

AVN

Agro Veterinary News

Pakistan's First Independent Agro Veterinary Periodical

Vol. 33 No. 08 / November 2021

Published Monthly | Reg. No. MC-1209 | ISSN 17228-1512 | Rs 100

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PM Imran Khan urges for steps to put agriculture, other sectors in top gear

AVN Report

KARACHI - The Union of Small and Medium Enterprises (UNISAME) has recently advised Prime Minister Imran Khan to take immediate steps to put agriculture, livestock, poultry, dairy farming, horticulture and hydroponic farming in top gear to fight inflation, which is damaging the economic fabric of the country, a statement said on Tuesday.

UNISAME president Zulfikar Thaver urged the prime minister to set up a crops and commodities board for cotton, wheat, rice, sugar and commodities to manage surplus and shortfalls diligently.

Other necessary steps to be taken included an extensive increase in the storage facilities, which is lacking and the development of dehydration and cold storage facilities. Thaver said an urgent need to focus on the fishing industry by modernising boats, launches and ships.

He said that the premier needs to direct the development of import substitution industries and promote industries using indigenous raw materials.

He also demanded the promotion of alternative energy and incentives to the Small and Medium Enterprises (SMEs).

The UNISAME Council also urged the prime minister to allow the export of jaggery, Khaskhas and promote the cultivation of precious herbs, roots and extracts, which are in demand worldwide for increasing exports. It is also stressed to enter into barter trade with Iran and barter rice, meat and fruits for petrol, gas and electricity.

In addition, it is also necessary to declare austerity, and it is high time the Cabinet takes immediate steps to curtail huge expenses.



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AVN Report

KARACHI - Jordan has recently approved three slaughterhouses of Pakistan to export bovine, camel, sheep and goat meat to Amman, revealed a statement issued by the Ministry of Commerce on Thursday.

In comments to The Express Tribune, Employers Federation of Pakistan (EFP) President Ismail Sutter highlighted that Pakistan's meat industry was dynamic, which has evolved rigorously since the 1990s.

The country has continued to show an upward growth trend in the meat industry, he cherished. "Pakistan has recently become a top exporter of camel meat in the world," he said, adding that although the figure was only \$2.6 million, the country had made headway to become a global player in halal camel meat exports.

The development came as the government of Pakistan showed interest in boosting livestock production and processing facilities in the region to meet the rising local and global demand, Sutter said.

Quoting statistics, he said that Pakistan's meat industry had a market of 4.5 million tons in 2019.

He calculated that Pakistan's current meat industry could be somewhere around 4.9 million tons, considering an average growth of 4.9% per annum since the 1970s.

He predicted that the sector would continue to grow in future in light of records, untapped potential and the government's interest in the sector.

Sutter believed that the development allowed Pakistani exporters to open up a new market and use the tremendous untapped

Jordan okays meat imports from Pakistan



potential of the sector.

Federation of Pakistan Chambers of Commerce and Industry's (FPCCI) former chairman of agriculture committee Ahmad Jawad highlighted that Jordan was an excellent market to tap as the country imported around 155,000 tons of halal meat, valued at around \$464 million.

Similarly, Jordan would be a new and easy addition for fresh fruits from Pakistan, he added.

He believed that Pakistan could easily earn Rs90 billion annually by exporting halal meat as the global halal meat market had been projected at \$3.2 trillion by 2024.

Referring to a report, Jawad said that Brazil,

Australia and India were the top exporting countries of halal products. "Not even a single Muslim country falls in the list of top five global exporters of halal products," he said.

However, he added that significant importers of halal products included Saudi Arabia, Malaysia, the United Arab Emirates, Indonesia, and Egypt, which were all Muslim countries.

He said without standardisation; the country would never be able to enhance its export market share.

Jawad believes that Pakistan can become a leader in this sector, especially in halal and processed meat.

He said that Pakistani meat exporters were facing intense competition from other countries like India, Brazil, and Africa, adding that government support for the meat export sector was limited.

"Even the procedures to handle meat exports are troublesome," he said.

According to the Ministry of National Food Security and Research data, the total meat production volume in Pakistan was 4,708 tonnes in 2019-20. Of this, 2,303 tonnes was beef, 748 tonnes was mutton, and 1,657 tonnes was poultry. China remained the largest importer of meat in the world, he said, adding "sky is the limit".



PHC conditionally relaxes ban on chicken export



AVN Report

PESHAWAR - Peshawar High Court bench recently conditionally relaxed the government ban on chicken's transportation to Afghanistan from the province, declaring if its farm rate in Chakwal district goes beyond Rs240 per kg, the export should be suspended.

Chief Justice Qaiser Rashid and Justice Shakeel Ahmad added that the export of day-old chick should continue if it were sold by Rs70 in the local market.

The bench directed the federal government to produce a report about the import and export of soybean, which, the poultry dealers claim, is used to make poultry feed and whose price hike affects chicken rates.

It issued the orders according to the recommendations of a committee of stakeholders, including government officials and representatives of poultry dealers, which suggested linking the transportation of chicken and day-old chicks to Afghanistan with specific maximum prices.

Orders halt chicken supply to Afghanistan if the farm rate goes beyond Rs240 per kg.

The committee has suggested that the farm gate rate in Chakwal, from where most of the broilers are supplied to Khyber Pakhtunkhwa, should be Rs240 per kg, and if the price exceeds that limit, its transportation out of the country should be banned.



It also suggested that the price of a day-old chick should be Rs70 at maximum, and if that limit was crossed, then that chick's export should be stopped.

In Sept this year, the court had vacated a stay order against the transportation of cattle and poultry products to Afghanistan

Poultry in lockdown after Belgium detects bird flu



AVN Report

BRUSSELS - Belgium ordered its poultry into lockdown from Nov 15, after detecting a case of bird flu in a wild duck, extending avian quarantine measures already in place in neighbouring countries.

Authorities are attempting to prevent farm birds from coming into contact with wild migratory ones to prevent the H5N1 virus from spreading.

The sickened wild duck was found in Schilde, a town on the eastern outskirts of Antwerp, Belgium's second-biggest urban agglomeration.

Neighbouring France and the Netherlands have imposed similar poultry lockdowns following outbreaks on their territories over the past three weeks.

Belgium's restrictions require poultry breeders and hobbyists

to keep their birds locked away and ensure they do not drink from water accessible to wild birds.

The public was also urged to notify authorities of any dead birds found.

"We want to avoid this illness infecting our poultry and prevent the sort of harm the sector has suffered in the past," Agriculture Minister David Carnival said.

The national food safety agency said that "the virus currently being transmitted... is not dangerous to humans".

It stressed that poultry meat and eggs could continue to be bought in Belgium.

The European Centre for Disease Prevention and Control says that H5N1 "has shown to be able to transmit to humans," but that such infections from birds were rare.

