorbing VFAs produced from fiber digestion and these are primary energy sources for bird providing as much as 60 percent of the energy.

Summary
Ostrich can utilize fiber as efficiently as bovine. However, because of quite different anatomy, ostrich does not utilize protein, amino acids, minerals and vitamins etc from fiber as it occurs in bovine.

FOOD FOR THOUGHT!

HUZAIMA BUKHARI AND DR IKRAMUL HAQ

ENDING NON-FILERS REGIME

Tax targets can be achieved if collection is fully automated, tax machinery is overhauled, leakages are plugged and all exemptions to the privileged classes are withdrawn

In his address on January 17, Chief Justice Asif Saeed Khan Khosa said: "There are about 1.9 million cases pending in the country before all the courts put together and to handle such a huge number of cases there are only about 3,000 judges and magistrates available from top to bottom. Successive governments have failed to suitably increase the number of judges and magistrates on account of financial constraints. 3,000 judges and magistrates cannot handle 1.9 million cases even if they work for 36 hours a day."

With the appointment of Justice Asif Saeed Khan Khosa as the 26th chief justice of Pakistan (CJP) on January 18, 2019, there are expectations that much-needed reforms in the judicial system will take place as he has in-depth knowledge of its shortcomings and possesses the desire to address them. After taking oath as the 25th CJP on December 31, 2016, former CJP Mian Saqib Nisar had time and again stressed the need to fix the justice system.

Instead of improving, the situation has further deteriorated. As pointed out by the new CJP, there exists a huge pendency of cases in various courts. In the Supreme Court itself, the total pendency per judge (as on September 30, 2018) was 2,367 cases.

Nothing worthwhile has been done by the judiciary and legislature to bring fundamental changes in the existing exploitative, anti-people judicial structure that is the real problem. A reform agenda for the judiciary, executive or legislature can never succeed without fundamental structural changes.

There is a need to replace the prevalent and disintegrating systems with modern and efficient models that are working successfully in other countries. Since independence, we have failed to reconstruct, modernise and democratise our obsolete state in-



situations. Mere clichés and rhetoric about reforms, which we have been hearing for a long time, won't serve any purpose. Talking about the death of competent judges, delays in the dispensation of justice and huge pendency alone is not enough. These are, of course, symptoms of a very weak system. But where is the prescription that can cure them? Curing the symptoms without removing the root cause of the illness is an exercise in futility. No concrete proposals, executable plans and time frames emerged during Saqib Nisar's tenure. Parliament and successive governments have also never tried to provide an efficient justice system. It is time we are pragmatic about introducing reforms.

The available data confirms that more cases are filed than disposed every month, choking the justice-delivery system. Despite this critical situation, there is no plan to do anything about the problem. No effort has been made to remove the causes of unnecessary litigation and reducing/eliminating the backlog. Our courts are still following outdated procedures and methods whereas many countries have adopted e-systems to file cases and ensure their quick disposal through fast-track follow-ups using the offices of magistrates at the grass-roots levels.

It is pertinent to mention that the Eleventh Finance Commission of India recommended a five-year scheme to create 1,734 fast-track courts (FTCs) for the disposal of pending cases and provided

relative of a judge in India can practice where the judge is serving). Unfortunately, there is no political will in Pakistan to remedy these shortcomings.

An efficient justice system can only be established if efforts are made to produce highly-competent adjudicators at the lower level who are recruited transparently, by a board of professionals and not serving judges, and trained extensively at a centre of excellence or a reputed university. This will help produce competent judges for higher courts in future. All appointments of members in all special tribunals must be made through the same procedure. The chief justice of Pakistan or any other judge authorised by him or committee appointed by him should look into appointments that have already been made on a political basis in these tribunals and incompetent members should be disqualified.

The main aim of judicial reforms should be to eliminate unnecessary litigation and facilitate the smooth running of affairs between the state and its citizens. Once citizens and the state learn to act within the four corners of law, there will be no need for so much litigation. It is painful that the government is presently the main litigant. It usurps the rights of people and then drags poor citizens to court. It is hoped that the apex court, under the new chief justice, will establish a commission to determine the reasons for this morbid state of affairs and find ways to rectify the situation.

In order to put an end to unnecessary litigation, all three pillars of the state: the legislature, the executive and the judiciary will have to work hard in tandem.

The writer is an advocate of the Supreme Court and adjunct faculty at LUMS. Ikram@huzaimaikhram.com Twitter: @dikramulhaq

TYSON FOODS TO BUY BRF'S EU AND THAI OPERATIONS

American multinational Tyson Foods has announced it intends to buy the Thai and European operations of Brazilian agri-food giant BRF S.A.

The transaction includes four processing facilities in Thailand, one in the Netherlands and one in the UK.

It follows the purchase of Keystone Foods in November, and fits with a strategy to expand operations in international markets. Noel White, president and CEO of Tyson Foods said: "In addition to domestic benefits, the Keystone acquisition provided us with a scalable production platform in the Asian poultry market."

"The acquisition of these BRF facilities will help complement and strengthen our presence in Thailand, and provide new capabilities in Europe, enhancing our ability to serve growing global demand for value-added protein."

