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Graphic Designer & Layout
Sh M Sadiq Ali

Karachi: Mahmood Centre BC-11, Block-9 Clifton
Phone: 021-35872289, 35834932, 35833172
Fax: 021-35836940
E-mail: irfan@medicalnewsgroup.com.pk
mkt.dn@medicalnewsgroup.com.pk
Website: www.avnpk.com

Lahore: 1485 C-5/4 Alluddin Road, Cantt.
Phone: 042-36676296 Fax: +92-42-36673518
Email: g.hassani@gmail.com

Islamabad: Phone: 0300-9710774

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Pakistanis spent Rs450 billion on Eid this year

10% more animals were sacrificed this year in comparison with 2020

AVN Report

ISLAMABAD - Around Rs450 billion worth of economic activities took place on Eid-ul-Azha in the country this year due to the improved COVID-19 situation and the ban on Hajj.

About 10% more animals were sacrificed this year compared to the number in 2020 - indicating an increase in the circulation of wealth.

Circulation of wealth through business is essential for a country to survive and run its economy.


The business of transporting animals from markets to buyers' homes continued to run into billions of rupees.




According to an estimate, about four million goats and sheep and three million cows were sacrificed.

There has been a turnover of over Rs2 billion in the country on animal fodder. This business employs fodder sellers as well as labourers. After bringing the sacrificial animal home, money is spent on their decoration.

Butchers earned around Rs25 billion. The demand for professional and seasonal butchers to slaughter sacrificial animals reached its peak on Eid.

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Sorbitol.....120000 mg

Thymus Essential Oil.....30000 mg

Oregano Essential Oil.....30000 mg

Propylene Glycol.....200000 mg

Glycerol.....300000 mg

purified water (carrier) upto..... qsp 1 Ltr

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Over 2.5m tons meat to be produced in FY 2021-22

AVN Report

ISLAMABAD - The government has set a target to produce about 5.219 million tons of meat during the next fiscal year to meet domestic requirements and export.

According to an official document issued recently during the period under review, about 2.4 million tons of beef were produced. In contrast, mutton production targets were fixed at 782,000 tons to tackle the local consumption.

During the current fiscal year, the domestic meat output witnessed about 5.2 per cent growth as local production of the commodity as mentioned earlier reached 3.303 million tons as against the output of 3.139 million tons of the same period of last year. Beef production grew by 3.4 per cent and mutton 2.3 per cent respectively as 2.461 million tons of beef and 782,000 tons of mutton produced during the period under review compared to the output of the same period of last year.

The poultry production targets for the fiscal year 2021-22 were fixed at 1.997 million tons as the output of

poultry registered with about 9.2 per cent growth during the outgoing fiscal year added.

From July-February, the poultry output was recorded at 1.206 million tons compared to the output of 1.105 million tons of the year 2019-20.

To promote agriculture and develop



the livestock sectors, several projects and programs are envisaged to improve the food and agriculture sectors, such as the Prime Minister's Agriculture Emergency Program, Food Security Information System (FSIS) and Agriculture Transformation Plan.

The government has also proposed special initiatives for developing the agriculture sector and prosperity of the farming community in the country, as the special emphasis is being paid on small landholders up to 12.5 acres.

In this regard, the banking sector in the country was mobilized to extend credit

facilities to far-flung areas to provide cheap loans to growers, particularly small landholdings, to enhance agriculture output and alleviate poverty.

The government intended that every farming household be provided Rs 250,000 interest-free loan for

purchasing agriculture inputs and Rs 200,000 for the purchasing tractor and other machinery to bring innovation and technological advancement in the local agriculture sector.

To discourage the role of the middle man and exploitation of farmers, marketing infrastructure would also be developed and improved, besides giving incentives and extending supports to farmers for establishing storage facilities that would also ensure proper rate of return to growers.

The development of marketing services, cold storage facilities, and strategic building reserves of food commodities would also help curb the menace of hoardings, an artificial shortage of food commodities, and extra profiteering that would lead the country towards price stabilization in local markets.

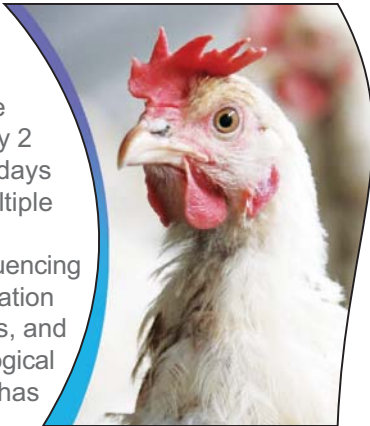
India probes its first human death from bird flu

AVN Report

NEW DELHI - India is investigating its first documented human death from bird flu after an 11-year-old boy succumbed to the disease recently, the health ministry said.

The boy lived in Gurgaon outside New Delhi and was also suffering from leukaemia and pneumonia.

He was admitted to hospital in the capital on July 2 and died ten days later from multiple organ failure. Genome sequencing and virus isolation are in process, and an epidemiological investigation has been initiated,



the ministry said late Wednesday. Avian influenza occurs mainly in birds and poultry, with cases of transmission between humans extremely rare.

H5N1 first broke out in 1997, then spread between 2003 and 2011, while H7N9 was first seen in 2013.

Two strains of bird flu, H5N1 and H7N9, first seen in 2013, led to human contamination in Asia through infected birds.

H7N9 has infected 1,668 people and killed 616 since 2013, according to the UN's food and Agriculture Organization.

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Karachi dairy farmers announce to hike milk prices by Rs 20 per litre

AVN Report

KARACHI - The Karachi Dairy and Cattle Farmers Association has announced to increase milk prices by Rs 20 per litre from July. Shakir Umar Gujjar, President, Dairy and Cattle Farmers Association, said the inflation had compelled them to jack up the milk prices.

"The milk prices are being increased due to a hike in the diesel price and production expenses."

Replying to a question, he added that 95 per cent of milk being supplied in Karachi is pure; only five per cent of the dairy farmers are involved in the supply of counterfeit milk.

Shakir Umar Gujjar urged the government to review the feed export policy. Earlier in March, the Sindh High Court (SHC) issued notices to the Sindh government, Karachi commissioner and other respondents on a petition challenging a recent hike in fresh milk prices. The petitioner had stated before the court that per litre of milk is being sold for as high as Rs 140 against an official rate of Rs94 in the city. He had said authorities have failed to enforce official rates and requested the bench to direct them to take measures to bring down milk prices.



'Rescued circus animals to be released into natural habitat'

AVN Report

KARACHI - Several wild animals confiscated a day earlier from a circus in Mowach Goth were recently shifted to the wildlife department. The animals kept in cages included a male hyena, a male fishing cat, four porcupines, two jackals, two pythons and a honey badger. The wildlife department staff also took into custody two suspects.



"The staff is now looking after the animals and soon will be released into their habitat," said Inspector Naeem Mohammad Khan, the official who led the raiding team.

The department, he pointed out, was investigating the case, and action would be

Continued on Page 18

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The threat of rabies by the bite of stray dogs

by Lt Col Retd Dr Hammad Ahmed Hashmi
National Sales and Technical Manager
(Companion Animals Products),
Snam Pharma

Stray dogs pose a great threat when they are Rabid and bite the human population. Rabies has profound public health, social and economic impacts on developing countries, with an estimated 59,000 annual human deaths rabies globally. Mass dog vaccination effectively eliminates the disease. Still, it always remains challenging to achieve due to the high proportion of roaming dogs that cannot be readily handled for parenteral vaccination, for many many decades.

Rabies is a life-threatening disease with no cure once bitten by a Rabid Dog, except for injections of Immunoglobulins which are extremely expensive.

- A vaccine-preventable viral disease of all terrestrial mammals, including humans
- Rabies occurs in more than 150 countries and territories worldwide
- Dogs contribute to ~ 99% of all rabies transmission to humans (WHO)
- Over 55,000 people die of rabies annually worldwide; > 95 % in Asia and Africa (WHO)



Figure 1 Countries at Risk Worldwide



Figure 2 Incidence of human deaths from Rabies in Asia, 2004

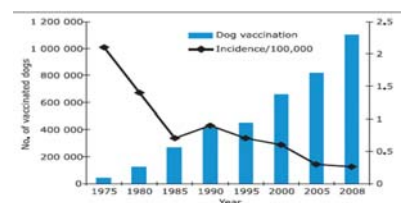
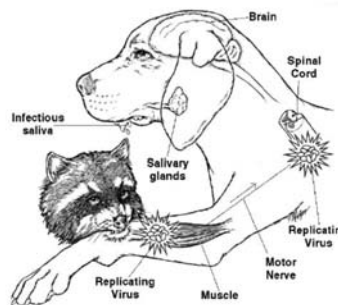


Figure 3 Impact of mass dog vaccination campaign on human rabies incidence

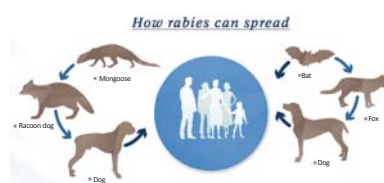
Vaccination of stray dogs is a colossal job. Getting hold of a stray dog is a tricky business since you don't know whether it is infected with rabies or not, as it is said that consider every dog as a Rabid Dog unless it proves otherwise. So that's a very dangerous affair. Even a

Dead Rabid Dog poses a seriously dangerous threat.

- The virus can survive up to 24 hours in an animal that died of rabies (but cannot survive temperatures beyond 22°C).
- However, the virus will survive in a dead carcass for extended periods at low or freezing temperatures.



How the Rabies Spread?



Why is Mass Vaccination necessary against Rabies?

Mass Vaccination is of paramount importance as the safety of human lives merits the topmost priority. Vaccinating stray dogs is a colossal and risky affair, as the fear of Rabies is a real-time life-threatening disease as the stray population dogs is a potential carrier for the Rabies or they may be infected with Rabies. Trap Neuter Vaccinate and Release (TNVR) is a doable option, but it will take a lot of time to vaccinate the entire population of stray dogs.

Management of Stray Dogs in Europe and Pakistan.

In Europe, they have eliminated all the stray population by adoption. The success story of Holland is commendable in this regard.