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For the poultry industry, Avian metapneumovirus (aMPV) is an economic issue globally and has been linked with upper respiratory tract infection and decreased egg production in several avian species. aMPV leads to turkey rhinotracheitis and chicken related to the swollen head syndrome (SHS), which is usually accompanied by a secondary infection that enhances the mortality. Firstly, it was reported in South Africa in 1978 meanwhile then has been observed in several states of the world.

Avian metapneumovirus is also known as Avian pneumovirus infection of turkey, swollen head syndrome, turkey rhinotracheitis and avian rhinotracheitis. Avian metapneumovirus belongs to the family paramyxoviridae and subfamily pneumovirinae.

Subfamily pneumovirus comprises human metapneumovirus and avian metapneumovirus.

Avian metapneumovirus has been categorized into four subtypes, i.e. A, B, C and D, based on amino-acid and nucleotide sequence. As compared to C, subtype A, B and C are closely linked, while subtype C is closely linked to human metapneumovirus.

aMPV is sensitive to lipid solvents, stable at pH 3-9, deactivated at 56°C after 30 minutes, also inactivated by disinfectants, i.e. ethanol, quaternary ammonium, sodium hypochlorite (bleach) and iodophor.

Avian metapneumovirus under negative contrast electron microscopy exposes pleomorphic fringed elements, spherical=80-200nm in diameter and round=500nm or more.

aMPV is a negative sense, non-segmented, enveloped ssRNA genomes. Having eight structural polypeptides such as phosphoprotein (P), nucleoprotein (N), fusion protein (F), matrix protein (M), small hydrophobic protein (SH), surface glycoprotein (G), large RNA dependent RNA polymerase (L) and second matrix protein (M2).

• **P-Phosphoprotein:** it is essential for replication. Assists RNA dependent RNA polymerase attachment and recruits M2 protein.

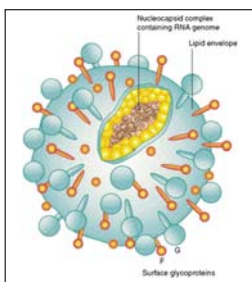
• **N- Nucleocapsid protein:** it is required for viral proliferation and transcription. Its primary role is in the formation of capsids around the viral genome.

• **F-Fusion protein:** Enables fusion among the host cell membrane and virus

• **M1- matrix protein:** Enables the interaction among the nucleocapsid and envelope.

• **M2- Matrix protein:** involved in the regulation of replication and

Avian Metapneumovirus: Prevalence in Pakistan



by Dr Maria Jamil, Dr Muhammad Kashif Saleemi

Department of Pathology, Faculty of Veterinary Science, University of Agriculture, Faisalabad

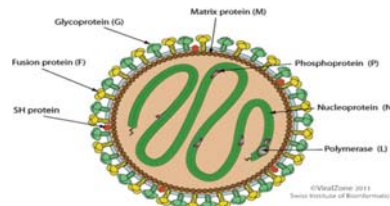
transcription

• **SH-Small hydrophobic protein:** Non-essential.

Recommended to change membrane absorptivity and block apoptosis.

• **G- protein:** required for virus attachment by dealing with glycosaminoglycan.

• **L- RNA dependent RNA polymerase:** Facilitates proliferation.



Pathobiology and pathogenesis:

Chicken and Turkey are the well-known natural host of aMPV. aMPV is transmitted through contaminated water, feed, water, vehicles, aerosol, movement of affected and recovered poult and by the movement of persons and equipment.

aMPV proliferates in the cytoplasm of the host cell. Firstly, viruses bind to a receptor such as HN glycoprotein receptors and express superficially on the cell's surface. Then by the fusion protein activities virus attaches to the plasma membrane of the host and is released from the nucleocapsid. aMPV mainly affects the epithelial cells of the respiratory as well as the reproductive tract. Virus proliferation prompts the ciliostasis, permits the secondary pathogen to penetrate the host. Few aMPV strains may also have transient immunosuppressant capabilities, support the minor infection and decline the vaccination response.

• **Clinical sign of aMPV:**

• **Young poults:** respiratory signs such as nasal discharge, sneezing, rales, snicking, swollen infraorbital sinus, foamy conjunctivitis and submandibular oedema.

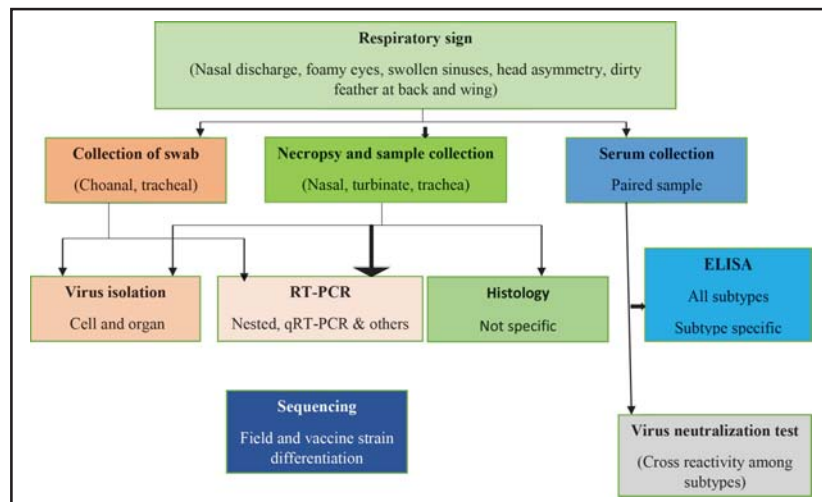
• **Older poults:** Head shaking and coughing are typically detected in older birds. In laying, hen might

be a drop in production, up to 70%, and increased eggshell abnormalities and peritonitis. Coughing, along with the lower respiratory tract involvement,

Airsacculitis, pericarditis, pneumonia, and perihepatitis. In aMPV-infected chickens, significant gross lesions include extensive yellow gelatinous to purulent oedema in the subcutaneous tissues of the head, neck, and wattles. Varying degrees of swelling of the infraorbital sinuses also may be detected. Microscopically observed enhanced glandular action, hyperemia, loss of cilia and at 1-2 days of post-infection slight mononuclear infiltration of the submucosa, disruption of the epithelial layer, in the submucosa copious mononuclear inflammatory infiltration.

Lesions in chicken might be mild and of a short duration than those detected in turkeys.

Diagnostic strategy



causes prolapses of the uterus in breeding turkey.

Avian metapneumovirus infection in chicken is not well-defined and might not be related to clinical symptoms.

aMPV has been linked with the swollen head syndrome in chickens.

• **Swollen head syndrome (SHS) is categorized based on clinical symptoms:** swollen infraorbital and periorbital sinuses, disorientation, torticollis, opisthotonus, normally <4% of the flock is affected; however, respiratory signs are generally present.

Morbidity may reach 100% in all ages of birds, infrequently mortality may exceed 2%, and in broiler breeder, egg production markedly reduced. Eggshell quality is affected in layers. Uncomplicated aMPV infection recovery occurs typically between 10-14 days.