Donnie King, group president of international for Tyson Foods added: "It's estimated that approximately 90% of global protein consumption growth will occur outside the United States, with 60% of the volume growth coming from Asia over the next 5 years."

"Increasing our international footprint with in-country operations and export capabilities will help Tyson Foods strategically access new markets and better serve the growing global demand for our value-added protein."

The Thai poultry operations include a feed mill, hatchery, breeder farms and contract growing operations supplying live birds for the four poultry processing facilities. These four plants produce a wide range of fresh and frozen, value-added raw and fully cooked poultry products including highly specialized cuts for retail and foodservice customers throughout Asia and other export markets, including Europe. The processing locations in the Netherlands and the United Kingdom are supported by in-house innovation capabilities for developing further-processed chicken products for retail and foodservice customers throughout Europe. Products are sold under GrabitosTM, Hot N' Kickin' Chicken, Speedy Pollo and the Sadia brands, in addition to key customer-owned brands. It is understood Tyson is also in talks to acquire the privately owned California-based poultry producer Foster Farms.

NEW MYCOPLASMA SYNOVIAE VACCINE ENTERS DEVELOPMENT

It follows a similar arrangement between the university and ECO Animal Health for potential vaccines in the field of Mycoplasma gallisepticum. Researchers at the university have concluded preliminary proof-of-concept for both efficacy and safety for the new vaccine.

Peter Lawrence, Non-Executive Chairman of ECO Animal Health Group plc said, "Mycoplasma synoviae is a bacterium that affects predominantly commercial layers and breeding birds worldwide resulting in a 5%-10% loss in egg production and lower egg quality in affected flocks."

UGA Professor Naola Ferguson-Noel, a researcher in the Poultry Diagnostic & Research Center said, "We look forward to working with ECO Animal Health to help further develop this Mycoplasma synoviae vaccine into an approved product."

DIFFERENTIALS OF BOVINE SPONGIFORM ENCEPHALOPATHY (BSE) AND BOVINE RABIES

BY: **BABAR RASHID¹, SAMI ULLAH KHAN BHADUR²** DVM Student¹, Department of Pathology², FVS, University of Agriculture Faisalabad

Introduction

Bovine Spongiform Encephalopathy (BSE) is a disease caused by Prion while Bovine Rabies is a viral disease. Bovine Spongiform Encephalopathy (BSE), commonly known as "mad cow disease", is a transmissible, slow progressive, degenerative and fatal disease that strikes the central nervous system of adult cattle. The causative agent of BSE is an abnormal version of protein normally present on cell surfaces called as Prion (PrP^{Sc}). BSE also has prominent zoonotic importance and in humans it is called as "variant Creutzfeldt-Jakobs Disease" (vCJD). BSE is believed to be caused by eating infected animal tissues such as brain and spinal cord. Whereas Bovine Rabies is an acute, progressive viral disease that causes the inflammation of brain. The causative agent of rabies is lyssa virus which is shed in saliva and mostly transmitted by bite of rabid animals such as dog, bat, cats and ferrets and less commonly transmitted through nursing of rabid cow and eating of rabid animal tissues such as brain. Rabies has prominent zoonotic importance as it has highest case fatality and is transmitted by bite of wild carnivores and bats. Although BSE is not prevalent in Pakistan but there is a project related BSE at Islamabad. Veterinarians should have awareness about BSE because it can be found in near future and is clinically similar to rabies.

Clinical Signs

BSE cattle shows aggressive behavior while bovine rabies appear in dumb form in cattle and cause muscle tremors followed by paralysis. Animals with BSE demonstrate following signs: Aggressive behavior, hypersensitive to sound and

touch, tremors and twitching, abnormal posture, lack of coordination and difficulty in rising from lying position, depression, weight loss and decreased milk production. Animals with Bovine Rabies demonstrate following signs: Anorexia, head pressing, abnormal bellowing, drooling of saliva and difficulty in swallowing, abnormal posture, photophobia, sexual excitement, pharyngeal paralysis and in late signs seizures and widespread paralysis followed by death. The furious form of rabies has clinical similarities, but the clinical course of BSE is more protracted.



Fig1. Ataxic BSE Cow



Fig3. Abnormal Bellowing in Rabid Cow



Fig2. Paralytic rabid cow



Fig4. Drooling of Saliva in Rabid Cow

Gross Lesions

Grossly Encephalitis and degenerative changes (sponge like) occur in brain of BSE animal while brain of rabid animal has encephalitis but congestion and edema can be there in chronic cases. A characteristic spongiform encephalopathy (bilateral and symmetrical vacuolization of gray matter) present most of the time.

Encephalitis and meningitis are common gross lesions of rabies in bovines. It is very difficult to diagnose differentially between BSE and Rabies on the basis of clinical signs and gross lesions as there are no characteristic gross lesions.

