



Farmers, consumers to get facilitated from new agriculture markets

AVN Report

GUJRANWALA - Syed Hussain Jahania Gardezi, Agriculture Minister Punjab, recently said that in line with the vision of the Prime Minister of Pakistan, new agricultural markets are being established so that farmers get ease to the sale of their commodities and consumers can also avail better facilities.

He stated this after inaugurating the new market established under the first public-private partnership in Kamoke District Gujranwala. Gardezi said that the present government, after establishing the Punjab Agricultural Marketing Regulatory Authority (PAMRA), was taking steps to improve the conditions of Agriculture Markets. So the farmers can also get better facilities at the same time. Under the PAMRA Act, the registration of 146 markets has been completed.

He said that agricultural markets across the province are linked through the Information Technology system. Standard arrangements for cleanness and plantation are being completed in these model markets. Fees schedule of market, commissions and daily rates are being labelled at distinguished places in these models markets. Moreover, markets that were not operative are being opened across the province to increase the number of markets, he added. In all this process, transparency is key, he maintained.

The Minister of Agriculture said that during the last financial year, the wheat production reached 20.9 million tonnes for the first time in the history of Punjab province. The production of Maize, Potato, Sugarcane and Sesame has also increased.

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Pak-Uzbek settles on enhancing bilateral trade in agriculture

AVN Report

ISLAMABAD - Pakistan and Uzbekistan agreed for enhancing bilateral trade and investment relations, particularly agriculture trade and machinery development, via joint ventures to develop and promote the local agriculture sector on modern lines. The agreement to this regard was developed in a meeting between Minister for National Food Security Syed Fakhar Imam, and Ambassador Extraordinary and Plenipotentiary of the Republic of Uzbekistan to Pakistan Oybek Usmanov, said a news release. Adviser to Ministry Dr Akmal Siddique and Senior Joint Secretary Ministry of National Food Security and Research Javed Humayun has also attended the meeting. The minister welcomed Uzbekistan's interest in investing in the development of agriculture machinery in Pakistan via joint ventures and said that Pakistan's 60 per cent exports are of the textile industry, adding that country



has predominantly agro-economy and value addition in this sector is vital for future economic growth. He said Pakistan exported 3.7 million tonnes of rice last year, and this year has twice that available for export. He welcomed Uzbekistan's interest in importing rice from Pakistan. Fakhar said the two countries could immensely benefit from the exchange in agriculture research and value-added technologies and praised the quality of mechanization in Uzbekistan, and said that Uzbekistan and Pakistan

have huge trade potential. Fakhar said Pakistan had immense export potential with respect to citrus fruits, rice, mangoes, onion, potatoes, fisheries and livestock, adding that it has 8 million tonnes of rice that can be exported. The minister also acknowledged that the value-added industry needed to be set up by Pakistan to fully take advantage of its agricultural products, adding that Pakistan exported about 144,000 tonnes of mangoes last year; hence it's export to Uzbekistan

also has huge potential. Oybek Usmanov, Ambassador of Uzbekistan to Pakistan, told the federal minister that Uzbekistan is ready to increase multifaceted cooperation with Pakistan. He said high-level engagement between the two countries was expected to reap fruitful results for both countries. Pakistani agricultural products have huge potential if they are converted into value-added products through processing, he said, adding that Pakistan was a key exporter of citrus fruits and rice to Uzbekistan. He said high-yielding cotton seed available that is pest and drought resistant which can increase Pakistan's cotton output, adding that exchange of technical knowledge can benefit both countries. The Ambassador showed great interest in importing rice from Pakistan and said that Uzbekistan was greatly interested in increasing trade between the two countries.

Govt to take steps in enhancing meat, milk production

AVN Report

LAHORE - Minister for Livestock and Dairy Development Husnain Bahadur Dreshak recently said that revolutionary steps were being taken to enhance milk and meat production as the government was committed to making livestock, dairy and poultry sectors a success story. Talking to the participants of a public-private dialogue arranged by the Punjab Board of Investment and Trade, the minister assured the participants that feedback provided by them would be used to devise strategies in the province as the Punjab government has given the particular focus on the success of livestock, dairy and poultry sectors. Dreshak said that the government wants to promote livestock and dairy development business on

a commercial basis. He said that the livestock breed improvement project is vital for the betterment of local cattle's genetic characteristics and added that it could also help enhance Halal products and their export. This sector is playing a lead in the economic growth, food

the Punjab Board of Investment and Trade in bringing all stakeholders together to discuss and find ways to exploit the full potential of this sector. They said that livestock is one of



security, and poverty alleviation in the country. He added an excellent potential for investment in the livestock and dairy sector, especially in value-added products. Participants of the dialogue appreciated the efforts of

the major and largest sub-sectors in agriculture and can play an essential role in the country's foreign exchange. This sector can be transformed into a billion-dollar industry by sustained government support and imparting the latest innovative, practical knowledge and skills to stakeholders.

ITFC signs \$1.2bn Annual Plan for Pakistan's agriculture, energy sectors



AVN Report

ISLAMABAD - The International Islamic Trade Finance Corporation (ITFC) signed the \$1.2 billion Annual Plan for 2022 in favour of the government of Pakistan to provide integrated trade solutions to support the energy and agriculture sectors. The \$1.2 billion agreement includes financing the import of essential commodities such as crude oil, refined petroleum products, LNG, food and agricultural products and implementing trade-related technical assistance intervention to ensure trade development impact. The Annual Plan was signed during a ceremony in the ITFC headquarters in Jeddah between the ITFC and a delegation of the Ministry of Economic Affairs (EAD), Islamic Republic of Pakistan.



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Nutrient evaluation of agro-industrial by products and fruit wastes for utilization in ruminants feeding

by **M. Z. Zahid, A Rahman, Z Hayat**
College of Veterinary and Animal Sciences, Jhang, Pakistan

As the population is growing day by day, ultimately demanding more animal-oriented items, mainly milk and meat and this situation will be more intense, particularly in underdeveloped countries. This livestock population holds a crucial economic regimen as it contributes 60.5 per cent to the agriculture sector and approximately 11.2 per cent to the national GDP. Among livestock animals, buffalo, i.e., famous as "black gold of Pakistan", is our native breed. Currently, 40 million buffaloes are being reared by farmers in our country. There are two breeds of buffalo, Nili-Ravi and Kundi, in Pakistan. Nili-Ravi promises a dairy buffalo breed with an average production of 1800-2500liter/lactation yield. It contributes 68% to total milk production, followed by cattle (27%), sheep, goat and camel (5%). As nutrition plays a pivotal role in animal farm operations to standardize animal production performance, but unluckily it always ends with mismanagement. In Pakistan, farm animals are facing the problem of nutrient deficiency at about 39% and 56.5% regarding TDN (total digestible nutrient) and DP (digestible protein), respectively. On average, the livestock population can only get 75% of their required TDN, while there is a 60% shortage of digestible crude protein. In the same way, we don't have any feeding standards for our indigenous breeds, especially buffalo, to feed them according to their requirements. Likewise,

digestible nutrient profile and rumen digestibility of indigenous feedstuffs are not well observed. These feedstuffs are continuously being used blindly without knowing their nutrient digestibility. Instead of evaluating our local feedstuffs, we are using the profile of other countries to formulate ration for our local breeds, which results in imbalance feeding, expensive ration formulation and non-profitable farming. There might be several reasons, but nutritional management is the main factor that has a major impact on production. Feed cost on-farm operations range from 65-70%, with a handsome margin to reduce the cost of production. So, it is a need for time to sort out these issues in such a way as to standardize livestock production. Firstly, we should adopt some serious strategies to evaluate our local potential in terms of animal description and local feed ingredients. Therefore, it is not feasible for our country to use expensive conventional feed resources for optimum production. So, non-conventional feed resources can be used in livestock feeding. Non-conventional feeds refer to those feeds which are not traditionally used in animal feeding but have the potential to be used as feed. Among these feedstuffs, agro-industrial wastes such as citrus pulp,