• **Pathology of aMPV in turkey:** Watery to mucoid exudate exist in the turbinates, 1-9 days post-infection, along with excess mucus in the trachea, several reproductive tract abnormalities were also reported, including egg peritonitis, in the oviduct folded shell membrane, misshapen eggs, solid yolk and regressed ovary and oviduct.

Managemental procedure:

- Good biosecurity
- Control of wild birds
- Disinfection of farm and equipment

• **Vaccination strategy:** Live vaccines are usually sprayed or given in drinking water. Live attenuated vaccines have been exposed to produce local and systemic immunity in the respiratory tract. In turkeys, predominantly in chicken, the humoral antibody response is inferior following the primary live vaccine. At the same time, birds are still protected against challenges through cell-mediated immunity in the respiratory tract.

• A high level of maternally derived antibodies does not control the developing clinical infection in the young turkey poults following the virulent aMPV.

• Better cross-protection occur following the vaccine with subtype A and B vaccines, and that vaccine formed from both subtype A and B strains of aMPV will confer the defence against Colorado subtype C strains.

• For the protection of adult birds, the oil-adjuvant inactivated aMPV vaccine is injected earlier primed with the live vaccine.

• Depending on the field pressure

Continued on Page 14

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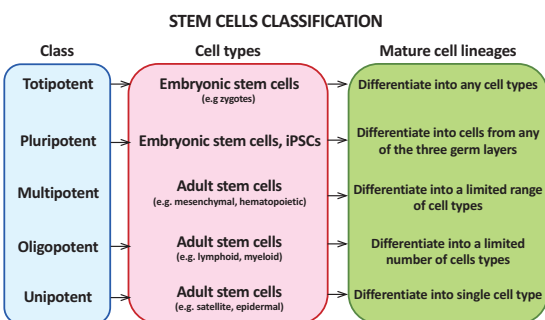
Stem cell therapy and its application in veterinary medicine

by Moiz Ali Younas, Dr Muhammad Kashif
College of Veterinary and Animal Sciences, Jhang

Stem cells are the body's raw materials; they are the cells that give rise to all other cells with specific tasks. Stem cells divide to generate new cells called daughter cells under the right conditions in the body or the lab. These daughter cells either self-renew or differentiate into specialised cells with a more particular role, such as blood cells, brain cells, heart muscle cells, or bone cells (differentiation). No other cell in the body has the potential to produce new cell types on its own.

What is the interest in stem cells?

- Gain a better grasp of how illnesses develop.
 - Replace sick cells with healthy ones (regenerative medicine)
 - New medications are put through their paces to ensure their safety and efficacy.
- Stem cells can be found in both embryonic and adult cells. Specialisation may be broken down into multiple stages. Each stage reduces developmental potency, implying that a unipotent stem cell can't differentiate into as many distinct types of cells as a pluripotent one.
- Totipotent Stem Cells
 - Pluripotent Stem Cells
 - Multipotent Cells
 - Oligopotent stem cells
 - Unipotent stem cells



Stem Cell Therapy: Stem cell treatment, also known as regenerative medicine, uses stem cells or their derivatives to enhance the repair response of sick, dysfunctional, or wounded tissue. It's the next step in organ transplantation, and it relies on cells rather than donor organs, which are in short supply. In a lab, scientists cultivate stem cells. These stem cells are programmed to differentiate into specific cell types, such as heart muscle cells, blood cells, or nerve cells. Following that, the specialised cells can be put into a human. For example, if a person has cardiac problems, the cells might be injected into the heart muscle. The healthy heart muscle cells that were implanted might potentially help to mend damaged heart muscle. Adult bone marrow cells led to becoming heart-like cells have previously been demonstrated to mend heart tissue in individuals, and further study is underway.

In veterinary medicine: Cell therapy is now being used in veterinary medicine. Many clinics are now using autologous or allogeneic

stem cell injections to treat various veterinary disorders, either fresh or grown in the laboratory. The existing research confirms the process's safety and significant improvements to animal health. Understanding how adult stem cells interact with niche chemical cues to trigger cell homing is also being used to discover the processes by which cells are competent or incompetent in mending tissues. As a result, various animal models have been addressed and evaluated for these goals, in addition to direct clinical applications.

The many veterinary methods that use MSC produced from bone marrow or adipose tissue clearly show that this cell, even with the requisite culture and treatment in the laboratory, maybe far more helpful if used in a human clinic. On the other hand, using iPS to create cells with pluripotency potential may be of significant use to veterinary research.

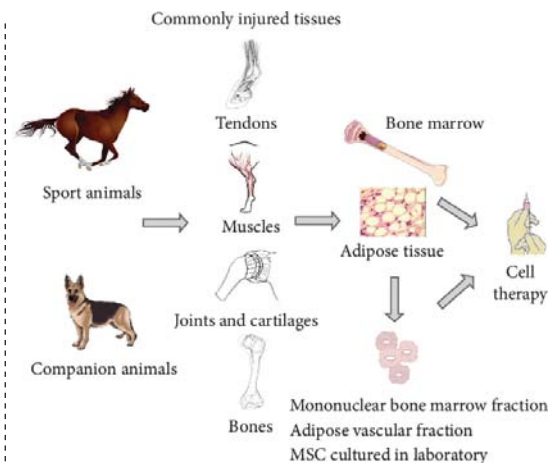
The veterinarian's communication with the laboratory that isolates, cultivates, and prepares cells for application is essential for cell therapy in dogs, cats, and horses. At that time, veterinarians and laboratory specialists must collaborate to determine the optimal course of treatment: directly obtained from the patient (bone marrow mononuclear fraction or SVF) or cultured cells (MSC or ADSC, respectively), autologous or allogeneic donor. Following the selection of the cell type, the specialists coordinate the collecting and shipment of the cells. Suppose the veterinarian chooses to utilise the mononuclear fraction of SVF. In that case, they obtain a lab kit, collect bone marrow or fatty tissue aseptically, and return the material to the lab. Cell isolation takes around 2-3 hours after they are acquired. Due to viability and cell behaviour, it is advised that cells be applied to horses (e.g.) within 24 hours of preparation and that big bored needles be used. Given that the number of separated cells is directly connected to the tissue's size (mass) and quality (either adipose tissue or bone marrow), the quantity used is likewise varied, indicating a lack of species or disease-specific standardisation.

In Sports: It was also suggested that tendon-derived stem cells, which may develop into other cell types such as muscle or fat, could worsen the problematic state and produce chronic tendinopathy.

After 12 months of follow-up, racing horses given 1-4 106 mononuclear bone marrow cells coupled with autologous platelet-rich plasma administered directly into the lesion (identified by ultrasonography) demonstrated muscle regrowth.

Because of its ease of collection and efficacy, bone marrow mononuclear fraction was used in most protocols aiming at administering cell therapy to horses.