Microscopic Lesions

When brain tissue from rabies virus-infected animals is stained with a histologic

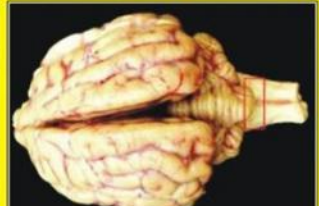


Fig 5. Encephalitis in BSE cow



Fig6. Congestion & edema of rabid brain

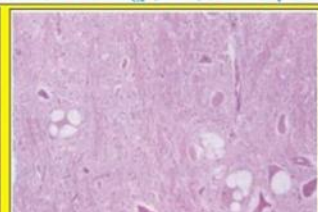


Fig7. Degenerative lesions in cerebral cortex of BSE infected brain



Fig8: Babes Nodules in Rabid Brain

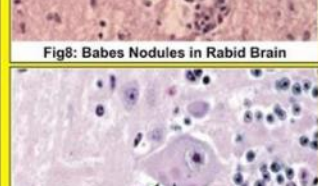


Fig9. Negri bodies in Purkinje cell of rabid brain

stain, such as hematoxylin and eosin, evidence of encephalomyelitis may be recognized by a trained pathologist. Intra-cytoplasmic inclusion bodies (Negri Bodies) and Babes nodules are present in brain of rabid cow. Microscopic lesions of BSE infected brain include degenerative lesions of the cerebral cortex (Fig. 7), medulla and central gray matter of the midbrain. Other microscopic lesions include perivascular cuffing and inflammation around blood vessels.

Diagnosis
Clinical examination does not provide a definitive diagnosis in both BSE and bo-

vine rabies. Diagnosis can be confirmed only on the postmortem histological examination of brain tissue. Histologically if Negri Bodies are seen in Purkinje cells of cerebellum brain then diagnosis is declared as rabies and can be further confirmed by PCR and if degenerative changes appear in cortex and vacuolization appears then diagnosis is tentative for BSE. Confirmatory diagnostic methods in case of BSE are histopathology, electron microscopy and immunohistochemistry which are performed on the hindbrain of animal and after detergent extraction, for scrapie-associated fibrils to detect abnormal PrP^{Sc} while for rabies there is only PCR which is reliable.

Discussion
BSE is a disease caused by Prions while Bovine Rabies is a viral disease but both diseases hit the central nervous system of adult cattle. It is very important to differentially diagnose between BSE and Rabies as both diseases have more or less same clinical picture. The furious form of rabies has clinical similarities, but the clinical course of BSE is more protracted. Diagnosis is only confirmed by histological lesions and lab diagnosis. If intra-cytoplasmic inclusion bodies (Negri bodies) are seen in Purkinje cells of cerebellum of infected brain tissue then rabies is confirmed and presence of babes nodules further strengthen the confirmation in diagnosis of rabies. If there are degenerative changes in the cortex of brain and vacuolization then we can suspect it as BSE but for confirmation we have to do other lab tests like immunohistochemistry and electron microscopy.

GUR MELA HELD AT THE UNIVERSITY OF AGRICULTURE FAISALABAD

UAF VICE CHANCELLOR DR ZAFAR IQBAL RANDHAWA VISITED DIFFERENT STALLS OF GUR MELA AT THE UAF.

Faisalabad: The University of Agriculture Faisalabad has staged three-day Gur Mela at its Heritage Museum, Directorate of Farms, UAF from Feb 13 to Feb 15. The event, arranged by UAF in collaboration with Agri Tourism Corporation, comprised cultural foods, agri stalls and display of the rural folk in order to attract the people towards our rich culture and traditions. The mela remained a center for attractions for locals who thronged the university to have the delight of the colors of rural life and to get refuge from monotonous routine.

UAF Vice Chancellor Dr Zafar Iqbal Randhawa flanked by Director Farm Dr Shahid Afzal Gill, Incharge UAF Books and Magazine Dr Shahzad Basra and Senior Tutor Dr Athar Javed inaugurated the mela. The Vice Chancellor said that agriculture was the backbone of our economy, contributing 20 percent to our economy. He said that after Green revolution, we overcome the hunger issue. But, excessive usage of Genetically Modified Crops provoked



the issue of malnutrition. He showed his concerns that the agricultural import bill has risen to billions of rupees. He said that university scientists had capacity to work the issue to reduce the import bill.

He said that the university was used to hold such event to promote our culture, tradition and food etc. He said that such infotainment platform provided an opportunity to learn in entertaining way. He urged the youngsters to minimize uses of the gadgets in their free time and to spend time with elders, parents so that they can learn from their experiences.

He said that UAF management will disburse 800 head-

scarves among the females on Feb 14 as Sister Day in order to promote eastern culture. Dispelling misconception about the Sister Day, he said that university did not compel anyone to wear headscarves or celebrate Sisters' Day. It is students' choice whatever they like. He said that headscarves will be distributed by university management.

He said the concept of dappata was a beautiful manifestation of culture for women in eastern societies. Our purpose is to empower our women and ensure a congenial environment for females in our institutions so that they can freely utilize their capabilities and life.

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AGRI TOURISM DEVELOPMENT CORPORATION OF PAKISTAN WILDLIFE DEPARTMENT BANS BIRDS TRAPPING, TRADE

BY FAIZA LLYAS

Karachi: The Sindh wildlife department banned on Monday birds' trapping, trade and transportation of all kinds of wild animals, with drawing all trapping permits earlier issued by the department.

'Under the provision of Section 7 (subsections iii and v) of the Sindh Wildlife Protection Ordinance 1972, the hunting and poaching of wild animals (including all kinds of birds) through the use of net, snare, bhagwa, or any other trap is strictly restricted.