mango seed kernel, mango peels and potato peels, corn stover, corn cobs, beet pulp etc., are very convenient to use in buffalo feed. They can replace cereal-based diets up to a certain extent in ruminants feeding and are very economical to use as their inclusion in the diet reduces the per kg price of ration. Additionally, they contain antioxidants antibacterial and immunostimulatory spectrum to improve animal health performance. Large quantities of agro-industrial wastes are available, but their digestion pattern and profile are less available to formulate a balanced animal diet. Less availability of recorded data regarding their digestibility urges scientists to use different techniques to evaluate their digestibility. There are different techniques or methods to determine the nutrient digestibility of feedstuffs. Among these, in-situ and artificial rumen methods (Daisy incubator) are very useful to determine the digestibility of nutrients efficiently. The nylon bags technique has widely been used to evaluate digestibility in-situ. In-vitro digestibility of feedstuffs can be measured by using Daisy II (ANKOM) incubator. In vivo or in situ techniques are more precise methods to evaluate nutrient digestion kinetics, but these are very expensive require animals, labour

and time, which makes these procedures limited. While on the other hand, the in-vitro Daisy incubator technique is a fast, simple and convenient method to evaluate nutrient digestibility. For this purpose, the research project was funded by the Higher Education Commission under NRP#9869 has been conducted in the animal nutrition lab of the college of veterinary and animal sciences, Jhang campus. The basic objective was to investigate the nutrient profile of various agro-industrial wastes by the Nylon bag in-situ technique and the Daisy incubator in-vitro technique. Along with nutrient profiles of the raw stuff, these samples were incubated in the rumen through rumen fistula and in Daisy Incubator and further analyzed to calculate the nutrient digestibility of these agro-industrial byproducts fruit wastes and fodders to utilize these stuff in buffalo feeding with least cost. Four fruit wastes samples, including citrus peels, mango seed kernel, mango peel, potato peels and agro-industrial byproducts including corn stover, sugar cane tops, corn cobs, sugar beet pulp, rice straw and six commonly used fodders were used in the digestibility trials. Results will be very fruitful to formulate the feed for buffalo by using the nutritional profile and nutrient digestibility profile of these non-conventional agro-industrial and fruit wastes. This will be very helpful for the farmers or stakeholders to utilize these agro-industrial wastes as feed ingredients and their nutrient profile for the farmers and nutritionists to formulate a balanced diet by utilizing these nutrient digestibility values of various feedstuffs.

Pharmacokinetics of florfenicol and its effect on animal health

by **Dr Awn Abbas**
Sichuan Agricultural University, Chengdu, China

Pharmacokinetics: Pharmacokinetics is the movement of a drug through the body's biological systems. These processes include absorption, distribution, bioavailability, metabolism, and elimination. It can be used to study the onset, duration, and intensity of the effect of a drug. It determines the movement of the drug into, inside and out of the body.

- **Absorption:** Describes how the drug moves from the site of administration to the site of action.
- **Distribution:** Describes the journey of the drug through the bloodstream to various tissues of the body.
- **Metabolism:** Describes the process that breaks down the drug.
- **Excretion:** Describes the removal of the drug from the body.

Introduction of Florfenicol: Florfenicol (d-(threo)-1-(methylsulphonylphenyl) 2- dichloroacetamide-3-fluoro-1-propanol) is a primarily bacteriostatic broad-spectrum antibiotic against many Gram-negative and 3 bacteria (Cannon et al., 1990). Florfenicol is a fluorinated derivative of chloramphenicol and thiamphenicol, which has a fluorine atom instead of the hydroxyl group located at C-3 (Sams, 1994). Florfenicol does not carry the risk of inducing

human aplastic anemia. Florfenicol is not subject to the action of acetyltransferase, which is an enzyme used by bacteria to develop resistance to chloramphenicol and thiamphenicol (Cannon et al., 1990; Paape et al., 1990). Because of the emergence of resistant strains of micro-organisms, there may be great value in using florfenicol for therapeutic use in the veterinary clinical setting.

Mode of action of Florfenicol: Florfenicol is a thiamphenicol derivative with the same mechanism of action as chloramphenicol (inhibition of protein synthesis). However, it is more active than either chloramphenicol or thiamphenicol, and may be more bactericidal than previously thought against some pathogens (e.g., BRD pathogens). Florfenicol has a broad spectrum of antibacterial activity that includes all organisms' sensitive to chloramphenicol, gram-negative bacilli, gram-positive cocci, and other atypical bacteria such as mycoplasma. Florfenicol is highly lipophilic, which provides high enough concentrations to treat intracellular pathogens and cross some anatomic barriers (penetration across the blood-brain barrier in cattle is 46%).

Administration and half life of Florfenicol
The half-life of florfenicol is 2-3 hours in cattle after IV administration, but it is prolonged (18 hours) after IM injection, and 27 hours after 40 mg/kg subcutaneously. In dogs, the half-life is shorter, with values of 1.1 and 1.2

after IV and oral administration, respectively. The half-life in cats is approximately 4 hours and 7.8 hours after IV and oral administration, respectively.

Uses of Florfenicol: Florfenicol was approved worldwide for the control of bacterial respiratory tract infections in cattle and pigs. In food animals, florfenicol has been shown to be effective against bacteria such as *Pasteurella* spp., *Actinobacillus pleuropneumoniae* (Ueda et al., 1995), *Mycoplasma mycoides*, *Staphylococcus aureus*, *Salmonella typhimurium* and *Escherichia coli*. This drug is characterized by high bioavailability, good tissue penetration and rapid elimination, which are important for the systemic treatment of domestic animals. Florfenicol is not yet approved for use in dogs and no critical breakpoints have been defined for dogs

Indications and Clinical Uses: Because florfenicol is a derivative of chloramphenicol, it has been used in situations in which chloramphenicol is unavailable or illegal. (Chloramphenicol is illegal to use in food animals in the US.) Florfenicol has been shown to be effective for treatment of bovine respiratory disease (BRD) in cattle associated with *Mannheimia haemolytica*, *Pasteurella multocida*, and *Histophilus somni* (formerly *Haemophilus somnus*). Administration of florfenicol (40 mg/kg once SQ) at time of arrival to

Continued on Page 14

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The road to dog rabies prevention, control and elimination—what is holding us back?

Introduction

Rabies is undoubtedly among the most puzzling diseases and stress-inducing conditions a doctor can face. When someone believes they have been exposed to the rabies virus, it triggers a big bomb of fear in the CNS that spreads quickly to the brain, just like a real rabies virus disease. I understand people's fear when dealing with the possibility of rabies infection or diagnosis.

According to most sources, there are 60,000 cases of rabies in individuals globally each year. The yearly number of human deaths from rabies worldwide is hard to estimate because of the lack of reporting in undeveloped countries, mainly Asian and African states. These cases are spread primarily by rabid dogs. According to the CDC, contact with rabid dogs has always been the source of more than 90% of rabies infections and 99% of human deaths around the world. But keep in mind that this is a worldwide challenge. Bats are currently responsible for seven out of ten human deaths from rabies in the United States.

Rabies still takes the lives of at least 35,000-60,000 people each year. The international community, which includes more than 100 endemic nations, has established a worldwide goal of zero human fatalities from rabies by 2030. Although it has been shown in many nations and areas that eliminating rabies as a public health concern is possible and that methods are ready, rabies deaths still have to be entirely avoided worldwide. While much rabies study has been done, specific regions of implementation for preventing and controlling rabies still have not been properly addressed.

How can we overcome the barriers to eliminating rabies? Many of the barriers can be overcome, and current gaps can be addressed. Here are some effective steps that we can take to eliminate rabies.