In Companion animals: In recent years, there has been a surge of interest in using stem cells as a treatment for a wide range of disorders in domestic animals, particularly those affecting livestock. Although there is a significant disparity in the scientific literature between the alleged



benefits of stem cell therapies and their proven capabilities in humans, as defined by rigorously controlled scientific studies, stem cells implanted therapeutically offer novel treatment perspectives for diseases in companion animals that have previously been considered incurable. Recently, the morphology and physiology of MSC isolated from bone marrow have been evaluated in different canine breeds (Border Collie, German Shepherd, Labrador, Golden Retriever, and the Hovawart).

Bone disorders in dogs and cats can be genetic or caused by a deformity or an insufficient diet. In another study, bone marrow MSC and plasma-rich platelet transplantation were used to distract osteogenesis in dogs.

Farm Animals for Slaughter: Although stem cells are still being examined in this sector, specific caprine models for treating cartilage injuries and cell types, such as iPS, are being studied.

Cattle breeding, in which the goal is to produce fat to provide soft meat, may result in cartilage and bone issues. Furthermore, especially when grazing, this may affect their movement. The possibilities of bovine mammary stem cell therapy, which offers significant potential for regeneration of tissues that can potentially replace or repair the diseased gland, suggest differentiation of stem cells isolated into epithelial, myoepithelial, and cuboidal/columnar cells, which reduces risks after reinjection.

Conclusion: In conclusion, our analysis demonstrated that cell treatment is a safe strategy that is not overly expensive or time-consuming. It may be used for numerous species of mammals since they share a morphological tissue foundation. Among the stem cells employed in treatments, MSC (isolated from bone marrow or adipose tissue) have the highest probability of therapeutic effects due to their capacity to stimulate tissue repair, activation of paracrine factors, immunomodulation, and perception of cell homing signalling. As a result, these cells have been employed more often in companion and competition animals to treat bone problems (such as osteoarthritis), tendons and cartilage, muscles, and other tissues caused by genetic inheritance or generated from physical activity, poor food, and so on. The therapeutic potential of stem cells may also be explored in other veterinary groups, such as agricultural animals.

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Silage is a type of fodder made from green crops preserved by fermentation to the point of acidification. It can be fed to cattle, sheep and other such ruminants. The fermentation and storage process is called *ensilage*, *ensiling* or *silaging*. Silage is usually made from grass crops, including maize, sorghum, Barley or other cereals, using the entire green plant (not just the grain). Silage is one of the main ingredients in dairy cattle diets, and it is an essential source of nutrients, particularly energy and digestible fibre. Unlike properly made and managed silage, poorly made or contaminated silage can also be a source of pathogenic bacteria that may decrease dairy cow performance, reduce dairy products' safety and quality, and compromise animal and human health.

Process of silage making

For corn, harvest begins when the whole-plant moisture is suitable, ideally a few days before it is ripe.

After harvesting, crops are shredded to pieces about 0.5 inches (1.3 cm) long. The chopping size is essential because if the size is so large, pressing can not be done appropriately. If the size is too small, then we will face problems of regurgitation. If animals do not regurgitate, the saliva production will reduce, and the buffering capacity will reduce, so the whole microflora of rumen will disturb. In the end, the product will also disturb.

Cutting of maize for silage

Cut the maize crop when it has

1. Half milk line on the grain
2. Some brownish hair on the corn
3. Depression starts on grain.

In Pakistan, Maize crops produce 25000 to 35000 Kg green fodder per cut. Silage is not a complete diet. It is only the replacement of green fodder. Silage from a one-acre maize crop is sufficient for four adult dairy animals.



Biological hazards from silage

Microbial hazards include *Clostridium botulinum*, *Bacillus cereus*, *Listeria monocytogenes*, Shiga toxin-producing *Escherichia coli*, *Mycobacterium Bovis*, and various mould species. High

SILAGE

The replacement of green fodder



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concentrations of *C. botulinum* in silage have been associated with cattle botulism. A high initial concentration of *C. botulinum* spores in forage in combination with poor silage fermentation conditions can promote the growth of *C. botulinum* in silage. The elevated pH level that is generally associated with the aerobic deterioration of silage is a significant factor influencing concentrations of *L. monocytogenes*, Shiga toxin-producing *E. coli*, and moulds in silage and may also encourage survival and growth *M. Bovis*, the bacterium that causes bovine tuberculosis.

Chemical and microbiological hazards are associated with poorly fermented silages, which can be avoided by using proper silage-making practices and creating conditions that promote a rapid and sufficient reduction of the silage pH and prevent aerobic deterioration.

Good qualities of silage

Silage should have 65 % moisture and 35% dry matter. Silage should have an acidic pungent smell. If we make a ball of silage by our hand, it should be open in 3 to 4 seconds. If it open suddenly, it has less moisture than the stander. If the silage ball does not open after 3 to 4 seconds, it has



more moisture content than the average value. The ph of silage should be 3.8. Silage texture should not be so sticky.

Silo

The place where we store the silage is called the silo. Types of silos

1. Bunker Silo
 - Trench Silo
 - Pit Silo
 - Bales
2. Tower silo.
 - Bag silos.
 - Cement storage silos.
 - Fabric silos.
 - Silage piles.

Science Behind the Silage

Silage must be firmly packed to minimize the oxygen content, or it will spoil. Silage goes through four major stages in a silo:

- **Pre sealing**, which, after the first few days after filling a silo, enables some respiration and some dry matter (DM) loss but stops
- **Fermentation**, which occurs over a few weeks; pH drops; there is more DM loss, but hemicellulose is broken down; aerobic respiration stops
- **Infiltration** enables some oxygen infiltration, allowing for limited microbial respiration; available carbohydrates (CHOs) are lost as heat and gas.
- **Emptying**, which exposes

surface, causing additional loss; rate of loss increases.

Silage additives

Silage additives and inoculants can improve the safety of silage as well as the fermentation, nutrient recovery, quality and shelf life.

Silage making is all about microbiology. It's challenging to discuss silage inoculants without getting into some microbiology. Silage inoculants are additives containing anaerobic lactic acid bacteria (LAB) used to manipulate and enhance fermentation in corn silage. A more efficient fermentation is the desired result. The primary benefits expected are reduced fermentation losses and often improved animal performance. Their main functions are to either increase the nutritional value of silage or improve fermentation so that storage losses are reduced.

Types Of Silage Additives

- **Non-protein nitrogen (NPN).** Urea and anhydrous ammonia can be added to silages to increase their crude protein (CP) content.

- **Feedstuffs**

Feeds such as corn, small grains, and molasses can be added to forage.