There are different models for controlling stray dogs;

- **The Pune model for controlling stray dogs** (~80% decline)
 - Neutering
 - Anti-rabies vaccination
 - Right ear clipped to indicate neutering
 - Returned to its territory after 2-4 days
- **The Bangladesh model** (50 % decline)
 - Mass dog vaccination for three years
 - Better management of dog bite victims
 - Increased availability of human rabies vaccines (FOC)
- **In Pakistan**, efforts are in hand to follow the **Turkish Model. TNVR** (Trap Neuter Vaccinate and Release), but this is a process that will take many years for dealing with a large number of stray dogs

population. In Pakistan, there is no authentic data available on the stray dogs' population. The government of Punjab (L&DD Department) and the Government of Sind with NGOs have taken the initiative in this regard.



- A pilot project, '**Rabies-free Karachi**' initiated in 2018 by KMC and Indus Hospital, Karachi
- Vaccination
- Neutering
- Public awareness



- **Major Weaknesses/hiccups in Pakistan in controlling the Rabies.**
 - Lack of Public Awareness on Rabies & Dog Bite
 - Lack of a surveillance system (WHO)
 - Lack of Lab-Based Diagnostic setup
 - Limited access to vaccines & immunoglobulin
 - Inadequate resources & political support
 - Weak collaboration on the issue among govt. depts. & sectors including health authorities, livestock & veterinary science authorities & local Govt.
 - o No comprehensive national rabies control program
 - o Existing rabies control activities are being carried out by Metropolitan/ Municipal

Corporations/ Committees, Cantonments, etc. in their respective areas

- **Contribution of University of Veterinary and Animal Sciences, Lahore** 1980s: Lab-based Rabies virus diagnostic abilities developed
- The 1990s: Prevalence studies undertaken
- The 2000s: HEC-funded project undertaken for "Rapid diagnosis and immunoprophylaxis studies on major viral diseases of dogs (Rabies, CDV, CPV)."
- 2010: Enhanced diagnostic facilities made available at UDL (ELISA, RT-PCR, iFAT)
- Research on rabies virus in animals (dog, horse, mule, bat, etc.) and rabies immunity titer dynamics in humans
- Annual Rabies Days, Routine Vaccination & Campaigns, Workshops and Seminars for last ten years
- A retrospective study data of dog bites in Lahore (2004-2013, a study by Dept. EPH, UVAS)
 - o Approx. 85,941 cases of dog bites were recorded in the Lahore region
 - o Frequency of type of dog involved in dog bite

§ Stray dog: 63%

§ **Pet dogs: 37%**

o Seasonal trend of dog bites

§ **Summer (23,870)**

§ Winter (16,620)

§ **The proposed strategy** (to be executed by LMC)

§ Dog-catching squad

§ Neutering of male dogs (UVAS - Training and Surgeries)

§ Anti-rabies vaccination of all stray dogs

§ Ear clipping for ID of Neutering

§ Release to the same area within 2-4 days

§ Initiating an application/ helpline (Punjab IT Board)

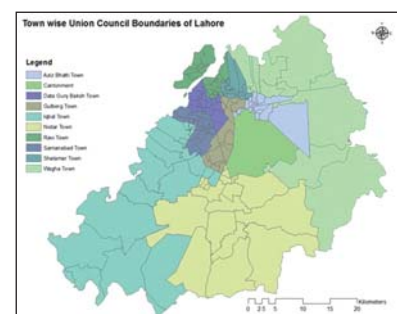
§ Non-catching

§ lactating mothers and puppies

§ puppies younger than six months

§ already neutered sterilized dogs

§ No relocation or dumping of stray dogs, outside city limits



What is the alternate viable solution?

Mass vaccination of the stray dogs' population through Bait Vaccination against Rabies, Oral Rabies Vaccination (ORV)

Continued on Page 17

Theileriosis (East Coast Fever) is a parasitic disease of both domestic and wild animals, prevalent worldwide. It is a tick-borne disease caused by various species of Theileria parasite, including *Theileria annulata*, *T. parva*, *T. lestoquardi*, *T. luwenshuni*, *T. orientalis*, *T. buffeli*, etc. Theileria infects both white blood cells and red blood cells of the mammalian hosts successively. The disease is economically important, causes huge economical losses and has high morbidity and mortality rates. The disease has no direct effect on human health. The disease is highly incident in exotic breeds and crossbred cattle irrespective of age groups in tropical areas.

Transmission:

Theileria parasite is transmitted through biting the ticks and spreading from one infected animal to the other. These ticks have been classified into three families, out of which two families are of veterinary importance viz Argasidae and Ixodidae, commonly called soft ticks and hard ticks, respectively. These ticks preferably attach to the animals around their tails, udder, inner thighs, brisket, face, necks, and ears, etc., for blood-feeding. These ticks get the infection by biting the infected animals. When these infected ticks bite the other healthy animals, it takes 1-3 weeks (incubation period) to build significant Theileria parasite concentration in the bitten animals (host). Also, the biting flies, infected needles, and equipment may spread this infection too.

Clinical Signs and Symptoms:

As the Theileria parasite grows and reproduces in the host's red blood cells, the host immune system attacks its red blood cells to kill the parasite. Unfortunately, it destroys its red blood cells, leading to a miserable condition called

THEILERIOSIS

An Insight

by **Arsalan Khan**
Veterinary Research and Disease
Investigation Center, Dera Ismail Khan
Muhammad Jamil
PARC Arid Zone Research Centre, Dera Ismail
Khan, College of Veterinary and Animal Sciences, Jhang



anaemia. Haemoglobin levels are adversely affected in positive cases and reduced up to 8mg/dl. In severely infected cases, the haemoglobin level is reduced to 3mg/dl. The remarkable clinical signs of the disease exhibited by the infected animals are fever of >106°F, enlarged lymph nodes, loss of condition of the

animals, respiratory distress, suppressed cough, pulmonary oedema, severe, anaemia, gastroenteritis, diarrhoea, lethargy, loss of appetite, intolerance to exercise, frothy mouth, drop in milk production, pale or yellow gums and conjunctiva, nasal and ocular discharges, corneal opacity, dyspnoea, hemorrhagic mucosal and serosal surface, etc. The pregnant animals may abort. While the animals left untreated get recumbent, their temperature usually falls, they have a frothy mouth, and the animals may die in 10-15 days after infection. The disease has a high morbidity rate of 100%, and the mortality rate may reach 45-90%. *Theileria* can be diagnosed based on clinical signs and microscopic examination of the Giemsa stained thin blood smear.

Treatment and control of the disease

Control of the disease can be achieved using different means, including chemotherapeutic control and biological control. The most authentic and effective control is the use of parasitocidal drugs harmless to the host. But, due to the emergence of resistance, in some cases, the efficacy becomes marginal. However, buparvaquone is the most effective drug against theileriosis, and the oxytetracycline antibiotic is used simultaneously. Animals found positive for theileriosis are treated by intramuscular injections of Butalex® (buparvaquone) @2.5 mg/Kg after cold water hosing of the animal's head for reducing body temperature. After commencing treatment, pyrexia reduces, animals resume eating and are healthy and sound after treatment, but lymph node swelling persists for 15-45 days. Moreover, the animals are administered acaricidal drugs for ticks' elimination. In some countries, vaccines are also available against theileriosis.

Viruses against Bacteria

(A new approach to combat Antimicrobial Resistance)

by **Muhammad Jehangir Asghar,**
Muhammad Bilal Irshad
University of Veterinary and Animal Sciences,
Lahore (Sub-campus Jhang)
Zulqarnain Baqar
Centre for Applied Molecular Biology CAMB, Punjab
University, Lahore

Antimicrobial Resistance

Most of the prevalent diseases are of bacterial origin. And the antibiotics are being prescribed in general practice by human physicians and veterinarians in each case. Bacteria are living organisms and they have their defense mechanism too. They evolve with time according to the condition and enemy. Antibiotics are the most common enemies they're facing and they are evolving against them. Antibiotic resistance refers to bacteria's capacity to resist being treated or prevented by antibiotics. It is one of the most serious pathogenic dangers since it not only causes fatal infections but also causes prolonged sickness, huge financial costs, and adverse outcomes. This is a major global issue, especially in developing countries. Antibiotic resistance is expected to increase

by 70% in the Asia, making it a county-wide and global threat. Pakistan is a South Asian developing country with a high rate of antibiotic resistance, posing a serious regional and global concern. Our country owes this to "misuse and overuse" of these medications and making the options narrower for treatment of infections.

Factors Effecting

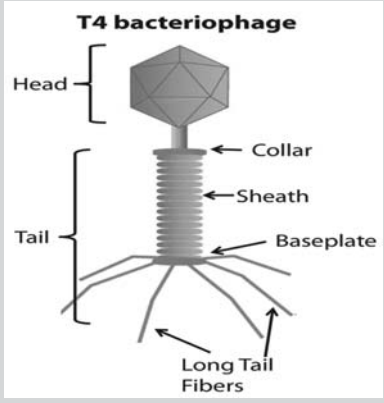
- Quacks
- Lack of proper diagnosis
- Using broad spectrum antibiotics
- Self-medication

Due to this issue of antimicrobial resistance world is looking forward to some alternate methods of combating bacteria. These long time ago discovered viruses are under the light again in this era. Now scientists are trying to develop the products consisting of these viruses to treat bacterial diseases. This technique is called "Phage Therapy" and the viruses used are called "Bacteriophages"

What are Bacteriophages?

Simply they are viruses who can kill bacteria without harming other cells. They are most abundant

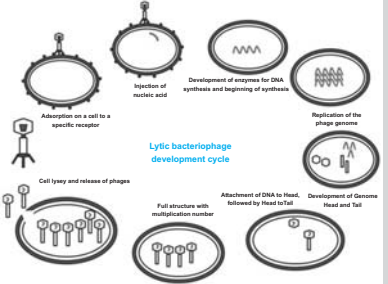
entities on Earth having a lot of potential. Around 90 years ago they were found and their potential was tested against the bacteria. Phage Therapy or Phage Treatment, which is roughly defined as the use of phages to decrease or eradicate bacterial population in animals, became popular. For the first time it was done against the bacteria *Vibrio Cholera* and was found successful. Plague was also treated by using bacteriophages. Phage treatment has shown varying degrees of effectiveness in animals, plants, and humans. Phages offer a



number of potential advantages versus antibiotics, but they also have certain drawbacks.