'The permits (if any) previously issued by Sindh wildlife department for trapping of any kind of birds are hereby cancelled forthwith,' says a notification.

It also prohibits trade and transportation of all kinds of wild animals.



bag limits.

'This permission issued on a nominal fee was being widely misused and hunters were trapping all kinds of birds, including ducks and parrots, causing serious damage to the ecosystem,' he said.

These birds, he pointed out, were then transported to all parts of the country for illegal trade. To another question, he said the hunting period for partridge (a game bird) was over whereas the shooting period for ducks would end this week.

According to Mr. Mahar, the notification has been forwarded to the director general Rangers as well as police so that they could play their role and help protect wildlife.

The general public, he noted, could also help rescue animals by informing the wildlife department about any illegal activity involving animals.

Sources said that a trapping permit should be issued after population of birds and threats they faced in a specific area had been assessed through a scientific survey.

The department, however, had been allowing people to trap birds without carrying out such an exercise. The record, however, revealed that no data of trapped birds was maintained either by the wildlife department or

by permit holder.

The reasons behind the department's failure in properly executing their responsibility was an acute lack of technical expertise in the department, shortage of staff and funds.

To a question, he said work on all the CPEC projects was going on in a smooth way and none of the CPEC projects is facing delay; rather Pakistan and China are agreed on the future trajectory of the CPEC and timely completion of its ongoing projects.

For future, he said joint efforts are underway, focusing on socio-economic development and accelerating cooperation in industrial development as well as agriculture.

ANNUAL BOOK FAIR 2019 BEGINS AT UVAS

Lahore: The central Library of the University of Veterinary and Animal Sciences Lahore UVAS arranged a two-day annual book fair 2019 in the City Campus Lahore here on Monday.

UVAS Vice-Chancellor Meritorious Prof Dr Talat Naseer Pasha inaugurated the book fair which will continue till Tuesday while Librarian Muhammad Aslam, Prof Dr Asim Aslam, Ms Abeeza Zia and a large number of students, faculty members and book sellers attended.

Total 15 stalls were set up at



the fair and book sellers and publishers displayed a variety of books including livestock, literature, IT, social science and also books stock on relevant fields of Veterinary sciences like Anatomy & Histology, Animal Nutrition, Clinical Medicine & Surgery, Dairy Technology, Public Health, Fisheries, Aquaculture, Food Sciences Human Nutrition, Livestock Production, Microbiology, Parasitology, Pathology, Poultry Production, Wildlife and Ecology, Biochemistry Biotechnology, Pharmaceutical Science, Statistics & Computer Science, Environmental Science and Policy Management etc.

Vice-Chancellor Prof Dr Talat Naseer Pasha visited various stalls and talked to book sellers and students about the significance of book reading. Talking to the media, Prof Dr Talat Naseer Pasha said that books didn't lose their significance even in the age of information and communication technologies.

He said book fair was aimed to provide a platform to promote book reading habit among students, researchers and teachers and it would help increase their knowledge. He said thousands of books are related to veterinary sciences and literature displayed in the fair and students can get maximum knowledge from these books.

A large number of faculty members and students from various departments visited the book fair and showed their keen interest in different books.

What are the actors that affect feed intake, digestibility, and utilisation of feed nutrients in cattle? And moreover, how can they be influenced? 7 factors are listed here.

PAK-CHINA CO-OP IN AGRICULTURE TO BE EXTENDED UNDER CPEC



Islamabad - Pakistan and China have decided to expedite cooperation in the field of agriculture under China Pakistan Economic Corridor (CPEC) and an important meeting in this regard is expected to be held next month, an official in Ministry of Planning, Development, and Reforms said.

The official said that the cooperation was being extended with a special focus on boosting cooperation in the areas of climate change, desertification control, desalination, water management, afforestation and ecological restoration, wetland protection and restoration, wildlife protection, forestry industry development, disaster management and risk reduction and other areas of mutual interest.

'A sub group of CPEC agriculture sector has been elevated to a full-fledged joint working group and its meeting is planned to be held next month,' he added.

Meanwhile, he said that a team of Chinese Socio-Economic Development experts was visiting Pakistan in the last week of current month to finalize the projects and their sites in already agreed six different areas under China Pakistan Economic Corridor (CPEC) including health, education, water supply, vocational training, poverty alleviation and agriculture.

To a question, he said work on all the CPEC projects was going on in a smooth way and none of the CPEC projects is facing delay; rather Pakistan and China are agreed on the future trajectory of the CPEC and timely completion of its ongoing projects.

For future, he said joint efforts are underway, focusing on socio-economic development and accelerating cooperation in industrial development as well as agriculture.

7 FACTORS THAT INFLUENCE INTAKE AND DIGESTIBILITY IN CATTLE

What are the actors that affect feed intake, digestibility, and utilisation of feed nutrients in cattle? And moreover, how can they be influenced? 7 factors are listed here.

1. Overfeeding
Cattle are adversely affected by overfeeding and often show symptoms of bloat, indigestion, and acute distention or impaction of the stomach. Also, bacterial species such as Clostridium welchii are normally found in the intestinal contents of animals under overfeeding conditions with excessive toxin production in the intestine, the absorption of which produces the disease. In dairy cows that are overfed with recent breeding production is desired, such symptoms of digestive disorders appear suddenly with a resulting drop of the milk yield. Ketosis may also occur in heavily fed animals as they become unable to complete the oxidation of fats in the body. The incomplete oxidation products (ketone bodies) accumulate in the blood and adversely affect body condition and milk quality.