- **Minerals**

Minerals such as calcium, phosphorous, sulfur and magnesium have been added to forage

- **Water**

Water added if forage moisture is inadequate. It requires 5 gallons/ton to change DM by 1%

Inoculants

The most common inoculants are *Lactobacillus Plantarum*, *Enterococcus faecium*, various *Pediococcus* species and other *Lactobacillus* species. Species and specific LAB strains in commercial inoculants have been selected because they grow rapidly and efficiently and produce primarily lactic acid. They increase the fermentation rate, causing a more rapid decline in pH, with a slightly lower final pH. The fermentation products are shifted, resulting in more lactic acid and less acetic acid, ethanol and carbon dioxide.

Lactic acid is more potent than acetic acid and contains almost as much energy as the original sugars.

Silage Opening

The fermentation process takes **ten days to 3 weeks** to complete. Silages should not be fed until after this process is completed for the best milk production and feed intake. Thus, the recommendation is to wait at least three weeks before feeding new crop silages.

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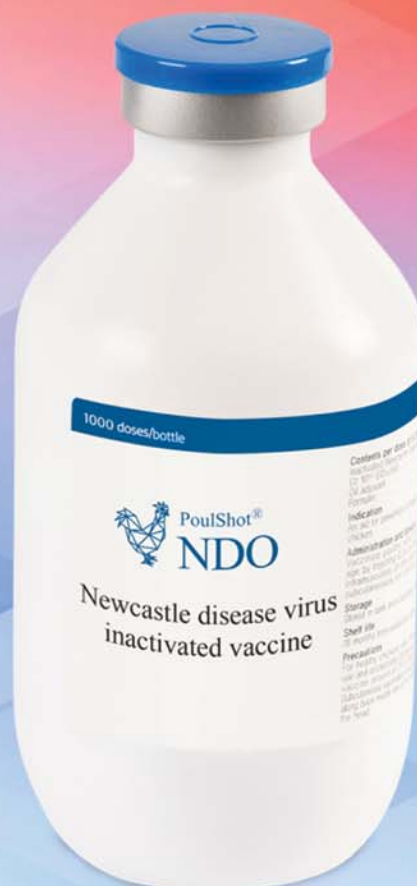


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Salmonella spp. infections in poultry and its zoonosis

by Saba Rashid, Rehan Ashraf, Aqib Javed
Faculty of Veterinary Science, University of Agriculture, Faisalabad

In Pakistan poultry industry is the 2nd largest industry in Pakistan. Moreover, Pakistan is the 11th largest producer of poultry in the world. The poultry industry has played an essential role in eliminating poverty by providing multiple opportunities to millions of people all over the country. It was started in 1960 to provide quality protein to the people of Pakistan. More than 1.5 million people are directly and indirectly involved in the poultry industry. Poultry meat provides 34% of the total meat production in Pakistan. As the country population is increasing, the demand for poultry meat is also increasing.

The protein requirement reported for one person is 102.7 g per day, but only 69.61 g per person per day is used in our country. The animal sources of protein are mutton, beef, milk, poultry, eggs and meat. Poultry meat is most economical as compared to other protein sources. There is an imbalance between the consumption of the poultry products of other developed countries because our poultry enterprise is facing various problems. One of the significant problems is huge economic losses inflicted by various infectious diseases poultry meat must be free from bacteria with public health significance like *Salmonella*, *Listeria* and *Campylobacter* etc. The main threat of poultry enterprise is the *Salmonella* species.

Salmonellosis is the most prevalent disease world widely. It causes diarrhoea, inappetence, and vomiting and sometimes it causes death. The outbreak of salmonellosis occurs in



different countries each year, including Pakistan. Salmonellosis spreads in humans by the consumption of raw chicken meat, contaminated beef, seafood and vegetables. Among these, salmonellosis is most often caused by the consumption of chicken meat and eggs.

In Pakistan, the incidence of egg-borne salmonellosis has frequently been reported. The consumption of contaminated eggs predominantly caused these outbreaks. It was reported that 48% of human salmonellosis were derived from eggs from 1990 to 2003. These cases were also associated with the consumption of eggs and contaminated raw meat.

In Pakistan, on average, 65.8% of poultry feed is contaminated by *Salmonella*. According to a survey in Islamabad, the prevalence of *S.gallinarum* is 3.08%. The highest concentration of *Salmonella* is present in fluff (8.53%), eggs (1.75%), poultry litter (3.2%) and in the feed (1.62%). Hence consumption of contaminated eggs and meat results in an endemic outbreak of human salmonellosis. Salmonellosis in poultry can be categorized into three diseases; Pullorum, a disease which is caused by *Salmonella pullorum*, it is also called Bacillary white diarrhoea, it is eliminated from most of the world, Fowl typhoid caused by *Salmonella gallinarum* is still significant

Continued on Page 16

Pakistan and China join hands in feed research

BEIJING - "In Pakistan, at least sixty per cent of feed additives are imported from China. Through my research and learning in China, I hope to enhance Pakistan's self-reliance in this regard".

This is the wish of Waseem Abbas, a product manager at the Animal Nutrition Feed Additives Section of Jawad Impex International Lahore and PhD scholar at the College of Animal Science and Technology, China Agricultural University (CAU), Beijing, China.

He has just ended a 14-day seminar on feed formula organised by Hunan Agricultural Group, during which he and other 20-odd Pakistani participants, including farmers, students, and scientists, learned through an array of courses such as the nutrition

requirements on animals, feed formula design, the application and development of fodder in livestock and breeding industry, fodder

processing techniques and fodder additives. "Additives, meal and grains are indispensable parts in feed. On the contrary, they are essential for

the balance and sufficiency of nutrition in feed, thus improving its efficiency and quality, something in dire need in Pakistan", said Waseem.

According to the University of Illinois research, feed costs represent the highest input cost

to produce milk (estimated to be 35 to 50 per cent).

In Pakistan, livestock production contributes to over 60% of the total

agricultural output value. Commercial farmers and corporate about ten to fifteen per cent are overall dairy producers; they need feed additives to

lower their cost while maximising production. Around 85 per cent of households are farmers and are feeding conventional feeds, which are limited to fulfilling the nutritional requirement of animals. Now farmers are moving to modern/balanced feed, which

includes feed additives to increase feed efficacy. In poultry, similarly, feed additives fulfil an adequate nutritional profile for the birds.

Following the international practices, additives are commonly used in feed, with Vitamin premix, Mineral premix, amino acids, enzymes, toxin binders' antioxidants, choline chloride, etc., as the most commonly used feed additive.

But high prices and low efficient quality of feed in Pakistan is constraining the related sectors (meat, milk and egg production) from fully unleashing their potential. "For example, soybean is a major protein source of feed for poultry/dairy. But due to the high prices in Pakistani market

Continued on Page 16





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NAEAC chairman visits Cholistan University

AVN Report

BAHAWALPUR - National Agricultural Education Accreditation Council (NAEAC) Chairman Dr Ashfaq Rajwana recently visited the Cholistan University of Veterinary and Animal Sciences Bahawalpur.

He inspected faculties of Animal Sciences, Poultry Sciences and food Sciences and Technology.