Bringing the Problem to Light and Showing Effects

Greater public awareness and political willpower lead to disease prioritization. One of the most significant ways to convince the government to focus and engage

by **Ayesha Majeed, Mohammad Munawar**
KBCMA College of Veterinary and Animal Sciences, Narowal Sub-Campus UVAS,

in disease is to show its effect on human health and the economy, as well as the possible benefits of addressing the disease. High-quality management data are required, although human rabies deaths are often unreported 100-fold, and the lack of information and sufficient evidence for estimations creates a loop of

people. World Rabies Day, acknowledged by the United Nations and celebrated annually on September 28th, marked its tenth anniversary in 2016, having 302 events conducted in 57 nations. From its very start, this global awareness-raising activity has shown a spectacular increasing trend, demonstrating

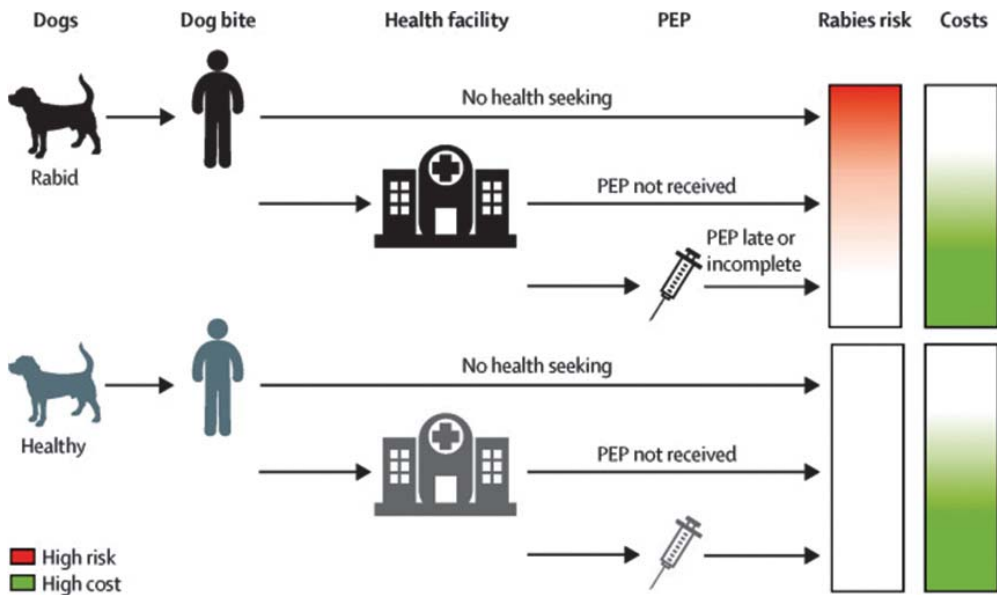
Forecasting the Need for Vaccines

Production processes for rabies vaccines of both humans and animals need many years of accurate predictions on behalf of governments in order to meet actual demand. The lack of accurate information affects forecasting and, as a result, resource management. In endemic nations, veterinary facilities usually lack information on dog overall population or habitat, while human healthcare institutions lack reliable information about bite case exposures. As a result, both sectors face supply shortages that can lead to less efficient management of the disease and require governments to look to companies offering vaccines that are either too expensive or do not match quality standards. Local vaccination banks and stockpiles controlled by the OIE and WHO have shown to be a reliable system for countries to

keep a constant availability of quality-assured vaccines while allowing producers to plan and stabilize production across years with lower prices via bulk purchase. Furthermore, vaccination banks have made a demonstrable contribution to the setting up and managing regional, national, or even sub-regional operations in Asia and Africa. Also, they have motivated recipient nations to expand data collection since data on vaccine use, and outcomes are necessary.

Vaccine Distribution to the Community

Despite positive progress in the realm of healthcare, many rabies-endemic countries still have limited availability to and expense of PEP. Definitely, improvements have been achieved, such as shorter PEP regimens (few or no healthcare visits) and nations switching to intradermal injection of rabies vaccines as suggested by WHO. There is an expectation that technological advances now being studied by WHO would make PEP and dog vaccination administration more cost-effective. The much-needed scaling up and adaptation of systems for PEP distribution and supply has gained a worldwide boost due to negotiations about a possible GAVI investment.



neglect. In contrast, implementing a control plan that gives improved monitoring data is a requirement for greater awareness. Rabies has continuously been named one of the top five zoonotic diseases whenever statistical analyses have been done.

Declaring a disease severe is critical for establishing effective reporting, as well as prevention and control of the disease should thus be a major component of any rabies strategy. Rabies is also listed as a particularly severe disease on the OIE website. Disease monitoring begins at the local level, where disease awareness must be reinforced by proper instructions for reporting to authority, preferably linked with larger nationwide health information and statistical systems.

Increasing Public Awareness

Rabies has a negative impact on people, families, society, and economies. Since more people become aware of the problem, political pressure to respond will increase. Raising awareness and educating people on preventing and managing rabies exposure is indeed important in motivating a country to defeat rabies. Leaders at all levels (from local to national) are essential because they personally fight for and teach

the devotion of countless individuals all around the world.

Creating an Engaged Society

Building a responsible society that is actively engaged in the operations to eliminate dog rabies is an essential component of a local and national program. Raising public awareness of rabies will not be sufficient to put pressure on policymakers to improve their prevention measures. Aside from public awareness, dedicated, engaged policymakers are required to assist national efforts to attain and maintain rabies-free status. Nowadays, most attempts to promote public awareness concentrate on conveying rabies knowledge that may not transfer into the desired attitudes and activities. As a result, it is necessary to engage in a nationwide communication plan and impact surveillance and take into account the distinctive behavioural drivers, motives, and wider sociocultural environment of the target audience. Owners taking full responsibility for their dogs as well as any babies they may give birth to is an example of a behaviour change required for rabies prevention and control. It involves vaccinating dogs against rabies and preventing undesired breeding.



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Empirical antibiotic therapy

by Dr Arsalan Khan, Dr Imtiaz Ali Shah, Dr. Muhammad Jamil

Empirical Antibiotic Therapy: Empirical antibiotic therapy is the use of antibiotics based on personal assumptions and guessing without having a confirmatory diagnosis of the cause of the disease and without complete knowledge of the etiology. This empirical antibiotic therapy is common in Pakistan in which the practitioners rationally recommend and prescribe broad-spectrum antibiotics without undergoing proper diagnostic protocols and the regime even though in the current era, all the diagnostic facilities are available and under the practitioners' approach. Not even in veterinary practices but in human medicine, the same trend is followed and the practitioners prescribe antibiotics usage based on the patients history, clinical signs and personal experiences, without taking interest in the confirmatory diagnosis of the anomalies.

Empirical Antibiotic Therapy and Antibiotic Resistance: Empirical antibiotic therapy tends to be more common and roughly in use in our society leaving behind the drug residues in milk and meat, which when eaten by the human population render them

antibiotic-resistant. Empirical antibiotic therapy usually relies on the use of broad-spectrum antibiotics making the bacteria become less susceptible to antibiotics due to again and again exposure to these antibiotics which is the main cause of antibiotic resistance. World Health

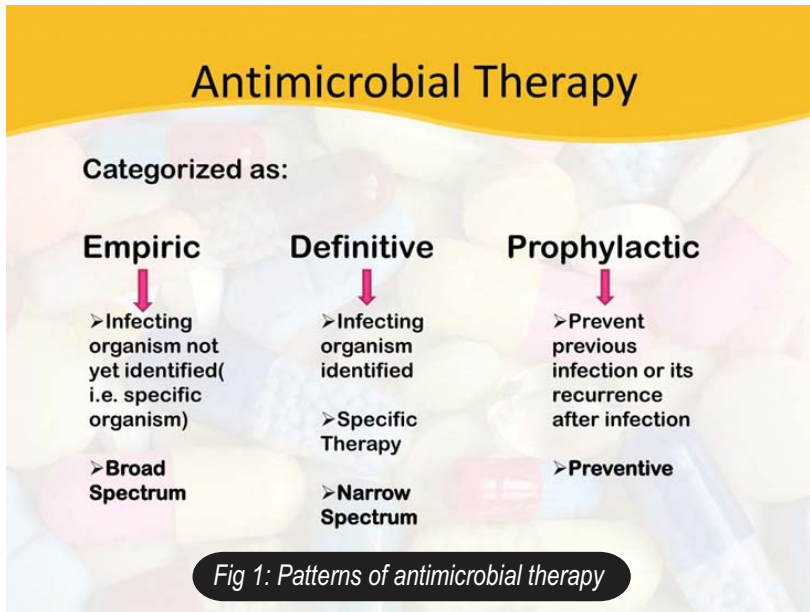
be enjoyed.

One of the significant reasons for antibiotic resistance is quackery practices both in Veterinary and human health disciplines in which the Empirical antibiotic therapy has poisoned the animals and humans rather than benefitted. Because of over dosage, improper

latest biotechnology and molecular biology tools like ELISA, PCR, rapid antigen and antibody test etc, then the exact pathogens may be determined and the antibiotic spectrum may be narrowed which is more likely to be beneficial and the recommended and scientific approach towards treating the infectious disease.

Antibiotic Stewardship:

Empirical antibiotic therapy leads to serious disease sequels and should strongly be disheartened. Perhaps, the only way to prevent or minimize antibiotic resistance is the wise use of antibiotics, preferably after a confirmatory diagnosis of the underlying disease. It is believed that up to half of the antibiotics used in human and veterinary medicine are without being necessarily required and their prevention is the key tool to stop empirical antibiotic therapy. There should be a commitment for using the antibiotics appropriately and safely, only if needed. This appropriate and scientific use of antibiotics after following the proper diagnostic protocols is called Antibiotic Stewardship and this is the need of the day to prevent the global community from empirical antibiotic therapy and subsequent antibiotic resistance.