2. Underfeeding
A long-continued deficiency of vitamins and minerals usually leads to the development of the so-called nutritional diseases which can cause irreparable damage and must be avoided. A deficiency of other factors, such as moderate energy or protein deficiency, tends to retard growth but is not particularly harmful if not continued too long, especially if the animal is neither pregnant nor expected to produce offspring. In breeding animals, however, underfeeding greatly decreases their normal reproductive activity. The underfed female may not come in heat regularly, and if she does become pregnant the young may not be carried to term, or if born, will probably be weak and unthrifty.

3. Feed processing
Grinding often improves feed intake and may also add metals to the feed. It was found, for example, that grinding of citrus pulp by Wiley mill significantly increased iron, zinc, copper, sodium, and manganese in the form of finely pulverised metals which feed intake decreased than the same elements inherently present in the feed. Grinding may, in some cases, adversely affect digestibility but to a varying extent depending on the degree of fineness. Dry matter digestibility of hay that was ground coarse, medium fine, and very fine was decreased by 3.2%, 7.6%, and 15.1%, respectively compared to hay fed in the long form. The coarsely-ground hay is not only more digestible but is also more palatable. In addition, it allows a longer time of rumination, larger amounts of saliva produced, and a higher acetate-to-propionate ratio in the rumen which is particularly important for dairy cows since acetate is the main precursor of milk fat synthesis. Heat treatment of other feeds was found to be beneficial, particularly in the cases where ingredients such as cottonseed or soybean are incorporated into the ration. Heating of such ingredients at 140-150°C for 2-3 minutes leads to the destruction of the natural toxins and inhibitors present in the feed (free gossypol in cottonseed and trypsin inhibitors in soybean) and hence improves their nutritional value.

4. Feeding frequency
When feeding animals 5-6 times per day, there will be a stable pH in the rumen at

levels ranging from about 5.5 to 5.8, but when feeding for only 1-2 times per day, the pH value will, in this case, vary from about 5.1 to 7.1 within the same day. With a stable pH value in the rumen, digestibility of dietary fibre will be increased due to the increased microbial activity in the rumen which results from the increased energy level needed for such an activity (the rumen ATP concentration is 2.5 times more under high-frequency feeding compared to the low-frequency feeding). Also, the high-frequency feeding decreases the amount of ammonia produced in the rumen following digestion of protein, indicating low rates of degradation and high rates of non-degradable protein which is used for the productive purpose. The increased ratio of non-degradable protein relative to the degradable protein in the rumen is probably attributed to the increased rate of passage of digesta from the rumen with high-frequency feeding thereby allowing insufficient time for degradation.

5. Environmental factors
Several environmental factors can influence the feed intake in animals, such as heat stress, rain, noise, and high altitude.

6. Animal factors
Several animal factors can influence the feed intake in animals, such as age, pregnancy, and level of exercise.

7. Diseases
A study was conducted to quantify feed intake decrease and associated milk production losses related to health disorders in dairy cows. Feed intake was reduced by 6.714 kg DM under disease conditions such as diarrhoea, mastitis, ketosis and milk fever with a 1.94 kg milk yield loss per kg DM intake decrease. External parasite infestation for example can adversely affect the protein status of the animal. Assuming an animal is infested with 200 ticks, then on a daily basis, the animal may lose 200ml of blood or 40g protein (assuming blood is 20% protein). An increase in requirements for a protein of 40g could be met by feeding 150g cottonseed meal or from the microbial protein produced in the rumen from 250g of digestible carbohydrate. The requirements for amino acids is, therefore, increased by parasitism and cattle will be more imbalanced for their nutrients during and sometime after treatment for parasites. Protein depleted animals are likely to produce more heat and the ME utilisation will be decreased. The effects of internal parasites on cattle will vary with the severity of infection as well as age and stress level of the animal. The internal parasites affect feed intake by animals to a varying extent depending on the magnitude of infestation. Such a

INT'L CONFERENCE: IIUI RECTOR SAYS TECHNOLOGY TODAY'S GOLD MINE

As many as 80 national and international experts and researchers gathered on Thursday at International Islamic University Islamabad (IIUI) to discuss advancements in biotechnology and biocomputing in an international conference.