Vice-Chancellor, Prof-Dr, accorded him a warm welcome.

Muhammad Sajjad

Khan, Registrar Salman Mirza, Dr Kashif Akram, Controller Examination, Dr Waseem Babar, Director, IT, Muhammad Khalid Mahmood and Director Students Affairs, Dr Qaswar Ali Shah.

He also visited the sports Complex of the varsity. He lauded the role of Cholistan University in imparting higher education in the Bahawalpur region. He said that the varsity had been playing an essential role in providing education on livestock and nutrition.



Poultry control shed looted

AVN Report

KHANDELWAL - Seven armed robbers have recently looted around seven lac rupees, and several mobile phones from Tuesday's local poultry control shed staff. According to police, unidentified burglars broke into Aqsa Control Shed located at Chuk 10 R/96 and looted cash and cell phones.

Police have registered the case and started a search operation to arrest the accused.

PHC conditionally ...

Continued from page 02

and allowed the resumption of their export. However, action on the decision was linked to the reduction of prices in the local market.

The court had allowed the food department to ban the export of poultry products in case of increased rates beyond those decided by stakeholders. Last month, the food department banned the transportation of poultry products, including chickens and day-old chicks, to Afghanistan.

However, the court had allowed transportation of day-old chicks to Afghanistan on Oct 26 but declined to relax the ban on chicken export.

The bench heard two petitions filed by citizens Hafeezur Rehman and Malik Sheharyar about high prices of dairy products, adulteration of milk and other related issues.

In May this year, the court had ordered the deputy commissioners to stop the transportation and smuggling of poultry products to Afghanistan. In June, it had again ordered administrative officers of different districts to halt the smuggling of cattle to Afghanistan.

Besides additional advocate general Syed Sikander Hayat Shah, several officials also appeared before the bench, including food secretary Khushal Khan, who has earlier been nominated as the focal person by the court in these issues, and a representative of the livestock

department.

Advocates Babar Khan Yousafzai, Isaac Ali Qazi, Abdur Rauf Rohaila, Bahlol Khattak and Ijaz Khan appeared for poultry associations and companies, including the provincial chapter of Pakistan Poultry Association.

The lawyers insisted that one of the critical ingredients of poultry feed was soybean, which the government mostly imported. They added that soybean was also transported abroad, causing the prices of poultry feed to increase.

The council said if the prices of soybean remained stable, it would help stabilise poultry feed prices.

They requested the bench to relax the government ban on transportation of chickens to Afghanistan following the committee's recommendations and link the relaxation with the farm prices of chickens.

Avian Metapneumovirus ...

Continued from page 04

condition, the live vaccine might have to be repeated 2-3 times, particularly in male turkeys.

- At 16-20 weeks of age to the breeding stocks administered additional inactivated vaccines. Good management and immune mediation are potential and essential aspects of the control program. Live vaccine primarily controls aMPV infection in poultry flock, while vaccine virus may be found for a prolonged period after application, leading to reversion.

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Ch. Arshad Mehmood Raji International congratulated Dr. Asim Mehmood Khan, on appointing as Chief Organizer IPEX 2022. He also presented Bouquet and Cake to Dr. Asim Mehmood Khan.

پٹ لاگت کو کم کرنے کی کوشش میں، برآمدات پر پابندی عائد کرنے کے بجائے برآمدات کی حوصلہ افزائی کے لیے اقدامات کیے جائیں۔ بحث کے دوران، انہوں نے کہا کہ، برآمدات مقامی قیمتوں میں اضافے کا سبب نہیں بنتی ہیں بلکہ یہ پولٹری فارمرز کو زیادہ پیداوار کی ترغیب دیتی ہیں۔ انہوں نے کہا کہڈے اولڈ چک قیمت یا کسی علاقے میں چکن کی ریشیل کی قیمت پر قومی برآمدات کی بنیاد پر دباؤ ڈالنے والوں میں منفی جذبات کا اظہار ہوگا۔ اس میٹنگ کے نتیجے میں یہ جاننا حوصلہ افزا تھا کیونکہ حکومت نے ڈے اولڈ چک کے علاوہ تمام موسی شیوں اور پولٹری کی برآمدات پر سے پابندی ہٹا دی تھی، جو زیادہ سے زیادہ ڈی او سی کی قیمت 70 روپے سے مشروط رہی۔ اگر کسی وقت نرخ (70 روپے فی چوزہ) اور 230 روپے فی کلو برائیکلر سے زیادہ ہوتی ہے تو برآمد خود بخود درودک دی جائے گی یہ بات قابل فہم نہیں ہے۔ لہذا پولٹری فارمرز کو حکومت کی حوصلہ افزائی کی ضرورت ہے تاکہ وہ زیادہ سے زیادہ پیداوار بڑھائیں اسی طرح ایک دن کا چوزہ اور برائیکلر گوشت کی قیمتیں متوازن رہیں گی۔

بجائے سمجھے۔ اس کی وضاحت بھی کی گئی کیونکہ مقامی قیمتوں کے ساتھ مشروط برآمدات کو آن اور آف نہیں کیا جاسکتا، کیونکہ برآمدات کو شروع کرنے اور اسے برقرار رکھنے میں کافی محنت درکار ہوتی ہے کسی بھی بندش سے ہمسائیہ ممالک کو موقع ملے گا، جسے دوبارہ حاصل کرنا بہت مشکل ہو سکتا ہے۔ مزید انہوں نے کہا کہ مرغی کا گوشت اور انڈوں کی قیمت طلب ورسد کے بنیادی اصولوں کے مطابق طے ہوتے ہیں۔ انہوں نے یہ بھی نشاندہی کی کہ آج پاکستان پولٹری سیکٹر کو برآمدات پر پابندی، مسابقتی کمیشنوں کی غیر معقول سرگرمیوں، لائیو شک اور دیگر سرکاری محکموں کے رویے کی وجہ سے نام نہاد قیمتوں کو کنٹرول کرنے اور خام مال پر درآمدی ٹیکس کے نفاذ کی وجہ سے بدترین کاروباری ماحول کا سامنا ہے۔ انہوں نے خدشہ ظاہر کیا کہ ان حالات کی وجہ سے پولٹری فارمرز کا مزید نقصان ہوگا۔ آگے بڑھنے کے راستے کا ذکر کرتے ہوئے انہوں نے حکومت کو پولٹری سیکٹر کو بہتر بنانے اور سازگار کاروباری ماحول دینے کی تجویز دی۔ انہوں نے خام مال پر سیلز ٹیکس اور درآمدی ڈیوٹی ختم کرنے کا بھی مطالبہ کیا، ان