Advantages

- Bacteriophages can target the specific bacteria only and that's why we need to specifically diagnose the causative agent or use a cocktail of bacteriophages.
- Phages can evolve themselves against the bacteria who are becoming resistant to them.
- They can grow at the site of infection so this local growth increases their availability at site.
- They don't have side effects



Disadvantages:

- They can trigger the immune system and it will clear them immediately.
- They can induce toxic properties

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Delta variant of coronavirus in Pakistan

by Aoun Muhammad, Sarmad Rasheed, Faheem Abbas, Ghazanfar Abbas
College of Veterinary and Animal Sciences, Jhang

My eyes are wet with my world to see the outbreak of the coronavirus. Why not? The disease shows some sad times, even for my grandparents, who never had it in their lifetime. Science and technology have made great strides, but today, the entire world has failed to produce the permanent COVID-19, which was identified in Wuhan, China. This coronavirus gives us an infectious and contagious respiratory disease, more infectious than a worm.

Unfortunately, those who have the disease are discriminated against in society. This global epidemic has told us that nature is a powerful force. Before the epidemic, I had heard many countries claim that they have the most power in the world. The epidemic has told the world that no country is fully developed socially, economically, scientifically, and technologically. They all still need to grow; improve, at least to the point where they will find a solution for COVID-19. Life stands amid this epidemic not only in China and India but also worldwide. This is the time for countries not to fight or quarrel over the origin of the disease. This is the time to stand in solidarity with each other to find a lasting solution to this epidemic.

Nevertheless, the differences between the various countries are clear. Is the epidemic extremely painful and life-threatening? Of course, it is. The so-called catastrophic disease has plagued the world and taught people how to survive.

The most dangerous thing is that anyone who had the virus inside would not know at first, and by the time it was discovered, he would not know how many people he had infected at that time. After the outbreak, many studies revealed that the disease had spread from person to person but from a species that had not been identified.

As with high-quality living things, genetic mutations can change mutations. According to WHO, at present, all infections, including

SARS-CoV-2, infections caused by Coronavirus, change over time. Most mutations do not affect the areas of infection. In addition, a few changes may affect the structures of infection, for example, how well they spread, the severity of an illness, or the display of antibodies, correction drugs, display devices, or other lifestyle and social factors.

During addressing to the television, the Pakistan PM said

Variants: There are four common variants such as Alpha (UK), Beta (South Africa), Gamma (Brazil), Delta (India), Eta (multiple countries), Iota (USA), Kappa (India) and Lambda (Peru). Patients included a four-man and a female prisoner roaming around Karachi Prison and a girls' prison, respectively. Also, the National Command and Operation Center (NCOC) has confirmed the availability of a variety of Covid varieties, including delta (Indian), beta (South African) and alpha (UK), in Pakistan and the identification of their cases in May and June.

What is the Delta variant?

According to the CDC, the Delta variant, also known as B.1.617.2, can spread more easily. The strain has mutations on the spike protein that make it easier for it to infect human cells. That means people may be more contagious if they contract the virus and more easily infect others. It is now the dominant strain in Pakistan.

Researchers have said that the Delta variant is about 50% more contagious than the Alpha variant, first identified in the U.K., according to National Command and Operation Center (NCOC). Alpha, also known as B.1.1.7, was already 50% more contagious than the original coronavirus first identified in China in 2019.

According to Yale Madison, public health experts estimate that the average person who gets infected with Delta spreads it to three or four other people, compared with one or two other people through the original coronavirus strain. The Delta variant may also escape protection from the vaccine and some COVID-19 treatments, though studies are still ongoing.

Symptoms: Delta may cause different symptoms from the original strain. Cold-like symptoms including headache, Runny nose and a sore throat, Loss of smell, Shortness of breath, Fever and Persistent cough.

Pathogenesis of Delta Variant

Variant: German experts recently explained why the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) delta variant is more infectious and pathogenic than circulating. They have revealed that increased ability to induce cell-to-cell fusion (syncytia) and reduced susceptibility to the vaccine and infection-induced antibodies make the delta variant more pathogenic.

What does the Delta variant mean for the unvaccinated?

People who haven't been fully vaccinated against COVID-19 are most at risk. Delta variant does seem to be more likely to lead to hospitalization and death, particularly among unvaccinated people. Kids and younger adults who haven't been vaccinated may be susceptible as well. In the U.K., children and unvaccinated adults under age 50 were 2.5 times more likely to become infected with Delta.

After a decline in COVID-19 cases, the infections are on the rise again. We fear that this new variant can strike Pakistan badly

What does the Delta variant mean for the vaccinated?

Scientists are looking at how the Delta variant can cause breakthrough cases of infections among fully vaccinated people. So far, they seem to be rare. The prevalence of the delta variant, along with the sluggish vaccination rate, are key factors in a recent 10 per cent increase in the number of COVID-19 cases in the United States, said CDC director Rochelle Walensky, MD, MPH, in a July 1 briefing. Delta is the fourth "variant of concern" on the World Health Organization (WHO). WHO director-general Tedros Adhanom Ghebreyesus, PhD, said delta had now been identified in 85 countries and called it "the most transmissible of the variants identified so far."

Delta variant in Pakistan

As the delta variant spreads, Pakistan fears the fourth wave of

COVID-19 and the outcomes may be worse than before. There were reported 25 deaths and 830 new cases in a single day by NCOC. The number of active cases was 33,390, and 2,223 patients were admitted to hospitals as of July 6. This spread comes despite the positivity ratio, which shot up to 9% in May, recently hovering between 2% and 4%.

This new variant of coronavirus, known as the Delta variant, is making 50% of the total cases in Pakistan, said Dr Nausheen Hamid, the secretary of Federal Parliamentary Health. As of concern about a vaccine against this new variant, Dr Nausheen said that no vaccine is still 100% effective against this new variant. But if someone gets a jab, the variant will not affect their health badly, affecting unvaccinated ones.

On July 13-2021, the Sindh Health Department confirmed positive 35 cases of a new variant of COVID-19 in Karachi.

In the coming two days, out of 2065 cases, 65 were confirmed positive. Adding the one contrasting fact about this variant, the confirmed cases were carrying the extreme symptoms of the virus. A family of five living in the city's Lyari area turned out to be COVID-19 positive with the delta variant. At present, all five are under treatment. In July, 18 cases of the Delta variant have been detected.

On behalf of data issued by NCOC the overall cases in Pakistan, the NCOC confirmed 1590 cases of the new Delta variant out of 43790 tests. The NCOC has taken an important decision about the control and spread of this new variant of COVID-19. So, in response to the decision, vaccination is also necessary for domestic travel onward from August 1.

Many guidelines by the government set infection control, and we must follow them; however, get yourself vaccinated as soon as possible. Guidelines are:

- Wash your hands for at least 20 seconds after touching any area/surface
- Close your mouth while sneezing and coughing
- Keep social distance and avoid gatherings

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PER DOSE CONCENTRATION

Infectious bronchitis virus (M41 strain)..... ≥ 105.8 EID50
Infectious bronchitis virus (KM91 strain)..... ≥ 106.1 EID50
Newcastle disease virus (LaSota strain)..... ≥ 108.4 EID50
Infectious bursal disease virus (CAG strain).... ≥ 106.4 EID50



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Comparative analysis of COVID-19 vaccines and immunization aspects

by **Dr Muhammad Adnan Saeed**
Lecturer (Microbiology)
The University of Veterinary and Animal
Sciences, Lahore (Jhang Campus)

COVID-19 is the third in line coronavirus pandemic in recent history, following SARS (2003) and MERS (2012). At present, more than 195 million cases have been reported globally. The deadly pandemic has claimed more than 4.1 million people worldwide and 23,087 individuals in Pakistan. The causative agent "SARS-CoV-2" belongs to the Coronaviridae family. It's an enveloped virus with a genome consisting of a single molecule of linear, positive-sense, single-stranded RNA. Clinical signs of ailment include fever, dry cough, breathing shortness and tiredness. At the same time, some individuals may experience sore throat, diarrhoea, conjunctivitis, headache, loss of taste and smell, skin rashes, joint pain and aches. COVID-19 is preventable through vaccination.

COVID-19 Vaccines: The vaccine is a preparation used to activate the host's immune system by stimulating antibodies and providing immunity, prepared from the causative agent, its products, or a synthetic substitute. Multiple manufacturers have prepared efficacious vaccines aimed at prevention of COVID-19 throughout the world. Active research on vaccine development is still carried on as 184 vaccinal products are in the pre-clinical phase of development while 108 products are in the clinical phase. However, the World Health Organization (WHO), in its emergency use listing and prequalification (EUL/PQ) mechanism, has listed 22 vaccine products. The technical summary of selected vaccinal products is presented in Table 01.

Table 01: Summry of selected COVID-19 Vaccines

Vaccine Name	Manufacturer	Type	No. of doses	Effective against current variants	Emergency Use Authorization	Storage Temperature
Pfizer-BioNTech COVID-19 Vaccine	Pfizer Inc. USA	Nucleoside modified mRNA	02 (21 days apart)	Yes	Recommended by WHO FDA authorized	-70°C
Moderna Vaccine-mRNA-1273	ModernaTX, Inc. USA	mRNA-based vaccine encapsulated in lipid nanoparticle (LNP)	02 (28 days apart)	Yes	Recommended by WHO FDA authorized	-20°C
Valneuvir	University of Oxford and AstraZeneca, UK	Viral Vector (Vector: chimpanzee adenovirus ChAdOx1)	02 (14-12 weeks apart)	Yes	Recommended by WHO Not by FDA	2°C -8°C
Novavax (NVX-CoV2373)	Novavax, Inc. USA	Recombinant nanoparticle prefusion spike protein formulated with Matrix-M TM adjuvant	02 (21 days apart)	Data Needed	Not Approved, Under Process	2°C -8°C
Janssen COVID-19 Vaccine (Ad26.COV.2S)	Johnson & Johnson, Janssen Biotech Inc. USA	Viral Vector (Vector: Replication-incompetent adenovirus serotypes 26)	01	Yes	Feb. 27, 2021 FDA authorized	2°C -8°C
Sputnik-V Vaccine	Gamaleya research institute, Russia	Viral Vector (Vector: adenovirus serotypes 5 and 26)	02 (21 days apart)	Unknown data needed	Registered in Russia on 11 August 2020 Under process in WHO	2°C -8°C (Dry Form) -18.5°C (Liquid Form)
Sinovac-CoronaVac	Sinovac Biotech, China	Inactivated, Produced in Vero cells	02 (2-4 weeks apart)	Yes, Further data needed	Interim recommendation by WHO	2°C -8°C
Sinopharm	Sinopharm/China National Pharmaceutical Group, China	Inactivated, Produced in Vero cells	02 (3-4 weeks apart)	Yes, Further data needed	Interim recommendation by WHO	2°C -8°C
Covaxin	Bharat Biotech	Inactivated	02 (28 days apart)	Unknown data needed	Under Process in WHO	2°C -8°C
Ad-SaCoV, CanSino Bio	CanSino Bio, China	Viral Vector (Vector: adenovirus serotypes 5)	01	Unknown data needed	Under Process in WHO	2°C -8°C

Typical Phases of Vaccine Development: At first, a promising antigen that can elicit a protective immune response to produce neutralizing antibodies is identified. Memory B-cells of the immune system "keep a record" of a particular antigen in the body for a rapid and overwhelming response in subsequent antigen exposure. For SARS-CoV-2, the most commonly used antigen is a protein called the spike, or S protein, which the virus uses to enter and infect host cells. Typically, a

vaccinal product meant for human beings is developed in the following stages. (Same goes for COVID-19 vaccines).