The 3-day long conference is organized by the department of biological sciences of faculty of basic and applied sciences (FBAS) of IIUI. The participants will keep delivering lectures for three days in various sessions of the conference on topics such as DNA vaccine against tuberculosis, multi-drug resistance, enhance production of antifungal compound through genome intervention, exploring genes network of lungs cancer's NGD data using advanced bioinformatics techniques and other relevant topic. Speaking at the conference, Dr. Masoom Yasir, Rector COMSATS University stressed upon implementation of technology in the society for the solution to the problems. He added that advancements have come to the wonder stage of human history and a huge amount of knowledge is being created across the world. He maintained that Industrial biotechnology is the move of the future, universities must trend the incubators to attract industry and produce best entrepreneurs. COMSATS University Rectoropined that knowledge economy is the key to excel in the future. He furthered that role of humanity and artificial intelligence are the aspects to be discussed in present age. He urged the universities to promote and said it is focused on societal benefits. Dr. Masoom Yasir, IIUI Rector said that "technology is the today's gold mine, academic circles are focused to explore them". He added that nations invested in science and technology, are prosperous today. Dr. Masoom noted the need to follow the excellent nations and learn from their experiences. Highlighting the importance of youth, IIUI Rector said that 56 million youth is a precious asset and if it is put on the right track through higher education, it can lead to the pathway of prosperity, stability and progress. Dr. Masoom stressed upon changes in the teaching methods and called for practicing outcome based education to produce best and innovative professionals. He also urged for relevant to the society research and local challenges be addressed through research. He called upon universities to be relevant to the society and find indigenous problems. IIUI Rector said that the GDP dedicated for the education was inadequate as it needs more investment for best results. Dr. Ahmed Yousif Al-Draiwesh, IIUI President said that he was happy to see that there was not a single day at university which would not witness an activity. Said that IIUI has become an emblem of an active contributor in society. "I am happy that IIUI is moving forward in relevant research, activities, discussions and providing solution to the challenges of Muslim world" IIUI President added. Dr. Al-Draiwesh said that universities must introduce youth and societies to changes and advancements in this global village era because it will keep the society in pace of progress. He hailed the faculty and department's efforts to muster a huge number of experts at the event. Earlier, Dr. Asma Gul, Principal Organizer and Chairperson Biological Sciences apprised the participants about the objectives of conference. She also thanked all the experts for attending the event. The inaugural session was also joined by IIUI Vice President Dr. Aqdas Naveed Malik, Dean FBAS, Dr. Arshad Zia, Chairman Biological sciences male campus, Dr. Asif Mir, Dr. Abdul Hameed, Dr. Shaheen Shehzad, Dr. Bashir Ahmed, other faculty members and relevant officials, the conference will conclude on Saturday.

BREAST CANCER HAS BECOME A MAJOR HEALTH HAZARD AS MORE THAN 40,000 WOMEN DIE OF THIS DISEASE EVERY YEAR

Faisalabad: Breast cancer has become a major health hazard as more than 40,000 women die of this disease every year, said Dr. Omer Aftab Chief Executive Officer Pink Ribbon. He was addressing an awareness session on Breast Cancer in Faisalabad Women Chamber of Commerce & Industry (FWCCI). He told that Breast Cancer is spreading at a much faster pace in Asia. In Pakistan its prevalence is alarming as around 38.5% women are infested with this disease. He told that no doubt it is a deadly disease but we could avoid deaths due to Breast Cancer by taking necessary prevention and early diagnostic measures. He told that in Pakistan it has become a general practice that patients with breast cancer are brought to the oncologists when they have already touched the last stage of cancer and colonization of cancer cells have taken roots in other parts of body. He stressed the need for early diagnosis of Breast Cancer and in this connection teen age girls should be educated to be vigilant in case of any unusual change they must consult their parents or doctor. Similarly women under 40 years should also ensure regular monthly checkup while annual Mammography is also imperative for women over 40 years of age. Earlier in his address of wel-



come Madam Robena Amjad President FWCCI appreciated the initiative of Pink Ribbon to hold awareness seminars about Breast Cancer and said that it is the most common disease haunting women, worldwide. In Asia, Pakistan has the highest numbers of cancer patients and out of these, most of them are women. She said that prevention is better than cure and one of the major reasons of high mortality rate due to breast cancer in Pakistan is due to illiteracy and lack of proper hygiene. She further said that Women and their families are not aware of the concept of early detection of cancer. Hence, we must sensitise teen aged girls to understand the importance of self-examination. She said that these kinds of awareness sessions should be a regular feature to provide information about this deadly disease. She stressed a comprehensive strategy to discourage this disease so that by 2050 everyone with breast cancer must be able to live a normal life. She said that your beauty is the part of your health, so please take care of it. Rotary Club President Mrs. Yasmeen Zahida appreciated the initiative of Pink Ribbon and said that it is a painful disease and immediate cure of this disease is very important. Dr. Mehr-UN-Nisa chairperson of the Food science Department of the Government College Women University gave a detailed presentation about dietary methods to check Breast cancer. During this Meeting Secretary General Abeer Mall-oob, Executives and Members of the FWCCI were also present. Later Former MPA Dr. Najma Afzal offered vote of thanks while Madam Robena Amjad presented FWCCI shield to Dr. Omer Aftab and Yasmeen Zahida.