Organization declared antibiotic resistance as "a threat to the global security" and the experts are predicting a post-antibiotic era because antibiotic resistance is going to its peak level where no more benefits of antibiotics against chronic and fatal infections may

drug preferences produce toxicity in the body and in the vital organs, especially the liver and kidneys because these are the major drug elimination routes.

Latest Diagnostic Tools: On the other hand, if the diseases are confirmatory diagnosed by the

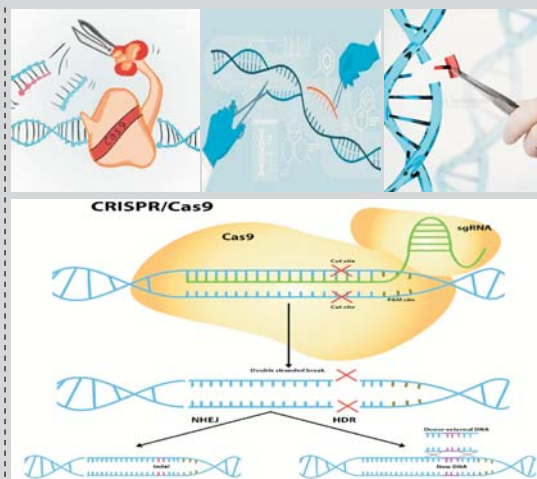
CRISPR/CASE 9

A molecular tool for treating lung cancer and one health

by Dr Maria Jamil, Dr Muhammad Tariq Javed, Dr Aisha Khatoon

Department of Pathology, Faculty of veterinary science, University of Agriculture, Faisalabad

Crisper/Case9 is a bacterial acquired immune system, comprises of Cas protein and clustered frequently interspaced short palindromic repeats. It contain sgRNA molecule, Cas protein and DNA endonuclease, lentivirus and adenovirus spread, targets endogenous DNA. Its advantages are economical, easy to manufacture and operation, fast, multiple targeted genomic loci and greatly effective. Its limitation is comparatively high off-targeted level. Lung cancer is very common problem globally. In the developed countries i.e. China, USA and Europe as well as in developing countries among the malignant tumor lung cancer rank first. The progress of lung cancer includes signaling pathways and multiple genes, and cure of lung cancer has the attention of extreme clinical research. Cancer gene therapy raises to cure concerning vigorous gene variations. Genome repair of lung cancer cells and silencing the appearance of definite proteins have become recent strategies to study and cure the cancer of lung. Recently, the gene editing technologies applications i.e. Cas9 system has concerned enhancing the consideration, and these have examined for investigation and cure of cancer such as cancer of lung. Crisper/Case9 is a strong device for the effective excision



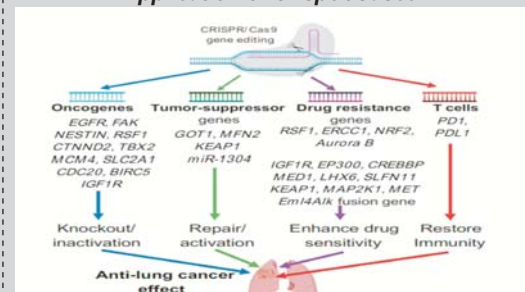
of genome of the cell. Single-guide RNA (sgRNA)-directed Case9 action leads to DNA cleavage at the definite sites, permitting DNA excision at these sites through successive DNA restoration in mammalian cells. As compare to other traditional gene editing methods i.e. ZFNs (zinc-finger endonucleases) and TALENs (transcription activator-like effectors nucleases), Crisper/Case9 gene editing strategy is accurate, simple, and may be targeted to edit any gene. A modified system of cell and animal based trials may be recognized to broadly examine the cancer of lung in distinct patients by the use of Crisper/Case9 method, also genotype specific deficiencies may be frequently recognized by this technique. This strategy may also stimulate the cure administered to the patient to

expeditiously reveal the resistance mechanisms of specific anticancer drugs and support in the recognition of active curative strategy to entirely precise the cancer associated gene mutation.

Crisper/Case9 may also be applied to genetically engineer immune cells for the progress of improved immunotherapy possibilities in cancer. Thus, Crisper/Case9 has powered evolution in cancer research in various direction and has become a promising gene excision device for specific cancer treatment.

Crisper/Case9 may also be utilized to repair the mutation in proto-oncogene or to knock out the definite gene that can produce the chances for the probable cure in cancer. Various examinations have revealed that by the usage of Crisper/Case9 to mark the oncogenic mutation offer a strong surgical approach to disturb the oncogenic mutation in the cure of cancer. This treatment was observed as a innovative cancer therapy and target a novel period.

Application of Crisper/Case9:



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Food safety as a major public health concern in developing countries

by Muhammad Irfan

Department of Epidemiology and Public Health,
University of Agriculture, Faisalabad

Muhammad Bakhsh

CVAS-Jhang, University of Veterinary and Animal
Sciences, Lahore, Pakistan

In 1983, the Food and Agriculture Organization of the United Nations gathered a panel of internationally known specialists. The Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) decided that "disease caused by tainted food was likely the leading cause of death in the world." "The most pervasive health problem in today's globe," and "a significant contributor to lower economic output." In The International Conference on Nutrition, sponsored by the FAO and the WHO, took place in 1992. Hundreds of millions of people suffer from malnutrition, according to nutrition. from communicable illnesses brought on by tainted food and water to drink "Access to nutritionally sufficient and safe food is a right of each human," the Conference said. In the same year, the United Nations Conference on Environment and Development was held. Food was identified as a crucial driver for development contamination of the environment (both chemical and biological) biological to the world's human populations, and recommended governments to take steps to prevent or reduce these incidents threats. The World Health Assembly, WHO's highest governing body, unanimously endorsed a resolution in 2000

acknowledging food safety as a critical public health function. This article examines the prevalence of biological infections and their health repercussions in developing nations, as these are the most serious food safety concerns in those areas. It gives an outline of different control strategies. The Health Consequences of Biological

Pathogens:

Biological pollutants, mostly bacteria, viruses, and parasites, are the leading cause of food-borne illnesses. Such pollutants are responsible for a wide range of ailments in underdeveloped nations, including cholera, campylobacteriosis, and E. coli gastroenteritis, salmonellosis, shigellosis, typhoid and paratyphoid fevers, brucellosis, amoebiasis, and poliomyelitis are some of the most common infections. Together, diarrheal diseases-particularly newborn diarrhea-are the most common food-borne sickness concern in the poor countries, and it is a significant problem. Helminthic parasite infections, such as Trichinella spiralis, Taenia (T.) saginata, and Taenia (T.) solium, are a

global public health issue that mostly affects impoverished nations are obtained from the ingestion of raw or undercooked meat that has not been cooked One of the most frequent parasite infections is ascariasis. Around one billion individuals are thought to be affected by infections.