- **Preclinical trials:** The potential vaccine is used on animals to make sure it is safe to use.
- **Phase 1 trials:** The potential vaccine is used on a small number of healthy volunteers to determine an adequate dose and look at safety.
- **Phase 2 trials:** More human volunteers get the vaccine and blood tests to make sure that the vaccine is inducing actual immunity in people.
- **Phase 3 trials:** A large group of humans get the vaccine, and there is a "placebo" group. Both groups are studied to see a difference between the disease rates in the vaccine group vs the placebo groups. Vaccines can be approved by the US Food and Drug Administration after Phase III trials indicate effectiveness and safety.
- **Phase 4 trials:** Scientists continue to study the safety and efficacy after large scale population vaccination has begun.

Types of COVID-19 Vaccines: In general, all types of vaccine intend to expose antigen to the body's immune system as this exposure will result in the production of specific neutralizing antibodies which will tackle free invading virus particles, production of memory cells (for prompt future production of antibodies) and cell-mediated immunity for recognition and destruction already infected body cells. Vaccines types vary based on how antigen exposure occurs in the body. Table 02 summarizes the types of COVID vaccines under the clinical phase of development.

Table 02: Types and % of COVID-19 Vaccinal products under development (WHO List)

Platform	Candidate vaccines (no. and %)	
PS	Protein subunit	36 33%
VVnr	Viral Vector (non-replicating)	16 15%
DNA	DNA	10 9%
IV	Inactivated Virus	16 15%
RNA	RNA	18 17%
VVr	Viral Vector (replicating)	2 2%
VLP	Virus Like Particle	5 5%
VVr + APC	VVr + Antigen Presenting Cell	2 2%
LAV	Live Attenuated Virus	2 2%
VVnr + APC	VVnr + Antigen Presenting Cell	1 1%

a) The mRNA Vaccines: This is rather an unconventional approach for developing a vaccine. mRNA-based vaccines for COVID-19 are the only examples available for mass use. Previously, mRNA vaccines have been studied before for flu, Zika, rabies, and cytomegalovirus (CMV). Although clinical trials and lab testing have indicated that these vaccines are safe, more data will be needed to establish their long-term safety. Messenger RNA (mRNA) delivers instructions from genes encoded in DNA to protein-making factories inside cells. Upon injecting an mRNA vaccine, mRNA enters myocytes (Skeletal muscle cells); using the myocytes' biosynthetic machinery, injected mRNA codes for the synthesis of the spike protein (S protein) of SARS-CoV-2. The immune system recognizes the S protein as "foreign," mounts a brief attack against any cells bearing it, then retains "memory" of this viral protein so it can go into action instantly if it encounters

the real virus. Through a series of steps, the immune system steps B lymphocytes are increased to give rise to plasma cells and memory B cells. Plasma cells secrete neutralizing antibodies to tackle any invading virus (SARS-CoV-2) particles to prevent the body from getting an infection. While memory cells keep a backup for antigen recognition, result in quick antibody production upon subsequent exposure to virus particles. Vaccines developed by Pfizer/BioNTech and Moderna are examples of this kind.

b) Inactivated Vaccines: This is a conventional and trusted method of virus vaccine development. Inside a laboratory, SARS-CoV-2 is propagated in susceptible cultured cells (e.g., Vero cells) to produce billions of virus particles (biomass). These newly produced virus particles are killed (inactivated) via chemical or physical methods. After inactivation, these viruses cannot produce disease but can sensitize the immune system to produce specific antibodies when injected into the body. These antibodies can fight with any later "real" viruses. Sinovac and Sinopharm are examples of such vaccines.

c) Vector-based Vaccines: Gene coding for the S protein of coronavirus is inserted into the genome of a vector virus (e.g., some strains of Adenovirus). Vector virus is a "harmless" non-infecting virus. When such a modified vector virus enters the host cells, it produces the S protein of coronavirus by using the host cell's biological machinery for protein synthesis. Once the coronavirus protein is produced, the same mechanism as described for mRNA vaccines is followed to produce protective antibodies. Vaccines developed by AstraZeneca/Oxford, Johnson & Johnson and Sputnik-V are the major examples of vector-based vaccines.

d) Protein subunit Vaccines: The idea behind subunit vaccines is that rather than entering the whole virus inside the body, only its piece (a purified protein) could be entered. Purified protein must be able to act as an antigen in the body. The large volume of such protein can be produced in-vitro via recombinant DNA technology. This sort of vaccine is considered quite "safe". Novavax COVID-19 vaccine is one example in which spike glycoprotein is used.

Virus Variants and vaccine efficacy: All viruses, including SARS-CoV-2, the virus that causes COVID-19, change over time. Most changes have little to no impact on the virus properties. However, some changes may affect the virus's properties, such as how easily it spreads, the associated disease severity, or the performance of vaccines, therapeutic medicines, diagnostic tools, or other public health and social measures. The first strain identified in Wuhan, China, is considered wildtype or a reference strain. Mutations in the genetic makeup of gene encoding Spike protein of coronavirus leads to substitution in the amino acid sequence of spike protein, giving rise to a "new variant". The efficacy of vaccines against variants is described in Table 2. Major variants are listed below.

Continued on Page 18

Antimicrobials are drugs that destroy microbes, prevent their proliferation, or prevent their pathogenicity. Since the accidental discovery of penicillin by Alexander Fleming, antibiotics have saved millions of lives and are thus, truly named "wonder drugs". The advent of antimicrobials has revolutionized medicine by controlling several infections. Antimicrobials are widely used for therapeutics, prevention, and as growth promoters too. Their blue diamond role in preserving infection among humans & animals can be ratified with no compunction. On the flip side, humanity is on the verge of emerging antimicrobial resistance with the ubiquitous use of antibiotics. Lack of properly observing the dosage regime, indiscriminate self-medication, quackery tactics, and poorly administered national action plans are major contributing factors for emerging antimicrobial resistance. Thus, senses for the rational use of antimicrobials must prevail. As to put in the words of Alexander Fleming: "It is not difficult to make microbes resistant to penicillin in the laboratory by exposing them to the concentrations not sufficient to kill them." Antimicrobial resistance has been recognized as a principal public health concern with increasing magnitude. It is now accepted as a global, multifaceted problem with several underlying factors. The World Economic Forum has urged to add antimicrobial resistance in the global risk register and asked for serious attention to this "catastrophic effect". World Health Organization (WHO) has also highlighted the serious public health implications regarding antimicrobial resistance in many resolutions. In 2001, the WHO global strategy for containment of antimicrobial resistance had provided a framework to emphasize the growing magnitude of antimicrobial resistance. In 2012, WHO published a detailed proposal entitled "the evolving threat of antimicrobial resistance-options for action". This proposal mainly highlighted the importance of a strengthened health surveillance system, infection control programs, new appropriate drugs, and a strong global commitment. The first World Health Organization (WHO) global report on surveillance of antimicrobial resistance (AMR), revealed in 2014, showed a significant extent of this evil phenomenon all over the world, thus declaring antimicrobial resistance (AMR) as a major public health implication for 21st century. It respects no boundaries and indiscriminately ruining health paradigms. Therefore, globally coordinated actions, awareness campaigns and political commitments are need of the hour.



ANTIMICROBIAL RESISTANCE

A global perspective

by **Umar Bin Farooq**
Doctor of Veterinary Medicine
College of Veterinary and Animal Sciences, Jhang

“ If we fail to act, we are looking at an almost unthinkable scenario where antibiotics no longer work, and we are cast back into the dark ages of medicine ”
~David Cameron, former UK Prime Minister

Antimicrobials are the most potent life-saving drugs. Antibiotics afford the reduction in the number of deaths. Studies have depicted that antibiotics' effective and timely availability has reduced the number of deaths from infections in the United States nearly by 80 per cent, from 280 to 60 deaths per 100,000 population. The availability of antibiotics is imperative for advances in modern medical establishments. They are of prime importance in a wide range of usage, from intensive care units to aggressive surgeries, care of neonates, and chemotherapy. With losing the efficacy of antibiotics, medicine would have been paralyzed, and it seems that we will be living back in the ages of stone.

Antimicrobial resistance-AMR is referred to the ability of a microbe to withstand the attack by antimicrobial drugs. When microbes develop resistance against antibiotics, infections are less likely to be treated. It may result in prolonged illness, increased mortality rates, economic burden, and several other complications. There are numerous ways by which bacteria develop resistance against antibiotics. However, antimicrobial resistance is of two types: Intrinsic and acquired. Intrinsic resistance is the innate ability of a bacterium to resist a certain class of antibiotics. It can be carried out by reduced permeability of the outer membrane-LPS and the natural activity of efflux pumps. On the flip side, acquired resistance can be ruled out in terms of genetic and biochemical mechanisms. Bacteria may mutate their genetic makeup or modify drug target sites to survive the attack of antibiotics against them.

Factors contributing to the development and spread of antibiotic resistance are deeply rooted. It can be attributed to the increased community-acquired resistance, ineffective infection control programs, increased international travelling, indiscriminate soaring misuse, over the counter availability of antimicrobials, irrational dose combination of antimicrobials, self-medication and substandard drugs causing sub-optimal blood concentration. Foreseeing the potential threat for antimicrobial resistance, in his Nobel Prize speech 1945, Alexander Fleming warned that, **“The time may come when anyone in the shops can buy penicillin. Then there is the danger that the ignorant man may easily underdose himself and by exposing his**

microbes to non-lethal quantities of the drug make them resistant.”