بقیہ: فاضل عدالت عالیہ کی۔۔۔
اضافے کی وجہ سے لاگت میں 300 فیصد سے زائد اضافہ ہوا ہے۔ روپے کی قدر میں کمی اور اس کے علاوہ درآمدی ڈیوٹی اور سیلز ٹیکس میں اضافہ جو کہ سال 2013 تک موجود نہیں تھا، انہوں نے کہا کہ خام مال کی درآمدات پر ٹیکس اور ڈیوٹیز، جو ملک میں پیدا نہیں ہوتے، غیر پیداواری ہیں اور صرف ان پٹ میں اضافہ کریں گے۔ جناب چیئر مین نے پولٹری کی قیمتوں کی غیر متوازن نوعیت کی بھی وضاحت کی جو کہ صرف سپلائی اور ڈیمانڈ سے چلتی ہے۔ یہ کہا گیا کہ کوئی بھی ڈے اولڈ چکس (DOC) اور تیار شدہ برائمرز کی مارکیٹ قیمت نہیں دے سکتا اور نہ ہی اس کی ضمانت دے سکتا ہے۔ اس کی مزید وضاحت کی گئی پولٹری فارمرز کا نفع نقصان اس کی اوسط قیمت پر مبنی ہوتا ہے، جو ایک سال کے دوران حاصل کی جاتی ہے۔ انہوں نے کہا کہ بڑھتی قیمت پر کوئی حد لگانا قابل عمل نہیں ہو سکتا کیونکہ مارکیٹ کی قوتوں کی وجہ سے قیمتوں میں کمی کی کوئی حد نہیں ہے، انہوں نے زور دیا کہ مارکیٹ فورسز کو کام کرنے دیا جائے اور حکومت اس رجحان کو پریشان کرنے کے

Salmonella spp. ...

Continued from page 12

economic importance to the poultry industry in many countries. It is an acute or chronic septic-emic disease of chickens and turkeys; however, these infections also have been reported in-game or wild birds. The most prominent clinical signs are red, ruffled feathers, droopiness, huddling of chicks, diarrhoea, decreased feed intake, dehydration and high mortality. The liver is soft and enlarged, and bronze discolouration is the pathognomic lesion of fowl typhoid. Fowl typhoid has been diagnosed based on pathological lesions in which the liver and spleen are mainly affected. Paratyphoid infections are 3rd one primary infection due to a group of different serovars associated with foodborne infections in humans. Significant economic losses have been reported in layers, broilers and breeders in the form of high mortality, morbidity, decreased egg production, reduced chick quality, feed costs, veterinary expenditure and dead birds. Both morbidity and mortality differ according to factors like the birds' age, flock

management, and parallel infections; mortality can range from 0% to 100%, particularly in chicks and poults.

Salmonella is a significant pathogen of humans. It is associated with a broad spectrum of infectious problems, including typhoid fever and non-typhoidal salmonellosis. In Asia, especially in Pakistan, 13 million cases of food poisoning were reported. *S. enterica* serovars *gallinarum* have got public health importance because of its efficiency to infect bird eggs. Poultry products are responsible for the transfer of *Salmonella* species to humans 40% cases were attributed to the consumption of poultry and poultry products. Salmonellosis is a public health concern, and it can be eradicated by vaccinating the birds. Initially, killed vaccines of 9R strain were prepared, which were found less effective than live vaccines, as 9R live vaccines create better immunity than the killed or attenuated vaccines, (but the strain still contain some residual virulence for some breed of poultry. Control of infections depends on the level of infection in

the region. Serological testing is done where the infection rate is low, otherwise slaughtering was done for complete eradication. At the same time, vaccines are considered more suitable where infection levels are very high or where eradication cannot be considered an option. Chemotherapy could also be used where needed but, it shows long term side effects. It was always better to eliminate the carrier birds continuously by blood testing of potential breeding birds followed by the culling.

Pakistan and China ...

Continued from page 12

complicated by the pandemic-caused cross-border transaction impediment, people have to turn to less-nutritious ingredients, i.e. vegetables and animal proteins sources", said Waseem. During my study in China, I have visited many large feed producers and found that China uses advanced, innovative techniques and machinery, like a pelleting machine, grinders, etc.", Waseem observed. Waseem has co-authored two papers in SCI-indexed journals,

namely, dietary yeast β -glucan supplementation improves eggshell colour and fertile eggs hatchability and enhances immunity functions in breeder laying hens, and dietary encapsulated essential oils. Organic acids mixture improves gut health in broiler chicken challenged with necrotic enteritis. "Poultry feed has a bearing on the income of 1.5 million people in Pakistan. I feel lucky to have the opportunity provided by the Chinese government to learn at State Key Laboratory of Animal Nutrition from headteacher Professor Guo Yuming and Associated Professor Wang Zhong, both of whom are extraordinary scholars in this field," Waseem said. In 2020, China banned the use of antibiotics in feed, as did the European countries, to minimise the harm of the residues of the substance, which, if remained uncontrolled, might cause more deaths globally than cancer by 2050. "We are also working to eliminate the content of antibiotics from the feed as a growth promoter in Pakistan", Waseem told CEN.

-Courtesy by CEN



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ڈی ایم جی کی طرف سے زرعی یونیورسٹی فیصل آباد سب کیمپس ٹوبہ ٹیک سنگھ میں ایک روزہ شاندار سیمینار کا انعقاد کیا گیا

رکھنا ضروری ہیں ان کے بارے میں آگاہ کیا گیا۔ آخر میں سوالات اور جوابات کا ایک سیشن رکھا گیا جس میں ویٹرنری ڈاکٹرز، فارمر حضرات کے سوالات کے جوابات بڑے اچھے انداز سے پیش کیے گئے۔

یونیورسٹی میں موجود ڈی ایم جی کے پراڈکٹس کے اشال بھی وزٹ کیے گئے جس میں یونیورسٹی کے پرنسپل، اساتذہ اور پولٹری انڈسٹری کی مایہ ناز شخصیات شامل تھیں۔ ڈی ایم جی اشال میں موجود پراڈکٹس کے متعلق احباب کو بھرپور ڈیٹیلنگ بھی کی گئی۔ پولٹری انڈسٹری کی مایہ ناز شخصیات نے ڈی ایم جی کی پراڈکٹس اور ڈی ایم جی کی کاوشوں کو سراہا اور مستقبل میں ایسے پروگرامز منعقد کرنے کی سفارش کی اس پراڈکٹس محمد سلیمان نے اپنے تاثرات میں کہا کہ انشاء اللہ مستقبل میں ڈی ایم جی ایسے پروگرامز کرنے کا ارادہ رکھتی ہے تاکہ پولٹری سے متعلق مسائل اور بیماریوں کے متعلق وقتاً فوقتاً آگاہی ہوتی رہے۔



سراہا۔ انہوں نے یہ بھی بتایا کہ ان مسائل پر قابو پانا ناممکن نہیں ان مسائل کو حل کیا جاسکتا ہے۔ بعد ازاں ڈی ایم جی کے نیشنل سلیز مینجر ڈاکٹر صدام طارق گوندل صاحب نے پولٹری فارمرز اور ویٹرنری ڈاکٹرز کو فارم بائیوسیکیورٹی کے نئے طرز عمل سے آگاہ کیا اور فارم بائیوسیکیورٹی کے کچھ ایسے نکات جو ہمیشہ فارم کو سیکیور کر تے وقت مد نظر