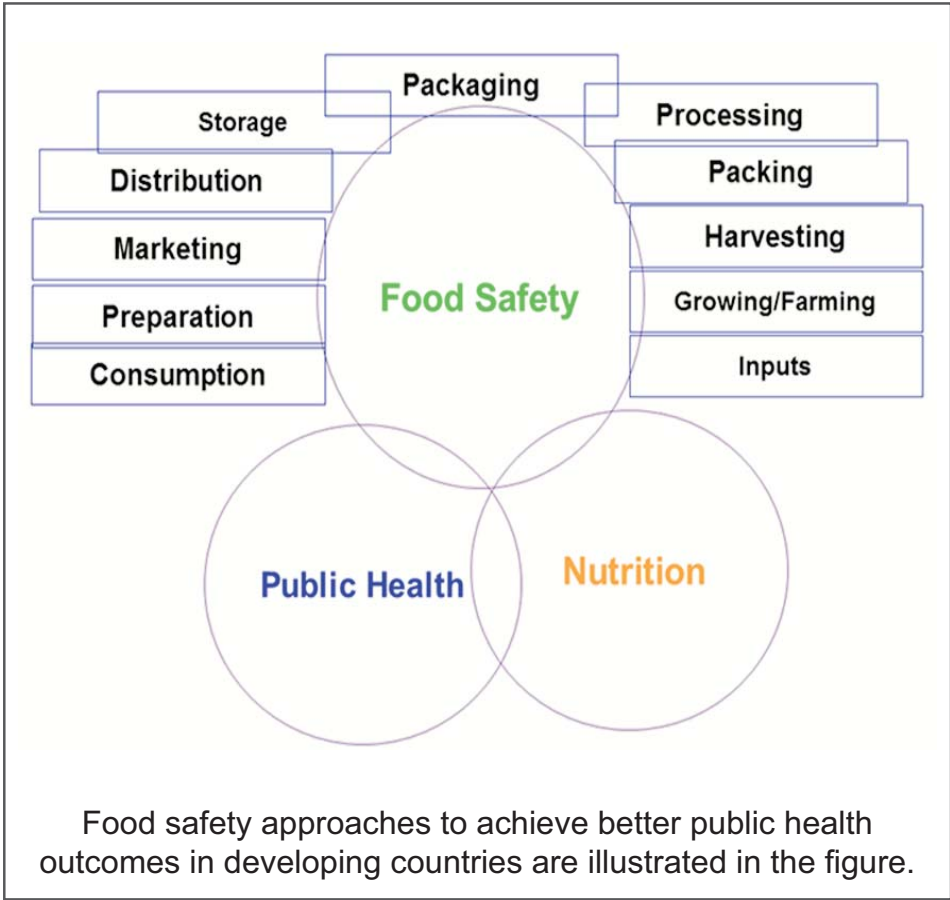
With the exception of a few illnesses including botulism, brucellosis, listeriosis, and typhoid fever, food-borne sickness is frequently thought to be mild and self-limiting. Despite the fact that this is possible. While this is true in some circumstances, the health effects in many others can be catastrophic, even life threatening. This erroneous notion has led to the lack of focus on the situation. The issue has been received. The health effects of food-borne illnesses differ. Depending on the disease agent and the stage

Applicable Control Methods:

At the agri/aqua cultural level, the first line of defense attempts to enhance the sanitary quality of raw commodities. Certain zoonotic illnesses, such as brucellosis and TB, can be eliminated in animals, resulting in pathogen-free animal products (meat and milk). However, for the most part, various diseases transmitted by animals (e.g., Salmonella spp. Even if excellent animal husbandry practices are used to control Campylobacter spp., eradication of the organisms in most animal populations is presently not attainable. Husbandry is followed to the letter. However, by using the concepts of animal husbandry and appropriate agricultural/aqua cultural practices enhancing the environmental circumstances in which animals live. The sanitary quality of raw food

items depends on where they are cultivated and how they are grown can be improved. Food-processing technologies are used in the second line of defense. Pasteurization, sterilization, fermentation, and irradiation, for example, can extend the shelf life of foods while also contributing to their safety by lowering or eradicating dangerous bacteria. Pasteurization of milk has become commonplace in places where it is widely used. It has proven feasible to halt the spread of several illnesses by milk.

When the first two fail, the third and last line of defense is the most important for microbiological risks, and it will safeguard customers' health. It is concerned with food handlers' education on the principles of safe food preparation. The Professional chefs, those who handle food at food service enterprises such as street



of the sickness therapy, as well as the length of the sickness and the patient's age and the individual's susceptibility Acute signs and symptoms include:

Diarrhea, vomiting, stomach discomfort, cramps, fever, and jaundice are all symptoms of a bacterial infection. Healthy individuals recover from numerous food-borne illnesses. Acute illness can last anywhere from a few days to a few weeks.

In underdeveloped nations, food-borne illnesses are one of the most major underlying causes of malnutrition and, indirectly, respiratory tract infections. Repeated instances of food-borne illness over time can result in malnutrition, which has a negative influence on growth and immunity infants' and children's systems. An infant with a high level of resistance. Suppressed becomes more susceptible to other ailments, such as respiratory tract infections, and is therefore locked in a vicious cycle. Malnutrition and illness create a vicious circle. There are several newborns and children. Under these conditions, children do not survive.

vending stalls and bulk catering services, and people who work in restaurants are all considered "food handlers" in charge of meal preparation in the home. Extraordinary efforts should be made to educate people who are in charge of the family's food preparation. In this scenario, special care should be paid to women, who are often in charge of the household babies and young children's care-populations in which Food-borne illness morbidity and death rates are high.

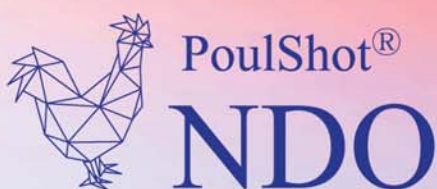
Conclusion:

Food should be viewed as a public health concern as well as an agricultural and/or commerce product. As a result, food safety must be regarded as a priority by the public health community purpose of public health. Food safety must be integrated throughout the manufacturing process with the three sectors-the complete food chain, from farm to table. Responsibility is shared by the government, industry, and consumers. It's true. Food safety must be a critical component of any plan. Nutrition policy and education that are centered on health.



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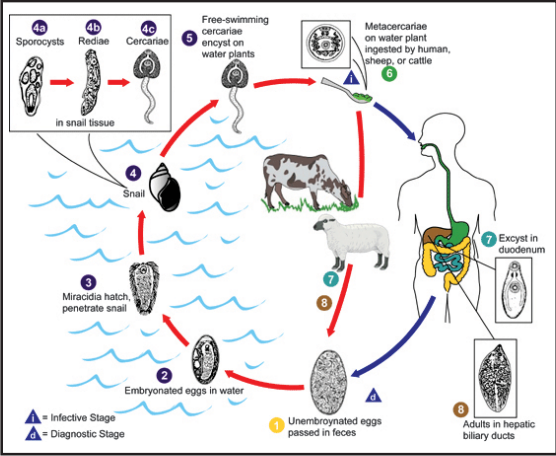
Introduction: Foodborne trematodes are the microorganisms (flukes) that are transmitted through or carried by contaminated food. The eating of uncooked seafood and meat can also result in foodborne trematodes infections. Trematodes are classified in phylum Platyhelminthes and further include two groups of flatworms i.e. flukes. Foodborne trematodes include many parasites like Paragonisum, Opisthorchis, Fasciola, and Clonorchis which are the main cause of the large number of diseases like Angiostrongyliasis (gastrointestinal and central nervous system disease in humans), Fasciolopsiasis (blood vessels, gastrointestinal tract, liver, and lungs infection), Paragonimiasis (Lungs infection in humans), etc. The foodborne trematodes may have diverse definitive hosts and one or more hosts. These parasites affect both humans as well as animals. It is noted that 287 trematodes act as infectious agents among one thousand five hundred known infectious agents for the human being.

Epidemiology: If we discuss these diseases epidemiologically we will observe that these diseases have been an issue for all societies since the beginning of humanity. Their types, mode of nutrition, mode of reproduction, and their impacts of illness have changed through the ages and are still diverse across countries and communities. These diseases are most



predominant in East Asia and South America. Some of these diseases are also global diseases, affecting a large number of countries throughout the globe. There is a 1.7% infection rate of Fasciola sp. Larvae in kavre and 3.52%

Foodborne trematode infections



rate of patent trematodes infections in Chitwan and Nawal parasi districts of Nepal. The highest prevalence of infection (38.3%) was recorded among snails collected from temporary ponds in Chitwan. It is estimated that FOUR species of foodborne trematodes are an important cause of disability with an annual ratio of 200000 illnesses and about 7000 deaths per year.

Modes of infections: These parasites have no free-living stage but pass from host to host, including a wide range of mammals, including humans and pigs. Oral and fecal routes are a common way of their transmission i.e. ingestion of contaminated food and water. Eating meat from infected animals, unpasteurized milk, uncooked and unrefrigerated food can result in foodborne trematode infections. Food items contaminated with feces, raw vegetables contaminated with soil, food contaminated with chemicals can also be a mode of transmission of foodborne trematodes. Moreover, poultry is also one of the considerable sources of

infections in humans. Up to 1,000,000 microorganisms are present in the gut and feces of poultry. Without proper cleaning of the knife, cutting the chicken with the same knife which is used to cut other food can cause foodborne trematode infection.