Antimicrobial resistance can also be seen in the perspectives of one health. Animals are essential to us in terms of food. The blind use of antibiotics in therapeutics, prevention, and growth promoters is bearing severe consequences. Drug residues in animal by-products are a stabbing concern. Improper administration of dosage or discontinued course of antibiotic treatment is a major contributing factor in this regard. For overcoming this potent threat, proper awareness is needed. Farmers must learn the basics of antimicrobial resistance and antibiotic withdrawal period. The antibiotic withdrawal period refers to the mandatory period required for an animal to metabolize an administered drug and to reach a concentration of drug residues in tissues (meat/milk) at a minimum or safer level. If this withdrawal period is not observed, drug residues in the meat/milk are perils to human health, and thus, consumption of such animal by-products should be condemned. In Pakistan, the armageddon of antibiotic resistance has already prevailed. Studies have shown that developing countries like Pakistan, Afghanistan, India, Bangladesh, Uganda and Kenya have a high level of antimicrobial resistance. Antibiotics are prescribed to nearly 7 per cent of patients here. Moreover, the counter availability of antibiotics is an alarming concern. On the other hand, lack of education is a major hurdle. People in developing countries are habitual to self-medication and are thus more prone to irrational drug combinations and overuse of antimicrobials. This may have severe consequences for their individual as well as community health. US Centre for Disease Control estimated that 23,000 Americans death per year is attributed to antibiotic resistance. The economic cost of such infections costs more than 20\$ billion per year (CDC sources). This problem is soaring in developing nations with even greater magnitude, and if not stopped, the future is awaiting us. This evil can surpass our economic potential, and we may never be able to recover.

The COVID-19 is exacerbating the indiscriminate misuse of antibiotics. Some countries proclaimed the efficacy of azithromycin and hydroxychloroquine in COVID-19 despite no scientific approval. Azithromycin overuse was observed during the spike of the COVID-19 pandemic. This may lead to complications in the treatment of significantly drug-resistant typhoid (XDR) in Pakistan especially. Studies also have depicted the over-prescription of antibiotics in the case of telemedicine during a pandemic. This malpractice should be properly addressed, and prudent use of antibiotics must be discouraged. Overcrowding in the hospital during the spike of the pandemic made a setback to the antimicrobial stewardship programmes.

Considering the complexity of antimicrobial resistance, it can never be tackled by one scientific domain or even by research alone, but it needs a collaborative approach and a strong commitment. In 2015, World Health Organization adopted a global action plan to combat antimicrobial resistance. The global action plan on antimicrobial resistance sets out five strategic objectives:

1. To improve the awareness and understanding of antimicrobial resistance
2. To strengthen knowledge through surveillance and research
3. To reduce the incidence of infection
4. To optimize the use of antimicrobial agents
5. To ensure sustainable investment in countering antimicrobial resistance.

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DENGUE VIRUS IN PAKISTAN

A Global Threat

by Aoun Muhammad, Shamsa Kanwal,
Mavara Iqbal, Mahnoor Idrees

College of Veterinary and Animal Sciences, Jhang

Dengue is an acute infectious and widespread mosquito-borne disease in human beings. The principal vector of dengue fever is the female mosquito species *Aedes aegypti* that live in stagnant water. It has become a major international public health problem. There are an estimated 50 million cases of dengue and 20000-25 000 deaths each year. The WHO declares dengue infection to be endemic in 100 countries, including Pakistan. It occurs in two forms: Dengue and dengue hemorrhagic fever (DF/DHF), which can be caused by any one of four closely related viruses of genus flavivirus, DEN-1, DEN-2, DEN-3, or DEN-4. All of the four serotypes exist in Pakistan. The most prevalent serotypes in Pakistan are DEN-2&DEN-3.

II, rapid urbanization in South Asia resulted in increased transmission of the dengue infection, leading to the first severe epidemic of DF/DHF in south Asia and has spread around the globe since then. By the late 1980s, DF/DHF was a more common mosquito-borne illness after malaria when there were first major DHF epidemics in Sri Lanka, India, and the Maldives Islands.

Epidemiology and Prevalence in Pakistan:

Dengue affects about 390 million people every year.1 In the last decade, 120 countries are facing a great challenge to prevent dengue virus (DENV) transmission, and 2.5 billion world populations are at risk of dengue infection, according to a WHO report. During the dengue outbreaks in Pakistan, more than 55 000 individuals were hospitalized, including children. Since 2006, dengue epidemics have occurred every year and have become a major health problem in Pakistan. *Aedes aegypti* mosquito is native to Africa, but worldwide migration caused dengue and *Ae. Aegypti* became one of the major vectors of dengue spread. Dengue is endemic in most tropical and subtropical regions, mostly due to Human migration. Dengue virus infection can cause a wide spectrum of clinical manifestations, which differ from dengue fever (DF) and severe dengue disease (SDD), which includes dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS). The conditions of about 5%-10% of patients with Dengue Fever can become severe; hospitalization is required for the patients suffering from Dengue Hemorrhagic Fever. About 30%-40% of children suffering from DHF can contract DSS. The fatality rate due to DSS/DHF can reach 5%. The patients who recovered from DF acquired immunity for the lifetime against that specific serotype.

Incidence and seroprevalence:

Evidence of dengue fever in southeastern Pakistan since 1985; DHF first occurred in

Karachi in 1994 with five deaths; 1995 outbreak in a factory in Baluchistan Province, in which 57 of 76 workers were infected; currently (1998), it is assumed that in the Karachi area up to 26% of all undifferentiated fevers are JE infections. The three provinces of Pakistan that are facing the dengue epidemic are Punjab, Khyber Pakhtunkhwa, and Sindh. In 1994, the first major outbreak of dengue occurred in Pakistan, but the annual epidemic trend started in 2005 in Karachi. In 2011, the Punjab Province, particularly capital city Lahore, faced a major dengue epidemic. In 2017, a dengue epidemic in KPK was attributed to

entered China in 2016. According to statistics, since 2010, epidemics in Pakistan have caused 16 580 confirmed cases and 257 deaths in Lahore, and nearly 5000 cases and 60 deaths reported from the rest of the country. A total of 44 cases have been reported in Punjab so far this year compared to nine cases of the disease from January to May of last year; Geo News quoted unidentified health authorities as having said.

Transmission:

The risk of contracting the dengue virus has increased, and this upward trend is due to urbanization, long-distance travelling, poor sanitary conditions, population growth, ineffective mosquito control. The dengue virus is transmitted to humans via the bite of an infected mosquito. Only a few mosquito species are vectors for the dengue virus. What is a vector? A vector is a vehicle that carries and transmits a disease to its host organism. When a mosquito bites a person with the dengue virus in their blood, the mosquito becomes infected with the dengue virus. An infected mosquito can later transmit that virus to healthy people by biting them. Dengue cannot be spread directly from one person to another, and mosquitoes must transmit the dengue virus.

The dengue virus is spread through a human-to-mosquito-to-human cycle of transmission. Typically, four days after being bit by an infected *Aedes aegypti* mosquito, a person will develop viremia, a condition in which there is a high level of the dengue virus in the blood. Viremia lasts for approximately five days but can last as long as twelve days. On the first day of viremia, the person generally shows no symptoms of dengue. Five days after being bit by the infected mosquito, the person develops symptoms of dengue fever, which can last for a week or longer.

These mosquitoes (*Aedes aegypti*) lay their

eggs inside containers, and new *Aedes aegypti* hatch when the containers are filled with water. Dengue poses the greatest risk in highly populated regions with rainy seasons (May to October). There are large populations of *Aedes aegypti* with a high degree of contact between the mosquitoes and humans. The mosquito bites at Dawn and Dusk times usually.

Symptoms:

Dengue infection is fever that lasts with general symptoms, characterized by a from 2 to 7 days, signs and e.g., nausea, vomiting, abdominal pain, eye pain, muscle aches, joint pain, and headache. This stage is followed by hemorrhagic manifestations, bleeding nose or gums, skin haemorrhages, and possibly internal bleeding. The capillaries (smallest blood vessels) become excessively permeable, allowing the fluid component to escape from the blood vessels. This may lead to failure of the circulatory system and shock, followed by death.

Control of Dengue:

Dengue Mosquito (*Aedes aegypti*) can bite during the daytime or at the time of sunset, mostly so we can control dengue by wearing long pants and long sleeves shirts. Tightly cover the water tanks and remove the stagnant water from the place by turning the watering buckets and cans to reduce the mosquito population-control dengue by disposing of the waste properly by applying mosquito repellent over the exposed body surfaces. Nets treated with insecticides are used more effectively to control mosquito bites. Many insecticides chemicals are used to kill adult mosquitoes where they rest. Bioinsecticides (*Bacillus thuringiensis israelensis*) may use to kill mosquito larvae or adult mosquitoes. Control the mosquito population by Biological ways. Many fish like mosquito fish or goldfish can eat larvae of mosquitoes. This may disrupt the life cycle of mosquitoes. A genetic variation may also control the mosquito population-researchers at the University of Oxford and Oxitec genetically engineered female mosquitoes that cannot fly. Emergency vector control measures such as applying insecticides as space spraying during outbreaks may be used by health authorities. No vaccine can protect against dengue fever. Only avoiding mosquito bites can prevent it.

Prevention:

Travellers should take some measures to prevent mosquito bites during the daytime. Use a repellent containing 20%-30% DEET or 20% Picaridin on exposed skin. Re-apply according to the manufacturer's directions.

- Wear neutral-coloured (beige, light grey) clothing. If possible, wear long-sleeved, breathable garments.
- If available, pre-soak or spray outer layer



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Fowlpox in birds

by Dr Anum Sabir
(DVM student)

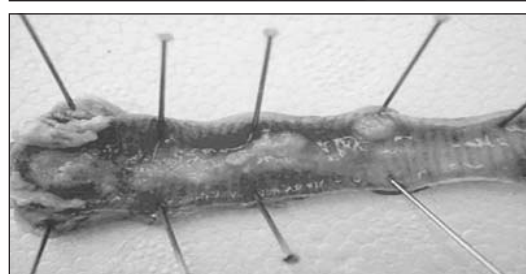
University of Veterinary and Animal Sciences
Lahore, Jhang campus

Fowlpox is a viral disease of the respiratory system. It is characterized by an eruption of nodular lesions on unfeathered skin. Lesions/plaques on the upper respiratory system. These lesions block the airways and cause difficulty in breathing. This contagious fatal disease can attack Chickens, Turkeys, Pigeons, and other fancy birds. Chickens, turkeys, pigeons, peafowl are Usually affected. It is less common in quail, geese, ducks, guineas, canaries, pheasants Fowl Pox is caused by a large brick-shaped DNA virus, Avipoxvirus. These Avianpox viruses are prone to resistance and can survive for a longer period. The virus can gain entry into the host via skin abrasions or aerosol. Moreover, mosquitoes or fleas can also serve as a vector for the transmission of viruses. Upon entry, the virus may take 14 days as an incubation period. The morbidity rate may vary between 10-95%, while mortality is usually low up to 50%.