GNOMIC SELECTION: A TOOL TO ENHANCE CAMEL MEAT PRODUCTION



Traditionally, livestock is an important part of rural life in Pakistan, in addition to its role in farming and commercial operations. The camel is an important species well adapted to hot and dry environments and is an important food source for Pakistan's desert nomadic communities. However, it has been neglected by scientists for a long time. Because of its unique characteristics, the camel offers an opportunity to provide a reliable food supply in Pakistan and other arid and semi-arid developing countries. With climate change, this is becoming an imperative. To date, a few improvements have been made to breed superior camels for improved meat, milk or other products such as wool and skin. However, developments in genetic technologies over the past 10 years have made it worthwhile to investigate the feasibility of applying these methods to breed camels for improved meat and milk production. The economic growth of a country is often supported by its livestock. This is a significant industry in Pakistan, providing raw materials, food and cash income leading to development of the rural community and to all the people alone the chain that their products are sold on to. As an example of the growing importance of the industry, recently, the Punjab Livestock & Dairy Development Department established a market to supply camel milk directly to retail outlets in Lahore: this will provide financial benefits to an otherwise economically disadvantaged area of the province. There are 20 breeds of camel in Pakistan, and each has their own potential characteristics. Marecha camel is considered the best breed for both milk and meat production in Pakistan, although the Lassi camel is another dual-purpose breed particularly able to thrive in droughts. Because of these species potential, there is an intense need to explore the genetic variation of the camel, and how this variation can be used to improve growth and other important characteristics. Provision of sufficient affordable and nutritious food, i.e. 'food security', is becoming an important global issue due to increasing population of world, even more so with climate change. To solve this issue, there is a need to explore new food resources as well as enhance under-utilized ones. Camel farming will be useful for farmers when there is establishment of proper market, as the recent initiatives by the Punjab government are attempting to address. Camel ranching schemes, identification and classification of superior animals for breeding and further research into camel breeding and management is needed for this livestock industry to grow. This can lead us to exploit this amazing animal as a natural resource to fulfill the food demands of a constantly increasing population. Keeping in view the importance of the camel, the Institute of Biochemistry and Biotechnology, University of Veterinary and Animal Sciences (UVAS) Lahore in collaboration of University of Sydney conducted research to identify specific genes having the potential role to improve camel growth. In this study, we evaluated over 40,000 genes, or more specifically 'genetic markers' in Marecha and Lassi camels to discover significant associations with growth. This is the first time that a comprehensive study has been conducted on camels with the help of very high advanced method known as 'Genotyping by Sequencing'. We identified a number of genetic markers associated with growth but also showed that certain genes operate at different ages of life. These genetic markers will be helpful in the development of breeding programs of the two breeds of camels by allowing the identification of superior animals to serve as future breeding animals.

amounted to \$4.19bn. This meant a food trade balance of \$570m. But in 2016-17, food exports were \$3.71bn against food imports of \$6.14bn. In July-December 2018, foreign sales of food items declined to \$1.93bn as opposed to the food imports of \$3.24bn. Major imported food items are palm oil, soybean oil, tea, powdered milk, spices, dried fruits, soft drinks, flavoured water, juices, chocolate, biscuits and cheese. Pakistan now imports many food items that it once used to export, such as beef, mutton, chicken and eggs. In addition, Pakistan imports fruits and vegetables. These imported items are worth hundreds of millions of dollars every year. It is tragic that local farmers are burning their crops because of low market rates. Despite an abundance of agricultural and natural resources, the country is not meeting the demand for food items. This is intensifying food security challenges. The demand for food is expected to rise in the international market. For instance, in 2016/17, 2.68bn tonnes of grain were produced worldwide. By 2050, additional 1.5bn tonnes will be required to feed the world's growing population. Simultaneously, meat production will increase from 200m tonnes to 500m tonnes. Unfortunately, many educated young people believe that agriculture is an old-fashioned business. What they fail to understand is that agriculture-related businesses have a greater trickle-down effect and create more employment opportunities. Young people should invest their energies, knowledge and skills to achieve higher productivity in agriculture.

The world's population is 7.7 billion. It is expected to be more than 9bn by 2050. From 207 million, Pakistan's population is expected to increase to around 300m by 2050. In addition, the growing trend of urbanisation will continue at an accelerated pace, soon reaching 70pc of the world's population. As per the 1981 census, 28pc of Pakistan's population was urban. But its share soared to almost 37pc in 2017. For the last couple of decades, Sindh has been one of the most urbanised provinces of Pakistan. Its urban population was 52pc as per the last census while those of Punjab, Khyber Pakhtunkhwa and Balochistan were 37pc, 19pc and 28pc, respectively. If the pace of urbanisation remains constant, the food producer will turn into the food consumer, causing a huge decline in agricultural production and an increase in the country's dependency on imported food. Data shows Pakistan's food imports are rising. In 2012-13, food exports were \$4.76bn while food imports

FOOT-AND-MOUTH DISEASE OUTBREAKS HIT CITY'S DAIRY FARMS

Karachi: Foot-and-mouth disease has hit more than 100 dairy farms in the city, most of which are located in Bhains Colony and along the Superhighway, sources told on Friday. Most infected animals severely weakened by the disease, they said, were being sold for slaughtering purposes by farmers to avoid losses.

The World Organisation for Health Animal, however, suggests humane destruction of all infected, recovered and FMD-susceptible contact animals and their safe disposal. "We have recorded FMD outbreaks at 150 dairy farms in Karachi over the past three months. These farms were located in Bhains Colony and along the Superhighway," Dr. Nasrullah Panhwar, National Field Officer of Food and Agriculture Organisation (FAO) for Control of FMD, confirmed the report. Explaining further, he said even if one FMD case was detected, it was considered as an outbreak since it spread very quickly. Responding to a question, he said that while FMD was a severe, highly contagious disease and had very serious implications for animal farming, virus transmission to humans through infected animals and their derivative products was rare. According to him, FMD outbreaks strike city's dairy farms especially those located in Bhains Colony, an area considered a reservoir of foot-and-mouth disease, every winter. But, their intensity has been successfully reduced over the years through a FAO project.