Diagnosis and Symptoms: There are various antibody-based serological tests that are used for the diagnosis of many foodborne trematodes. ELISA, indirect immunofluorescence, and hem-agglutination are the most commonly used tests for the diagnosis of these trematodes. It is noted that chronic infections are present in the organs in which the adult worms are located. Watery diarrheal, bloating, low-grade fever, fatigue, nausea vomiting, stomach cramps, loss of appetite, muscles aches, swollen liver, and severe abdominal pain are included in the symptoms of foodborne trematodes infections. In the chronic stage, worms enter the bile ducts until they mature and start producing eggs. Then these eggs are released into the bile and as result, they reach the intestine before being evacuated in feces. In the early stages of paragonimiasis, worms reach the lungs and the symptoms including chest pain, dyspnea, chronic cough with bloody sputum and fever can appear. During pregnancy, these infections may cause miscarriage, premature delivery, stillbirth, or even death of the mother.

Prevention: By cooperating with veterinary and agricultural sectors in anti-parasitic treatment of cattle and snail control, communication about improved food safety, access to safe water, and improved sanitation we can control foodborne trematode infections. Chemotherapy of infected persons must be done. Avoid the consumption of contaminated food, water, and water plants. Proper washing and cleaning of aquatic vegetables and fruits can prevent infection. The risk of foodborne trematodes infection can also be reduced through proper cooking of meat, crabs, fish, and aquatic vegetables. Moreover, public health programs are also required to raise awareness in society about the transmission and cause of these foodborne trematodes.

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Karachi
Mehmood Centre, BC-11, Block-9, Clifton-5, Karachi
Tel: 021-3587 2289, 3583 4932, 3583 3172
Fax: 92-21 35836940
Email: irfan@medicalnewsgroup.com.pk
mkt.dn@medicalnewsgroup.com.pk

Lahore
11485 C-5/4 Alluddin Road, Cantt.
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Light management as effective immune enhancer in poultry production

by Talha Garewal, Muhammad Bakhsh
University of Veterinary and Animal Sciences, CVAS Jhang, Pakistan

Introduction: Lighting has always been an important factor in broiler production as it synchronizes many physiological and behavioral processes in the body. It promotes bird to maintain its body temperature and other metabolic processes enhancing consumption of feed. In addition to it lighting is associated with secretion of essential hormones necessary for growth and reproduction. Light is an environmental factor consists of three different aspects intensity, duration of light and wavelength. It affects the physical activity of broiler chicken. Greater the physical activity will be greater the bone development hence, improving the leg health of bird. For broiler production in solid walls or dark curtains light intensity, duration, and wavelength of light is controlled over the growth period for maximum output.

Light intensity: Light intensity greatly affect the broiler growth. Brighter light increases physical activity of bird while lower light intensity is effective in controlling aggressive acts in birds. Producers most usually use modern electric instrument to increase light intensity. In return it increases physical activity of bird thus decreasing risk of metabolic and skeletal disorders. A research conducted in 1992 by Charles reported that broiler production under low light intensity (5lx) showed greater body weight then were fed at higher light intensity. This is because at lower light intensity bird seems to be inactive. There is Less walking, standing, fighting, feather pecking etc. Extremely low light intensity less than 5lx can cause

retinal degeneration bupthalmos, glaucoma, myopia and damage to lens leading to blindness. Research proved that broiler prefer higher light intensity 20lx in first 07 days of growth period. Broiler prefer blue or green light over red or white.

Light duration: Lighting duration is the second major aspect that will alter the growth rate of broiler. Different photoperiodic regimes have been followed over the years while all of them contribute

Age of bird/day	light intensity/lx
0-7	20
8-14	5
15-21	5
22-28	5
29-35	5
36-49	5

equally in improving broiler production with respect to lighting. Lighting duration is largely depending upon age of chicken. An uninterrupted dark period of 4h should also be given. Standard protocol is enlisted below.

Darkness: Research have proved that darkness worth equal importance as lighting in broiler production. It is hypothesized that short photoperiods early in life reduce feed intake and limit broiler growth. Early growth rate was significantly reduced by longer dark periods but gain from 14-35 days as well final body weight was not affected by lighting programs. Longer dark periods were associated with lower mortality and improved gait score. Broiler reared under long dark periods reported to have better health conditions than reared under long daylight. This phenomenon can be related by number of physiological actions. Melatonin is a hormone secreted from pineal gland in darkness maintains circadian rhythm in

body. Serotonin-N-acetyl-transferase is an enzyme that catalyzes the production of melatonin. It maintains body temperature, several essential metabolic processes feed intake and digestion hence improving growth rate of broiler. Regular dark periods are essential for melatonin production. Birds provided with sufficient dark periods have fewer health related problems including sudden death syndrome and spiking mortality.

Constant lighting: When constant photoperiods have been observed it results in slower growth rate. It is reflection of reduced feed intake. Continuous light disrupts diurnal rhythms. Continuous light have proved to be stressful and greater mortality in birds. Introduction of moderate day length of 16h is preferable. It improves immune response, increased sleep, increased overall activity and improvement in bone metabolism and leg health.

Intermittent lighting: Intermittent lighting proved to be more beneficial than constant. It reduces the incidence of leg disorders and also been shown to reduce sudden death syndrome. Birds fed under intermittent lighting have higher growth rates, higher plasma hormone concentration and higher testosterone level in males than fed under constant lighting. Othani and lesson in 2000 proved that performance of broiler chicken is improved by intermittent lighting of repeated cycles of 1h light and 2h darkness scheduler compared to continuous lighting.

Color: The third major aspect of light that influence broiler production is color of light that deals with wavelength and it exerts variable effects on broiler production. Daylight has relatively even distribution of wavelength from (400-700) nm. Birds sense light through their eyes

(retinal photoreceptors) and through photoreceptor cells in brain. Blue light has calming effect on birds. Red light enhance feather pecking in birds. Blue-green light promotes growth rate in chicken. Orange-red stimulates reproduction. Light of different wavelengths have stimulatory effect on birds that ultimately promotes growth and development in birds. Birds have four photoreactive pigments associated with cone cells that are responsible for color vision, while humans have only three pigments. Birds possess colored oil droplets in their cone cells such that incident light is filtered before it reaches the photoreactive pigment. The ability of chicken to visualize color is similar to that human but they cannot see when exposed to short wavelengths. Specific wavelength of light has impact on broiler production. During early periods short wavelengths appear to stimulate growth. However, when the bird reaches sexual maturity long wavelengths (orange red) increase growth rate. Green light accelerates muscle growth while blue light stimulate growth in older broilers. So blue-green light is preferable in broiler production.

Conclusion: Light management is an important factor of broiler production. Wavelength and intensity are important in behavioral modifications while exposure to darkness is essential for bird health. Light management is widely used to enhance production efficiency in broilers. Restricted lighting schedule should be 16h of light and 8h of darkness. Dark periods allow rest, melatonin synthesis and less stress to birds. Restricted lighting program enhance broiler production by improvements in body weight, FCR, immune status and better health as a result.

Govt to slash power tariff for the agriculture sector

AVN Report
ISLAMABAD - In a move to provide relief to the farming community, the government is expected to announce a reduced power tariff for the agriculture sector in the country. National Food Security and Research Minister Syed Fakhr Imam told a meeting in Islamabad that the ministry of power is moving a summary to the Economic Coordination Committee (ECC) of the cabinet proposing new power tariffs for agriculture sector.



Mr Fakhr Imam said that the issue would be resolved in collaboration with provincial governments since, after the eighteenth constitutional amendment, most of the components of the agriculture sector relate to provincial governments. It may be recalled that the farming community has been voicing their concerns over the rising cost of electricity as the primary input and demanding the government to introduce concessional power tariffs for the agriculture sector, which would help increase yield per acre of various crops. Progressive farmers showed their concern on the withdrawal of concessions on various agricultural inputs and agricultural commodities, while farmers belonging to south Punjab raised the issue of water shortages and theft. During the meeting, farmers and growers raised the point that fuel price adjustment on electricity bills of agricultural tubewells be divided into the whole year with a flat rate. According to farmers' representatives, the cost of production has increased manifold, demanding that the government ensure the availability of fertilizer for the current rabi season and remove GST on pesticides and other preventive products used by growers of cotton ahead of the next Kharif season.