Clinical signs:

Eruptions on various parts of unfeathered skin, diphtheritic lesions in upper digestive & respiratory tracts, worldwide occurrence **Foams of Fowlpox: 1).** Cutaneous 2). Diphtheritic 3). Oculo-nasal form.

Dry pox: (Cutaneous form) most common, it affects the unfeathered skin, small bumps



(wart-like) first moist than dry lesions on a comb, wattles, corner of the mouth, around eyelids, angle of a beak, wings, legs feet, vent. Mortality negligible.

Wet pox: (Diphtheritic form) oral cavity and upper resp. tract are affected. White or opaque eruptions on the mucous membrane of the mouth, nares, larynx, pharynx, esophagus, trachea, caseous white patches, necrosis, ulceration, exudate seen later, mucous membranes undergo extensive necrosis & develop Diphtheritic (false) membrane. Membrane adherent to tissue & when removed, scab leaves a raw eroded bleeding surface. Dyspnea, gasping, suffocation, death.

Oculo -Nasal form: Swelling of eye, infra-orbital sinuses are affected. It is characterized by high temperature, inappetence, depression,



weakness, decrease growth and production, transient drop in egg production, less fertility. Round to oval, eosinophilic cytoplasmic inclusions named Bollinger bodies are seen. Morbidity 10-95%, mortality 0-50%.

Pathogenesis: Infection occurs through Skin abrasions or bite, then epithelial cells get affected, virus proliferation, ballooning of cell forming papules, vesicles form, then pustules, nodules, and at the end scab form. The course of the disease is 2-3 weeks and 8-9 weeks in severe cases. The incubation period is 4-10 days.

Transmission: Birds get fully recovered not remain as the carrier, through direct contact

of infected and un-infected bird, mechanically transmitted by mosquitos, ticks, lice, flies, Vertically spread from mother to offspring, through Cannibalism and crust in a litter.

Post mortem lesions: Various stages of pox lesion. Papules are light-colored nodules, vesicles and pustules are Yellow-colored, nodules are wart-like on unfeathered skin, caseous plaques are Buff to yellow, on mucous membrane Purulent material block trachea, Internal organs remain normal.

Histopathology: Balloon-like degeneration of Sq. epithelial cells of the skin, characteristic large eosinophilic intracytoplasmic inclusions (Bollinger bodies) In infected epithelium, Smaller elementary bodies (Borrel bodies), hyperplasia of infected epithelium in wet pox, Infiltration, and necrosis. All this is observed in histopathology

Differential diagnosis: Avitaminosis, Infectious coryza, Pasteurellosis .

Treatment: Fowl Pox is a virus and cannot be treated with any antibiotics (which are all designed to fight bacteria not viruses). In the dry form, for treating the external sores antibiotic ointments can be used.

Prevention and vaccination of

Fowlpox: Vaccination effectively prevents the disease and may limit spread within actively infected flocks. Where fowlpox is prevalent, chickens and turkeys should be vaccinated with a live-embryo or cell-culture-propagated virus vaccine. The most widely used vaccines are attenuated fowlpox virus and pigeon pox virus isolates of high immunogenicity and low pathogenicity. In high-risk areas, vaccination with an attenuated vaccine of cell-culture origin in the first few weeks of life and revaccination at 12-16 weeks is often sufficient. The health of birds, the extent of exposure, and the type of operation determine the timing of vaccinations. Passive immunity may interfere with the multiplication of vaccine virus; progeny from recently vaccinated or recently infected flocks should be vaccinated only after passive immunity has declined. Vaccinated birds should be examined 1 week later for swelling and scab formation ("take") at the site of vaccination. The absence of "take" indicates a lack of potency of vaccine, passive or acquired immunity, or improper vaccination. Revaccination with another serial lot of vaccine may be indicated.

EXCELLENT LIPOTROPIC AGENTS FOR HEALTHY LIVER FUNCTION

The liver, being one of the most vital organs of the body, constitutes to the lifeline system of the animal. This organ plays a major role in the digestion, metabolism and utilisation of feed nutrients. The liver has several significant functions including bile secretion, and metabolism of carbohydrates, lipids and proteins, as well as several other metabolic functions.

Genetic improvements of broiler flocks for higher growth rate and also formulating highnutrient density diets, especially for ME level, increased the chick's sensitivity to stress and disease. Issues of these diets may also harm the liver health and become ever endangered by microbial and chemical toxins. These toxins may cause varying degrees of damage to the liver and affect its functions, thereby resulting in poor health and production.



Lipotropic agents are the compounds that can help in utilizing the energy of diets. These compounds help to catalyze the breakdown of fat during metabolism in the body. They promote and encourage export of fats from the liver and help burn the exported fat from the liver during metabolism. Without lipotropic agents, fats become trapped in the liver causing liver disorder such as fatty liver syndrome.

Quite a number of lipotropic agents are already available in the market and each of them has its own significant function. Choline have important role in fat metabolism by stimulating fat transmission and/ or increasing the biodegradation of fatty acids to prevent the storage of fat in

tissues. Carnitine is known for its potential to transport long chain fatty acids into the mitochondrial matrix for beta-oxidation. Inositol, like choline, helps to move out fat in the liver and redistribute in the body tissue and use more efficiently as energy. Betaine is a methyl donor which prevent inadequate hepatic fat metabolism. Biotin helps increase better utilization of fats by increasing the activity of pyruvate carboxylase involved in gluconeogenesis. Some vitamins like B5 and B12 are coenzymes which are involved in fat metabolism. Selenium helps protect tissue damage caused by free radicals.

Sorbitol stimulates biliary functions for nutriment assimilation (especially emulsification of fats and absorption of fat-soluble vitamins: A, D, K and E). Methionine, a sulphur containing amino acid, which is an essential constituent of the diet, acts as lipotropic and protects the hepatic cell. Lysine, an aliphatic amino acid, is an essential constituent of the diet which improves and stimulates hepatic, biliary and intestinal functions.

Zagro synergistically combined these lipotropic compounds and formulated the product called Heprosol. It is an excellent oral liquid supplement to promote a healthy liver. It efficiently performs its role in nutrient metabolism and utilization. As a liver aid, Heprosol helps prevent fatty liver syndrome and maximize animals' performance.



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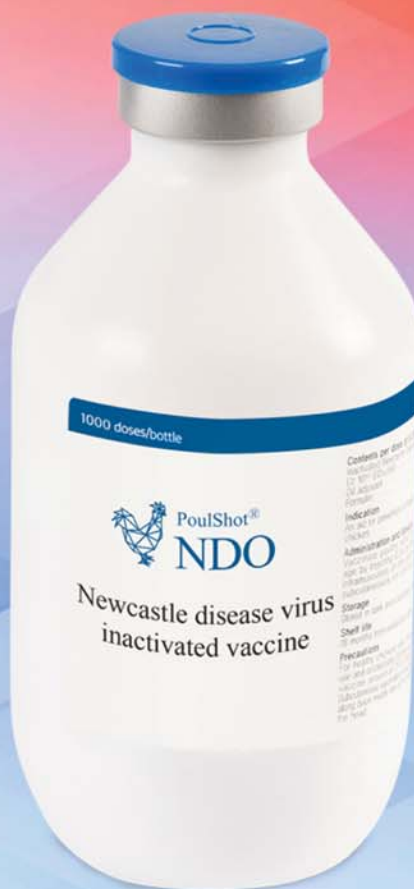
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The threat of rabies ...

Continued from page 06

Oral Rabies Vaccination (ORV) is an effective tool to rapidly vaccinate inaccessible stray dogs.

What is Oral rabies vaccination (ORV)?

This is an effective strategy to prevent the spread of rabies in reservoirs such as raccoon dogs, coyotes, and foxes. Baits laden with Oral Rabies Vaccine (ORV). These vaccines are distributed in strategic areas where target species can find and consume the baits, releasing vaccines into their oral cavity.

Journey of success in Rabies Vaccine R&D and Production by Bioveta EU.



Bioveta is an EU-based company with a history of more than 100 years in Vaccines manufacturing for animals and is represented by Snam Pharma in Pakistan. Bioveta holds the major share in European Vaccines Production. They prepare Oral Rabies Vaccine (ORV) Vaccine Baits against Rabies for Red Foxes & Raccoon Dogs in European Countries for mass vaccination. In this way, the EU controls Rabies for its human populations adjoining the forest and canine wildlife, which are Red Foxes & Raccoon Dogs. Use of "LYSVULPEN POR. AD US. VET."

TYPE OF PREPARATIVE:	Vaccines
TARGET SPECIES ANIMALS:	Fox & Raccoon Dogs

Vaccine for prophylactic vaccination of Wild Red Foxes and Raccoon Dogs against Rabies. Its one dose of 1.8 ml in a Bait. Prospects for use of ORV in Stray Dogs or Pets. Following the successful use of oral rabies vaccines in the elimination of sylvatic fox rabies in Western Europe, and fox and coyote rabies virus variants from the Southern United States, Oral Rabies Vaccination (ORV) has now been proposed as a complementary method for the elimination of Canine Rabies (especially the Stray Dogs). Oral Rabies Vaccine (ORV) is particularly well suited for vaccinating