"It wasn't so serious last year, though there were cases. The FAO project carried out from 2001 till 2017 helped us a lot in containing it," he explained, adding that the FAO project had now been renewed with limited funds from the Japanese government. On project's operation, he said it had support from the Sindh government livestock department and farmers were provided with free vaccination service for 100 animals. The rest had to be taken care of by them. "They need to ensure that animals receive a booster dose after a month followed by a dose after every six months," he said, adding that non-compliance with vaccination regime would make animals vulnerable to disease. According to Dr. Panhwar, treatment for FMD is available in the local market which costs around Rs10,000. Once treated, the animal is able to produce milk.

Shaukat Mukhtar representing Dairy Farmers Association said that the FAO project earlier launched greatly helped farmers who shared half of the vaccination cost with the organisation. "But, now the FAO says that the government should come forward and bear half of the cost with us. If this support is provided to us, we can successfully control this disease again," he said. The 2014 FAO data shows that Karachi reported 954 outbreaks of the disease out of the total 1,119 and 2,591 outbreaks occurred from across Sindh and the rest of

the country, respectively. Karachi reported to have the highest viral load of foot-and-mouth disease (FMD) in the country. Experts believed that this was mainly due to commercial dairy farming being practised on a large scale in unhygienic and cramped conditions in the city. During the same year, 362 outbreaks of FMD were recorded in Punjab, while 294 and 151 outbreaks of the disease were recorded in Khyber Pakhtunkhwa and Balochistan provinces, respectively. According to experts, movement of animals is the primary source of transmission, but people can also transmit the virus from one place to another if they visit an infected area and do not change clothes. It is estimated that around 30,000 to 40,000 animals are transported monthly from other parts of the country to the Landhi Cattle Colony which has the largest number of commercial dairy farms in Pakistan. The FMD virus mutates very quickly and any change in its structure makes the vaccine ineffective. Therefore, it is very important to monitor the virus and know its exact sub-serotype. The FMD, at times fatal, affects cloven-hoofed animals, including domestic and wild bovids. The virus causes a high fever for between two and six days, followed by blisters inside the mouth and on the feet that may rupture and cause lameness. It can spread by infected animals comparatively easily through contact with contaminated farming equipment, vehicles, clothing, feed and by domestic and wild predators.

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THE SHOULD INVEST IN AGRICULTURE

BY IFTIKHAR TALPUR

AGRICULTURE is the mainstay of Pakistan's economy. It contributes 18.9 per cent to the GDP and employs 42.3pc of the labour force. The rural economy heavily depends on this sector. The sub-sectors of agriculture, which include minor crops, livestock, fisheries and forestry, have the potential to increase farmers' earnings by ensuring the export of surplus stocks to neighbouring markets. The demand for food in the international market is also increasing. This means farmers have an opportunity to make the economy vibrant by seizing international markets. The world's population is 7.7 billion. It is expected to be more than 9bn by 2050. From 207 million, Pakistan's population is expected to increase to around 300m by 2050. In addition, the growing trend of urbanisation will continue at an accelerated pace, soon reaching 70pc of the world's population. As per the 1981 census, 28pc of Pakistan's population was urban. But its share soared to almost 37pc in 2017. For the last couple of decades, Sindh has been one of the most urbanised provinces of Pakistan. Its urban population was 52pc as per the last census while those of Punjab, Khyber Pakhtunkhwa and Balochistan were 37pc, 19pc and 28pc, respectively. If the pace of urbanisation remains constant, the food producer will turn into the food consumer, causing a huge decline in agricultural production and an increase in the country's dependency on imported food. Data shows Pakistan's food imports are rising. In 2012-13, food exports were \$4.76bn while food imports

amounted to \$4.19bn. This meant a food trade balance of \$570m. But in 2016-17, food exports were \$3.71bn against food imports of \$6.14bn. In July-December 2018, foreign sales of food items declined to \$1.93bn as opposed to the food imports of \$3.24bn. Major imported food items are palm oil, soybean oil, tea, powdered milk, spices, dried fruits, soft drinks, flavoured water, juices, chocolate, biscuits and cheese. Pakistan now imports many food items that it once used to export, such as beef, mutton, chicken and eggs. In addition, Pakistan imports fruits and vegetables. These imported items are worth hundreds of millions of dollars every year. It is tragic that local farmers are burning their crops because of low market rates. Despite an abundance of agricultural and natural resources, the country is not meeting the demand for food items. This is intensifying food security challenges. The demand for food is expected to rise in the international market. For instance, in 2016/17, 2.68bn tonnes of grain were produced worldwide. By 2050, additional 1.5bn tonnes will be required to feed the world's growing population. Simultaneously, meat production will increase from 200m tonnes to 500m tonnes. Unfortunately, many educated young people believe that agriculture is an old-fashioned business. What they fail to understand is that agriculture-related businesses have a greater trickle-down effect and create more employment opportunities. Young people should invest their energies, knowledge and skills to achieve higher productivity in agriculture.