Pharmacokinetics of ... Continued from page 04

the feedlot decreased the incidence of BRD. It also is used for treatment of bovine interdigital phlegmon (foot rot, acute interdigital necrobacillosis, and infectious pododermatitis) associated with *Fusobacterium necrophorum* and *Bacteroides melaninogenicus* and for treatment of infectious bovine keratoconjunctivitis caused by *Moraxella bovis*. Resflor Gold contains both florfenicol and flunixin. It is used for the same BRD pathogens and provides anti-inflammatory activity with the addition of flunixin meglumine, including BRD-associated pyrexia in beef and nonlactating dairy cattle. In pigs, it is used for treatment of swine respiratory disease (SRD) caused by *Actinobacillus pleuropneumoniae*, *Pasteurella multocida*, *Salmonella choleraesuis*, and *Streptococcus suis*. In cats, effective concentrations can be achieved with twice-daily

administration. In dogs, the half-life is short, and frequent administration is necessary to produce effective concentrations. Florfenicol also has been administered to fish. There is a feed additive formulation that also has been approved for catfish (10 mg/kg). Florfenicol is, broad spectrum antibiotic, active against acetyl transferase-producing bacteria and against chloramphenicol resistant bacteria. Unlike chloramphenicol, florfenicol does not contain a nitrogroup, so its use is not associated with aplastic anemia. The antimicrobial properties of florfenicol indicate that it has advantages for use in poultry. Its kinetic disposition, bioavailability, tissue distribution and the residual content in chickens and livestock make it more useful and concerning nature. This drug is characterized by high bioavailability, good tissue penetration and rapid elimination, which are important for the systemic treatment of domestic animals.

بقیہ: اجرائے خوراک کی کمی سے ہونے۔ اور اس وجہ سے پرندے کے ڈھانچے اور انڈے کے خول کی کوئی بری طرح متاثر ہو جاتی ہے۔

وجوہات: خوراک میں وٹامن D3 کی عدم موجودگی یا مقدار میں کمی خوراک کے ذریعے سلفا ادویات کا زیادہ استعمال

وٹامن D2 کی آکسیڈیشن



علامات: متاثرہ پرندوں کی نشوونما بری طرح متاثر ہو جاتی ہے۔ اور دو ہفتوں کے اندر ان کی ہڈیاں متاثر ہو جاتی ہیں۔ چوچ، بچے اور بانی ہڈیاں نرم ہو جاتی ہیں۔ پرندوں کی چال میں نمایاں فرق پیدا ہو جاتا ہے۔ اور وہ گھٹنوں کے بل بیٹھنے کی کوشش کرتے ہیں۔ وزن میں کمی، پروں کی مقدار میں کمی ہو جاتی ہے۔ اور فلاک نہایت ست ہو جاتا ہے۔ شرح بیماری اور شرح اموات 100 فیصد تک بھی ہو جاتی ہے۔

انڈے دینے والی مرغیوں میں علامات 3 ماہ تک ظاہر ہوتی ہیں۔ انڈوں کے خول ہاریک ہو جاتے ہیں۔ اور پیداوار میں شدید کمی ہو جاتی ہے۔ بعض اوقات مرغی فاج کا شکار ہو جاتی ہے۔ اور جلد ہی بغیر خول کے انڈے دینے کے بعد ٹھیک ہو جاتی ہے۔ چوچ، بچے اور بانی ہڈیاں نرم ہو جاتی ہیں۔ سینے کی ہڈی اور پسلیاں اندر کی طرف مڑ جاتی ہیں۔

معائنہ بعد از موت: براہر میں لمبی ہڈیاں نرم ہو جاتی ہیں اور پسلیاں اندر کی طرف مڑ جاتی ہیں۔ اور ان میں سوز ہو جاتی ہے۔ ران کی ہڈی femur اور tibia کے درمیان میں کشیم کی شدید کمی ہو جاتی ہے۔

ران کی ہڈی نرم ہونے کی وجہ سے آسانی سے مڑ جاتی ہے۔ انڈے دینے والی مرغیوں کی ہڈیاں نرم ہو جاتی ہیں۔ اور آسانی سے ٹوٹ سکتی ہیں۔ پسلیوں اور سینے کی ہڈی کے جڑنے کے مقام پر مخصوص قسم کی ساخت بن جاتی ہے۔ اور سینے کی ہڈی بھی مڑ جاتی ہے۔

مرض کی تشخیص: علامات اور معائنہ بعد از موت کے بعد مرض کی تشخیص کی جاتی ہے۔ اور اس کے بعد مندرجہ ذیل اقدامات کئے جاتے ہیں۔

خوراک میں وٹامن کی مقدار کا تجزیہ ضروری ہے۔

متاثرہ پرندوں کو وٹامن ڈی کھلانے کے بعد اس کے اثرات دیکھنے چاہئیں۔ متاثرہ خوراک ایک دن کے چوزے کو کھلائی جانی چاہے۔

علاج: وٹامن ڈی (D) کا ٹیکہ بہتر نتائج دیتا ہے۔ جوان چوزوں میں 50 IU فی کلوگرام جسمانی وزن اور مرغیوں میں 100 IU فی کلوگرام جسمانی وزن کے حساب سے لگایا جاتا ہے۔ ٹیکہ زیر جلد (S/C) یا گوشت میں (I/M) لگایا جاسکتا ہے۔ ٹیکہ لگانے کے بعد خوراک میں وٹامن D3 کا مناسب مقدار میں استعمال ضروری ہے۔

مرض کی روک تھام: خوراک میں وٹامن D3 کی مقررہ مقدار کا استعمال کرنا چاہئے۔ اور خوراک کا باقاعدگی کے ساتھ تجزیہ کروانا چاہے۔ فیڈ میں کشیم اور فاسفورس کی صحیح مقدار ضروری ہے۔ اور پرندوں کو سورج کی روشنی کی فراہمی بھی اہمیت کی حامل ہے۔

وجوہات: خوراک میں موجود تیزابی چکنائیوں (fatty acids) کی آکسیڈیشن فیڈ میں وٹامن ای کی عدم موجودگی یا کمی خوراک میں سلیمنیم (Selenium) کی کم مقدار

علامات: بڑی عمر کی مرغیوں میں ظاہری علامات بہت کم ہوتی ہیں۔ تاہم انڈوں میں سے چوزے نکلنے کی شرح میں کمی واقع ہو جاتی ہے۔ اور بعض اوقات انڈے میں موجود (embryo) انکوبیشن کے چوتھے روز ہی مر جاتا ہے۔ مرنے میں وٹامن کی لیے عرصے تک کی خضیوں پر اثر انداز ہوتی ہے۔ جس میں سے ان کی جسمی صلاحیت میں کمی آ جاتی ہے۔

انسفلومالیا (Encephalomalacia):

اس قسم کی حالت میں پرندے لڑکھڑاتے ہیں اور ان کے جسمانی توازن میں خرابی پیدا ہو جاتی ہے۔ پرندوں کے سر پیچھے یا پیچھے کی طرف مڑ جاتے ہیں اور انگوٹوں میں مختلف قسم کی حرکات پیدا ہو جاتی ہیں۔ یہ علامات عام طور پر دوسرے سے چوتھے ہفتے کی عمر میں ظاہر ہوتی ہیں۔

دوسری قسم کی حالت میں پرندوں کے زیر جلد حصے میں پانی بھر جاتا ہے۔ اور سوزش ہو جاتی ہے۔ متاثرہ چوزوں کی نشوونما راک جاتی ہے۔ اور سنگ دانہ کے چلی جانب نرم سوزش ہو جاتی ہے۔

عام طور پر وٹامن ای کی کمی سے چوزوں کی قوت مدافعت میں کمی واقع ہو جاتی ہے۔ اور فلاک دوسری بیماریوں کا شکار ہونے لگتا ہے حتیٰ کہ ویکسین بھی مقررہ وقت پر لگائی جاتی ہے۔ معائنہ بعد از موت: مردہ پرندے کے دماغ کی سطح پر خون کے دھبے نمایاں ہوتے ہیں اور براؤن رنگ کے مردہ خلیے بھی نظر آتے ہیں۔ دماغ کی جھلیاں بھی سوزش زدہ ہو جاتی ہیں۔ جوان پرندوں کی زیر جلد حصے میں سبزی مائل نیلے رنگ کا مادہ نمودار ہوتا ہے۔ اور بعض اوقات اس میں خون کے دھبے بھی پائے جاتے ہیں۔ اکثر پرندوں میں دل کا غلاف بھی پھیل جاتا ہے۔ عضلات اور چربی میں خونئی دھبے پائے جاتے ہیں۔

مرض کی تشخیص: فلاک کے بارے میں پوچھ گچھ، علامات اور معائنہ بعد از موت سے مرض کی تشخیص کی جاتی ہے۔ جو کہ بعد میں مندرجہ ذیل طریقے سے ثابت بھی کی جاتی ہے۔