dogs that are inaccessible to parenteral vaccination (e.g., Free-roaming owned dogs and feral dogs), or for which parenteral vaccination using Capture-Vaccinate-Release (CVR) requires disproportionate resources to achieve the 70% vaccination coverage necessary to eliminate Canine Rabies. Trials on the use of Oral Rabies Vaccine (ORV). Oral Rabies Vaccine/ Oral Bait Handout (OBH) for Rabies. have already been conducted in Tunisia, India, and the Philippines. These trials have proved to be very successful. OUTCOME OF the latest TRIAL STUDY conducted in India-2019. Two methods for the vaccination of dogs that could not be handled for injection were compared in Goa-India. The Oral Bait Handout (OBH) method, where teams of two travelled by scooter offering dogs an empty oral bait construct. The Catch-Vaccinate-Release (CVR) method, where teams of seven travel by supply vehicle and used nets to catch dogs for parenteral vaccination (via injection). The Oral Bait Handout (OBH) method was more efficient on human resources, accessing 35 dogs per person per day, compared to 9 dogs per person per day through Catch Vaccinate and Release (CVR). OBH accessed 80% of sighted dogs, compared to 63% by Catch Vaccinate & Release (CVR) teams, with Oral Bait Handout (OBH), accessing a significantly higher proportion of inaccessible dogs in all land types, was possible. All staff reported that they believed that the Oral Bait Handout (OBH) would be more successful in accessing dogs for vaccination. Extrapolation to a two week India national campaign estimated that 1.1 million staff would be required using CVR, as compared to 0.93 million staff would be needed for Oral Bait Handout (OBH) in a country with a population of 1,391,938,524., as of Thursday, May 20, 2021. Oral Bait Handout (OBH) was operationally feasible, economical and effective at accessing the free-roaming (stray) dog population. This study provides evidence for the continued expansion of research into the use of Oral Bait Handout (OBH) as a supplementary activity to parenteral mass dog vaccination activities in India. Rabies in Iran, threat perception in the human population. : Past, Present and Future. Rabies is a disease that has been known since antiquity. It is a highly fatal acute disease of the central nervous system caused by a lyssavirus. Before the discovery of the rabies vaccine, rabies-infected individuals fell victim to the delusions

and superstitions associated with this disease. Though it has been neglected in many regions of the world, rabies remains one of the most feared diseases in many developing countries, where it takes the majority of its victims. The virus circulates mainly in domestic and wild carnivores, taking 60,000 human lives worldwide every year and inflicting significant financial damage. It can, however, be well controlled due to the availability of effective Post-Exposure Prophylaxis (PEP) protocols. Pasteur Institute of Iran has had a significant role in the establishment of current PEP protocols in the world. Despite the availability of effective PEP protocols, preventive vaccination would be preferable in endemic regions. Annually, a considerable number of exposures to animal bites occur in Iran. The current situation in the country is well-controlled by a robust surveillance system and efficient PEP treatments, resulting in considerably low death incidences from rabies. High-quality vaccines recommended by the World Health Organization (WHO) are expensive and unaffordable in developing countries, where the need for rabies vaccination is greatest. Therefore, there is an increasing need to develop new cost-effective and efficient vaccines requiring fewer injections and providing longer-lasting immunity. Results of the Trials of ORV in Tunisia. The protective effect of the lyophilised SAG2 oral vaccine bait DBL2, already demonstrated on laboratory dogs, need to be verified on common Tunisian dogs. Seven Tunisian dogs consumed totally or partially one DBL2 bait containing IOS3 TCID SOof the highly attenuated rabies vaccine strain, SAG2. Five of the seven vaccinated animals survived a challenge administered 33 days later with a Tunisian canine street rabies virus to which five of the six controls that were not vaccinated and had no specific antibodies succumbed. The partial or total consumption of a single DBL2 bait thus conferred a protective immune response similar to that observed in laboratory dogs to dogs of poor health status. The sero-antibody response was, however, weak: only two vaccinated dogs exhibited a significant neutralising antibody response after vaccination and before the challenge, and four after the challenge. Oral rabies vaccination of dogs by veterinary students in the rural village of Mindoro, Philippines. Vaccination coverage in the Philippines is very low, particularly in rural areas, because most dogs cannot be handled easily by their owners. In the remote village of Mindoro, pre-vaccination coverage, assessed through house-to-house

surveys, was 0% at the start of the project. All 216 dogs counted were owned. Oral vaccination was considered the most appropriate strategy for this setting. Permission for vaccination was obtained from the head of the village as well as the appropriate governmental local and national agencies. Sixteen veterinary students of DMMMSU (Bacnotan - La Union), who had been previously vaccinated against rabies, were trained before the campaigns with special emphasis on how to approach dogs and offer them a bait containing a vaccine-filled capsule. Mindoro was reached by the vaccinators, 8 teams of 2 veterinary students each, and supervisors using public transport (bus, scooters, and boats).



Figure 5 Veterinary students offering bait to a dog in the Philippines

Recommendations

Management of the Stray Dogs and their Prophylactic Vaccination are of paramount importance. It is very encouraging that both the Governments at the provincial and Central levels understand the need for control of Rabies via mass vaccination of the stray dogs, and momentarily, the TNVR method is being adopted. The University of Veterinary and Animal Sciences, Lahore, has conducted training for the staff of the L&DD Department in the recent past. Sind Agriculture University's Department of Surgery is also active in the TNVR of the stray dogs and the dogs of the less privileged villagers. There is a need for adopting alternative options in dealing with Rabies control in stray dogs in Pakistan. Let us contribute our bid in a Rabies Free Pakistan. The following strategy may be adopted as recommended jointly by SPCA, UVAS, L&DD Punjab L&DD, Local Government, Health Department, PVMC, Islamabad, and Animal Welfare NGOs. Don't Shoot Stray Dogs. Instead, Humanely Trap Them. Neuter Them. Vaccinate Them & Release Them.



Special Credits : Prof Dr Masood Rabbani, Dean Faculty of Veterinary Sciences, UVAS Dr Syed Muhammad Faheem Ahmad, UVAS

Pakistanis spent Rs450 ...
Continued from front page

Scores of such professionals from rural Sindh and Punjab reached Karachi, the country's economic hub, to earn a livelihood.

This year, Rs20,000-25,000 were being charged to slaughter cows weighing more than 185 kilogrammes on the first day of Eid, while Rs15,000 to Rs20,000 is the rate on the second and third days for the same weight.

A total of Rs10,000-15,000 was charged for slaughtering animals weighing between 92 and 117 kilogrammes on the first day of the religious holiday.

Around Rs8,000 to Rs10,000 were charged on the second and third day of Eid.

Welfare institutions organising collective sacrifices availed the services of butchers from outside Karachi over the three days of Eid. As many were unable to perform Hajj this year, there was an additional 10% sacrifice, and the business of hides was estimated at Rs7.5 billion instead of Rs6.5 billion last year.

Similarly, over a sum of Rs1.5 billion was spent on the transportation of cattle.

The practice of ijhtemai Qurbani or communal sacrifice also peaked by 20 to 30% this year instead of buying separate animals.

Per Islamic jurisprudence, a single cow, ox or camel has seven portions, which means that seven persons can jointly sacrifice the animal. As of the second day of Zilhaj, most mosques and seminaries across Karachi had closed their bookings for communal sacrifice, while a few neighbourhood committees and welfare organisations were still accepting reservations.

In addition, certain organisations had also introduced the facility of online sacrifice against the backdrop of COVID-19.

India probes its first ...
Continued from page 04

In the Indian case, the ministry said the virus belonged to the H5Nx subtype, considered worrying as they have proven to evolve into highly dangerous strains.

Doctors and nurses who treated the patient have been monitored since July 16, and no one has reported any symptoms, it said.

Contact tracing was also undertaken, but family members, close contacts and health care workers did not show any symptoms.

Last month, China revealed its first human case of bird flu, and in February, Russia detected the disease among workers at a poultry factory.

India had witnessed bouts of devastating bird flu outbreaks in recent decades, most seriously in 2008, when millions of poultry were culled.

The country, the second most populated globally, is currently

battling the coronavirus pandemic, which has infected more than 31 million people and killed over 400,000.

Rescued circus animals ...
Continued from page 04

taken against the suspects according to the Sindh Wildlife Protection, Preservation, Conservation and Management Act, 2020.

"The circus had been organised only for a day in Mowach Goth's Memon Colony before it was raided. When we approached the circus organisers, the two gipsy-looking in our custody turned up with the claim that the animals belonged to them, but they had no legal permission to keep them," he explained.

According to Mr Khan, the police will be taking action against the circus organisers for violating the Covid-19 related standard operating procedures (SOPs) under which public gatherings are banned. He said the wildlife department would also register a case against the animal handlers under the 2020 act that empowered it to lodge an FIR. About animals' release, he said: "The conservator will take the final decision. It's likely all, except the badger, will be released in the Kirthar National Park. It might be released in the wild in Khairpur as it's found there.

The wildlife department in 2017 had confiscated a pair of lions, and a chimpanzee kept in miserable conditions for a circus performance for over a month in the Gulshan-i-Iqbal area and shifted them to the zoo. Both lions died there in later years.

Under provincial law, the use of animals in circuses is banned. The law also completely prohibits the trapping of wild animals, and violators can get two and a half years in prison with a minimum fine of Rs30,000. This law also protects seasonal migratory birds and those wildlife species that enter Sindh from other places.

Viruses against Bacteria
Continued from page 07

in bacteria posing a new threat

• But as an alternative approach scientist are using only the "Functional Machinery" of virus instead of whole virus and it showed great results. This machinery is usually those proteins or enzymes which are lethal to bacteria. They are isolated and used.

How Phage Therapy Works
Bacteriophages have a specific structure. A typical phage has Head with genetic material enclosed in it, Collar, Sheath, Spikes, Baseplate and Tail Fibers.

Phages are of two types

1- Lytic 2- Lysogenic
Lysogenic phages don't kill bacteria but goes in a dormant stage inside their machinery and at any stage they can start the lytic stage. Lytic bacteria are those who kill bacteria by their complete lysis. They

are mostly used in Phage Therapy/Phage treatment. Phages have specific sensors who attach with the specific host bacteria and they inject their Genetic material inside the bacteria. It hijacks the bacterial machinery and start using it for its own protein formation. So new such viruses can be generated. These viruses attack new bacteria and this cycle continues until bacterial population ends.

For making product, phages are identified and isolated. These phages are grown on bacterial media and then purified. These purified phages are then used for treatment.

Genetically engineered Phages

The bacterial strains who don't have appropriate phage for them ate being studied and then phages are being genetically engineered for such strains. This is a whole new science and can do wonders if adopted by our industry in near future.

Conclusion

In this world where bacteria are evolving daily, we need such alternative methods in our industry. Many such products can be made commercially. This new regimen of treatment against bacterial diseases will be a great breakthrough in pharmaceutical industry and medical science if adopted commercially.

Comparative analysis ...
Continued from page 11

Alpha (UK)
Dubbed B.1.1.7, the UK variant (quickly spreading) was first identified in the fall of 2020.

Beta (South Africa)
Dubbed B.1.351, it emerged independently of B.1.1.7 (UK) and was first detected in South Africa in early October 2020. it does respond to vaccines, just not as well as the other major known variants.