انہوں نے یہ بھی بتایا کہ وائرس ہمارے پاکستان میں زیادہ کیوں حملہ آور ہوتا ہے۔ اس کے بعد ڈی ایم جی کے جنرل مینجر سلیز اینڈ مارکیٹنگ ڈاکٹر محمد سلیمان صاحب نے ماضی میں پولٹری کے متعلق درپیش آنے والے مسائل کے پر بات چیت کرتے ہوئے بتایا کہ ان مسائل کو کیسے حل کیا جاسکتا ہے جس کو پولٹری کے مایہ ناز ویٹرنری ڈاکٹرز نے

ڈی ایم جی کے اس شاندار سیمینار میں مہمان خصوصی سابق چیئرمین پاکستان پولٹری ایسوسی ایشن ڈاکٹر ارشد حنیف صاحب، پرنسپل زرعی یونیورسٹی فیصل آباد سب کیمپس ٹوبہ ٹیک سنگھ ڈاکٹر ثار احمد، ڈاکٹر محمد سلیمان جنرل مینجر سلیز اینڈ مارکیٹنگ (ڈی ایم جی)، ڈاکٹر صدام طارق گوندل نیشنل سلیز مینجر (ڈی ایم جی)، اور یونیورسٹی کے اساتذہ خصوصاً ڈاکٹر سلمان لطیف بٹ لیکچرار پیتھالوجی نے بھرپور شرکت کی۔

ڈی ایم جی کے اس شاندار سیمینار میں ڈی ایم جی مارکیٹنگ ٹیم، نامور ویٹرنری ڈاکٹرز اور فارمر حضرات تشریف لائے اور سیمینار کا باقاعدہ آغاز تلاوت قرآن پاک اور نعت سے کیا گیا۔ اس سیمینار میں زرعی یونیورسٹی سب کیمپس ٹوبہ ٹیک سنگھ کے لیکچرار ڈاکٹر سلمان لطیف بٹ صاحب نے بیماریوں اور ویکسین کے متعلق آگاہ کیا خاص طور پر وائرس سے ہونے والی بیماریاں اور ان سے بچنے کے لیے ہر ممکنہ کاوش کے بارے میں بتایا گیا۔





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لنکاسپر ایڈ-ڈی پاؤڈر وسیع الاثر انتہائی بائیو ٹیکس کا مرکب ہے جو ای کو لائی، مونیما ٹیکو پازما، سی آر ڈی، گرووں کی سوشل، جوڑوں کے درد اور نظام حسی کے جراثیموں کے خلاف نہایت موثر ہے۔



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30 اکتوبر 2021 کو پولٹری ہاؤس جوہر ٹاؤن لاہور میں پولٹری میڈیا کی میٹنگ منعقد کی گئی



تیاریاں اور ان کے حوالے سے خبریں اور اشتہارات متعلقہ اخبارات، میگزین اور کتابچوں میں شائع کئے جائیں گے۔ شرکت کرنے والے

لاہور: آئی ٹیکس 2022 (17، 18 اور 19 فروری 2022) کو ایکسپو سینٹر لاہور میں منعقد کی جارہی ہے، اس حوالے سے آج بروز 30 اکتوبر 2021 کو پولٹری ہاؤس جوہر ٹاؤن لاہور میں پولٹری میڈیا کی اجلاس منعقد کیا گیا۔ جس میں ڈاکٹر عاصم محمود خان، چیف آرگنائزر آئی ٹیکس 2022، محمد اسلم رانا، رضا اللہ خان، حارث خان، چوہدری ارشد محمود، ندیم یوسف، قاضی عامر، ڈاکٹر ندیم طور اور دیگر پولٹری میڈیا سے منسلک افراد نے ویبنار (webinar) کے ذریعے شرکت کی۔ میٹنگ میں طے پایا کہ آئی ٹیکس 2022 کی تمام تر

فاضل عدالت عالیہ کی ہدایات پر سیکرٹری زراعت و سیکرٹری فوڈ کے پی کے، کے ساتھ ڈاکٹر عبدلکریم چیمبرمین پی پی اے نادرین ریجن کی میٹنگ

میجر (ریٹائرڈ) سید جاوید حسین بخاری
(سیکرٹری پی پی اے نادرین ریجن)

چیمبرمین پی پی اے (نادرین ریجن) ڈاکٹر عبدلکریم نے پریس بریفنگ میں بتایا کہ پشاور ہائی کورٹ کی ہدایت پر سیکرٹری زراعت کے پی کے کے دفتر میں اجلاس ہوا۔ اس اجلاس میں سیکرٹری خوراک کے پی کے، سیکرٹری زراعت کے پی کے، پشاور ہائی کورٹ کے نمائندے اور پولٹری اور لائیو سٹاک سیکٹر کے اسٹیک ہولڈرز نے شرکت کی۔ اس ملاقات میں افغانستان کو پولٹری اور لائیو سٹاک مصنوعات کی برآمدات پر پابندی پر غور کیا گیا۔ چیمبرمین پاکستان پولٹری ایسوسی ایشن (پی پی اے) نادرین ریجن ڈاکٹر عبدلکریم نے پولٹری اپ ڈیٹ کے بارے میں پریزنٹیشن دی۔ اس پریزنٹیشن میں پولٹری سیکٹر کی اہمیت بتاتے ہوئے انہوں نے کہا کہ پولٹری ایک جگہ پراگیکل صنعتوں کی خام مال کو استعمال کرتی ہے، اس طرح ان کو قابل عمل بناتی ہے اور ان کے خام مال کو گوشت اور انڈے جیسے اعلیٰ معیار کی خوراک بنانے میں استعمال کرتی ہے، دوسری طرف یہ قیمتوں کے ریگولیٹر کا کام کرتی ہے۔ دیگر کھانے جیسے مٹن، بیف، دال، اور کچھ حد تک سبزیوں کے لیے۔ ڈاکٹر کریم نے پولٹری مصنوعات کی لاگت میں اضافے کا سبب بننے والے عوامل کی وضاحت کی۔ انہوں نے مزید وضاحت کی کہ زراعت میں "پیداوار کی لاگت" ایک غلط تشبیہ ہے۔ زراعت میں لاگت میں اضافے پر بحث کرتے وقت "ان پٹ کاسٹ" کا حوالہ دیا جاتا ہے۔ انہوں نے کہا کہ گزشتہ 7 سالوں میں پولٹری کی پیداواری لاگت میں 210 فیصد اضافہ ہوا ہے جبکہ سویا بین میل کی مثال دیتے ہوئے جو کہ درآمدی بنیاد ہے اس دوران بین الاقوامی قیمت میں

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