خوراک میں وٹامن E کی مقدار کا تجزیہ کرنا چاہے۔ متاثرہ چوزوں میں وٹامن E کا استعمال کرنا چاہے۔ اس استعمال سے چوزے جلد ہی صحت یاب ہو جاتے ہیں۔

متاثرہ خوراک ایک دن کے چوزے کو استعمال کروا کر علامات کا جائزہ لینا چاہے۔ علاج: خوراک میں وٹامن E کی مقدار پوری کرنے کے بعد پانی یا ٹیکہ کے ذریعے سے پرندوں کو وٹامن استعمال کروانا چاہے۔

مرض کی روک تھام: خوراک میں چکنائی کی مقدار کم ہو جاتی ہے۔ فیڈ میں وٹامن E کی متوازن مقدار پائی جانی چاہے۔ خوراک میں اینٹی آکسیڈنٹ کا استعمال بھی ضروری ہے۔ خوراک میں کشیم کی مقدار پوری ہو جاتی ہے۔

وٹامن کے (K) کی کمی



تعریف: وٹامن کے کی کمی سے چوزوں میں خون جمنے کی صلاحیت کم ہو جاتی ہے۔ اور چھوٹے سے زخم سے لیے عرصے تک خون بہنے کی وجہ سے ان کی موت واقع ہو جاتی ہے۔ وجوہات: وٹامن K کی خوراک میں کم مقدار خوراک کو سنور کرنے کے دوران وٹامن K کی صلاحیت میں کمی پانی یا خوراک میں سلفا ادویات کی موجودگی جراثیم کش کیمیائی مادوں کا زیادہ استعمال جس کی وجہ سے آنتوں میں موجود وٹامن K پیدا کرنے والے

جراثیم کی موت واقع ہو جاتی ہے۔ وٹامن K کی کم مقدار رکھنے والے انڈوں سے پیدا ہونے والے چوزوں میں بھی ابتدائی طور پر ہی کمی واقع ہو جاتی ہے۔ علامات: بڑی عمر کے پرندوں کی نسبت جوان چوزے زیادہ جلدی متاثر ہوتے ہیں۔ جن چوزوں میں وٹامن K پیدا کی طور پر کم ہوتا ہے۔ ان میں چوچ کاٹنے کے بعد زیادہ مقدار میں خون بہتا ہے۔ جس کی وجہ سے جسم میں خون کی کمی (Anemia) واقع ہو جاتی ہے۔

بڑی عمر کے پرندوں میں جسم کے اندرونی حصوں میں خون بہنا شروع ہو جاتا ہے۔ اور جسم کے مختلف حصوں میں خون کے دھبے پائے جاتے ہیں جس سے اچانک موت واقع ہو جاتی ہے۔

معائنہ بعد از موت: بیماری سے مرنے والے پرندوں کے زیر جلد عضلات اور دوسرے اندرونی اعضاء میں خون کے دھبے پائے جاتے ہیں۔ جن چوزوں کی موت چوچ کاٹنے کے بعد واقع ہو ان کے سنگ دانہ (crop) اور آنتوں میں خون ملے مرکبات پائے جاتے ہیں۔

مرض کی تشخیص: فلاک ہسٹری، ظاہری علامات اور معائنہ بعد از موت کی مدد سے مرض کی تشخیص کی جاتی ہے۔ علاوہ ازیں متاثرہ چوزوں میں خون کے انجماد کے دورانیہ کا صحت مند چوزوں سے موازنہ کیا جاتا ہے۔

علاج: وٹامن K کے استعمال سے (48-72) گھنٹوں کے اندر چوزے صحت مند ہونا شروع ہو جاتے ہیں۔ مرض کی روک تھام: فیڈ میں وٹامن K کی مقررہ مقدار کھلائی جاتی ہے۔ اینٹی بائیوٹک اور سلفا ادویات کا اندھا استعمال نہیں کرنا چاہے۔

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خصوصیات

لنکاسپر ایڈ-ڈی پاؤڈر وسیع الاثر اینٹی بائیوٹکس کا مرکب ہے جو ای کولائی، مونیا، مائیکوپلازما، سی آر ڈی، گردوں کی سوزش، جوڑوں کے درد اور نظام تنفس کے جراثیموں کے خلاف نہایت موثر ہے۔



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وٹامن ڈی (D) کی کمی



تعریف: وٹامن ڈی کی کمی سے جسم میں کھینچ اور فاسفورس کا توازن بگڑ جاتا ہے۔
بقیہ صفحہ نمبر 15

میں پرندے جلد ہی صحت یاب ہونے لگتے ہیں۔ اور علامات غائب ہونا شروع ہو جاتی ہیں۔
مرض کی روک تھام: ہمیشہ اچھی اور متوازن خوراک کا استعمال کرنا چاہیے۔
خوراک میں اینٹی آکسڈنٹ کا استعمال کرنا چاہیے۔
خوراک میں وٹامن کی مقدار باقاعدگی سے معلوم کرنی چاہیے۔

صحیح تشخیص کے لیے مندرجہ ذیل اقدامات ضروری ہیں۔
خوراک میں وٹامن A کی مقدار معلوم کرنا ضروری ہے۔ خون کے سیرم میں وٹامن کی مقدار کا تعین کرنا چاہیے۔ متاثرہ خوراک ایک دن کے چوزے کو کھلانے کے بعد علامات نوٹ کرنی چاہیں۔
علاج: پانی یا خوراک کے ذریعے تین سے پانچ گنا زیادہ مقدار میں وٹامن A کو استعمال کرنا چاہیے۔ ایسی صورت

پانچ ماہ تک ظاہر ہوتی ہیں۔ بالغ پرندوں میں انڈوں کی پیداوار میں کمی، انڈوں سے چوزے نکلنے کی شرح میں کمی اور انڈوں میں خون کے دھبے پائے جاتے ہیں۔ مرض کی شدید صورت میں آنکھ کی پتلی خشک ہو جاتی ہے۔ جلد اور ناگوں میں موجود قدرتی پیلاہٹ میں کمی واقع ہو جاتی ہے۔ بیمار پرندے نہایت کمزور اور لاغر ہونے کے ساتھ ساتھ لٹھکڑاتے پھرتے ہیں۔
جوان پرندوں میں علامات ۲ سے ۳ ہفتوں میں ظاہر ہوتی ہیں۔ خصوصاً وہ پرندے جو ایسی مرغیوں کے گنے

تحریر: ڈاکٹر ماریہ جمیل، ڈاکٹر عائشہ خاتون، ڈاکٹر محمد کاشف سیسی ڈیپارٹمنٹ آف پیٹھالوجی، فیکلٹی آف ویٹرنری سائنس، فیصل آباد

وٹامن کی کمی سے پیدا ہونے والے امراض:
مرغبانی کی صنعت میں پولٹری فیڈی مسلمہ حیثیت سے اٹکا نہیں کیا جاسکتا۔ یہی وجہ ہے کہ دنیا بھر میں اس صنعت پر بہت زیادہ سرمایہ خرچ کیا جا رہا ہے۔ تاکہ مرغیوں کی خوراک کے تقاضوں کو بطریق احسن پورا



کیا جاسکے۔ خوراک کے اجزاء کی عدم موجودگی یا ان کی مقدار میں کمی پیش کی وجہ سے اکثر اوقات فارمز کو شدید معاشی نقصان کا سامنا کرنا پڑتا ہے۔ پولٹری فیڈ کا فارمولا مختلف اجزاء (جن میں وٹامن اور نمکیات ضروری ہوتے ہیں) کی متوازن مقدار کو سامنے رکھ کر تشکیل دیا جاتا ہے۔ تاکہ پرندوں سے انڈوں اور گوشت کی مطلوبہ مقدار کو حاصل کیا جاسکے۔
وٹامن اے (A) کی کمی:



تعریف: وٹامن اے کی کمی سے کمزوری، نشوونما میں کمی، جسمانی توازن میں خرابی، اور پیداوار میں شدید کمی کے علاوہ نظام انہضام اور آنکھوں میں مختلف قسم کے زخم پیدا ہو جاتے ہیں۔
وجوہات: خوراک میں وٹامن کی مقدار میں کمی خوراک میں موجود وٹامن A کی آکسیدیشن خوراک کی غیر مناسب تیاری
علامات: علامات کا انحصار دو باتوں پر ہوتا ہے۔ (1) خوراک میں وٹامن A کی کم مقدار (2) کم وٹامن والی خوراک کے استعمال کا دورانیہ۔
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