Gamma (Brazil)
The Brazilian variant is called P.1.
Delta (India)
The Indian strain a "double mutant" variant, B.1.617, which had two key mutations observed in other coronavirus variants. The variant was first sequenced in a global database of COVID-19 variants in October 2020 but went largely unnoticed. The B.1.617 strain carries features from two lineages, the California variants (B.1.427 and B.1.429) and the ones in South Africa (B.1.351) and Brazil (P.1). The Indian variant's two prominent mutations include a position 452 of the spike protein and the second at 484. It is believed that existing vaccines should be effective against the variant. It is believed to be about 60% more contagious than the Alpha variant.

Antimicrobial resistance
Continued from page 12

This way forward can be applied at the international as well as national level. Community engagement using a



one-health approach can be significant to cope with the wrath of antimicrobial resistance. Improve the awareness and understanding of antimicrobial resistance via training and education, improving national surveillance, carrying community-based infection control programs, and appropriate and equitable use of antibiotics; can ensure commendable results. Legislative measures at the national level can strictly monitor the use of antibiotics. To put it all in a nutshell, a comprehensive global and national plan is needed to combat the rage of antimicrobial resistance. The indiscriminate use of antimicrobials must be prohibited. Proper legislation in this regard must be executed. Wits for the rational use of antimicrobials must exist.

Dengue virus in Pakistan
Continued from page 13

clothing and gear with permethrin.

- Get rid of water containers around dwellings and ensure that door and window screens work properly.
- Apply sunscreen first, followed by the repellent (preferably 20 minutes later).

Treatment:
There is no specific treatment to treat dengue infection. However, symptomatic treatment is done. For muscle pain and fever, you can use pain killers with acetaminophen. Please do not use the drug which contains aspirin because it can worsen the bleeding. Take plenty of fluids to keep your body hydrated and also take fruits. If you have severe dengue fever, then there is a need for supportive care in the hospital. There is also a need for intravenous fluid and electrolyte replacement if a person cannot take fluids from the mouth. In case of blood loss, a blood transfusion may also require.

Ongoing Programs in Pakistan:

WHO is providing technical assistance to the Government to combat the epidemic. This includes providing standard guidelines and capacity building in the planning and implementation of prevention and control measures. The three main areas of focus are vector control, case management and community awareness. To assist with vector control, WHO entomologists studied the Aedes mosquito in Karachi during the 2005 outbreak. WHO used this information to design Pakistan-specific control interventions.

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(FEED PREMIX)

SB COMBI F.T
(ORAL DRENCH)

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(ORAL DRENCH)

SB LEVONEX
(ORAL SOLUTION)

SB TIAMULIN 45% O/P
TIAMULIN HYDROGEN FUMARATE

SB AMOXYTIN O/P
AMOXICILLIN TRIHYDRATE
COLOSTINE SULPHATE

SB EXITIL
ALBENDAZOLE 12.5%

SB PIPRAZINE
(POWDER)

SB HELMIN
(SUSPENSION)

SB AMPROL 50
(WATER SOLUBLE POWDER)

SB COXI NIP
(WATER SOLUBLE POWDER)

SB RENAL
(WATER SOLUBLE POWDER)

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(WATER SOLUBLE POWDER)

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(EFFERVESCENT GRANULES)

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TIAMULIN HYDROGEN
CHLORTETRACYCLINE HCL

SB TIAMULIN 12.5% O/P
TIAMULIN HYDROGEN FUMARATE

SB TIAMULIN 12.5% O/L
TIAMULIN HYDROGEN FUMARATE

SB ASPER C
(EFFERVESCENT GRANULES)

SB VITA L
(FEED PREMIX)

SB MINERAL MIX
(FEED PREMIX)

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بقیہ: بروسیلوس کے بارے میں۔۔۔

ان ریوڑ میں رہنا جن سے ایسے جانور پیدا ہوئے ان کی جانچ کی جاتی ہے۔

کیا بازار مویشیوں اور گھریلو بکسن کی شناخت ضروری ہے؟

جی ہاں: مارکیٹ کیپل آئیڈیفیکیشن (ایم سی آئی) ایک بڑے علاقے سے منڈی میں لگائے جانے والے جانوروں کی بروسیلوس کی حیثیت کا تعین کرنے کا ایک ذریعہ فراہم کرتا ہے اور معمول کی جانچ کے تمام ریوڑ میں مویشیوں اور بکسن کو جمع کرنے کی ضرورت کو ختم کرتا ہے۔ ابتدائی جانچ کے طریقہ کار کے ساتھ، ایم سی آئی تلاش کرنے میں موثر ہے بروسیلوس انفیکشن لہذا اس بیماری پر قابو پانے اور اسے ختم کرنے کے کنٹرول اقدامات کیے جاسکتے ہیں ایم سی آئی پروگرام کی کلید تمام جانوروں کی مناسب شناخت ہے لہذا ان کی شناخت ان کے ریوڑ تک کی جاسکتی ہے۔ مویشیوں کی زیادہ تر مارکیٹیں گائے اور بکسن کی نشاندہی کرتی ہیں جن میں یو ایس ڈی اے سے منظور شدہ بیک بیک ہیں بیک ٹیگ، نیزارنگس اور انسان ساختہ شناخت کے دوسرے آلات ذبح کی سہولیات پر جمع کیے جاتے ہیں اور میٹ پازیٹو جانوروں کی ملکیت کی شناخت میں مدد کے لئے خون کے ملاپ کے نمونے کے ساتھ تشخیصی لیبارٹری بھیجا جاتا ہے۔ بروسیلوس اور دیگر بیماریوں کا پتہ لگانے، ان پر قابو پانے کے لئے ایم سی آئی اہم ہے۔

اگر بروسیلوس کے ثبوت مل جائیں تو کیا ہوتا ہے؟

جب متاثرہ ریوڑ واقع ہوتا ہے تو، یہ انفیکشن تمام متاثرہ اور بے نقاب مویشیوں اور بکسن کو الگ کر کے اور ان کی نقل و حرکت کو صرف ذبح کرنے تک محدود رکھتا ہے۔ یہ تک کیا جاتا ہے جب تک کہ ریوڑ سے بیماری کا خاتمہ نہیں ہو سکتا ہے۔ بروسیلوس متاثرہ ریوڑ کی آبادی ہے اگر فنڈ دستیاب ہو تو سفارش کی جاتی ہے۔ تشخیصی میٹ گلہ میں تمام متاثرہ مویشیوں اور بکسن کی تلاش معلوم کرتے ہیں کہ آیا اس سے ملحقہ ریوڑ متاثر ہوتا ہے یا نہیں، انفیکشن کے سب سے زیادہ ممکنہ ذرائع کا تعین کرنے کے لئے، اور

یہ تعین کرنے کے لئے کہ آیا یہ بیماری دوسرے ریوڑ میں بھی منتقلی کی گئی ہے یا نہیں۔ وبائی امراض کے ماہر، خاص طور پر تربیت یافتہ جانوروں کے ماہر، بیماری کے ذرائع کی چھان بین کرتے ہیں اور متاثرہ ریوڑ، ممکنہ طور پر بے نقاب ریوڑ، اور علاقے کے ریوڑوں کو بیماری کے پھیلاؤ کو روکنے، روکنے اور روکنے کے لئے ریوڑ کے منصوبے تیار کرتے ہیں۔

کیا بروسیلوس کے لئے کوئی ویکسین موجود ہے؟

جی ہاں: بروسیلوس ویکسین آر بی 51 کو کہا جاتا ہے۔ آر بی 51 ایک مدافعتی رد عمل پیدا کر کے کام کرتا ہے جو بیماری سے جانوروں کی مزاحمت میں اضافہ کرتا ہے۔ ویکسین ایک زندہ مصنوع ہے اور اسے صرف ایک منظور شدہ ویٹرنین یا ریاست یا وفاقی جانوروں سے متعلق صحت سے متعلق عہدیدار کے ذریعہ دی جانی چاہئے۔ بروسیلوس کی روک تھام کے لئے ویکسینیشن 100 فیصد موثر نہیں ہے۔ یہ عام طور پر تقریباً 70-80 فیصد حفاظتی ٹیکوں والے مویشیوں کو اوسط کی نمائندگی سے متاثر ہونے سے بچاتا ہے بہترین نتائج کے، جب خواتین بچھڑوں کی عمر 4 ماہ سے 1 سال کے درمیان ہو جاتی ہے تو انہیں قطرے پلانے چاہئیں۔ ویکسینیشن کے وقت، کان میں ٹیٹو لگایا جاتا ہے جو جانور کو "سرکاری ٹیکہ" کے طور پر شناخت کرتا ہے۔ ٹیٹو آر بی 51 سے ویکسین اور اس سال کی نشاندہی ہوتی ہے جس سال میں ویکسینیشن ہوئی تھی۔

بروسیلوس کے کنٹرول، انتظام اور خاتمے کے لئے ویکسینیشن ایک اہم ٹول ہے ہر مویشی یا گھریلو بزنس مالک، مقام سے قطع نظر، اسے اپنے پشو چلتا کے ساتھ ویکسینیشن کے فوائد اور نقصانات پر تبادلہ خیال کرنا چاہئے۔ کچھ ریاستیں مویشیوں اور گھریلو بکسن کو افزائش نسل کے لئے درآمد کرنے کی اجازت نہیں دیتی ہیں اگر وہ سرکاری طور پر بروسیلوس ویکسین نہیں رکھتے ہیں اور وہ اس عمر سے باہر ہیں جس میں انہیں ٹیکہ لگانا چاہئے تھا۔ ہر مویشی یا گھریلو بزنس مالک، مقام سے قطع نظر، اسے اپنے پشو چلتا کے ساتھ ویکسینیشن کے فوائد اور نقصانات پر تبادلہ خیال کرنا چاہئے۔ کچھ ریاستیں مویشیوں اور گھریلو

بکسن کو افزائش نسل کے لئے درآمد کرنے کی اجازت نہیں دیتی ہیں اگر وہ سرکاری طور پر بروسیلوس ویکسین نہیں رکھتے ہیں اور وہ اس عمر سے باہر ہیں جس میں انہیں ٹیکہ لگانا چاہئے تھا۔ جنگلی حیات، آزادانہ بکسن اور بلیک ریوڑ کے بارے میں کیا خیال ہے؟

بروسیلوس سے متاثرہ جنگلی حیات اس بیماری کو گھریلو مویشیوں میں منتقل کر سکتی ہے۔ ریاستہائے متحدہ کی بیماری سے پاک حیثیت کا مظاہرہ کرنے کے، ہمیں جنگلی حیات سے مویشیوں میں بروسیلوس ٹرانسمیشن کے خطرات کو کم کرنا ہوگا۔ گریٹر یلو اسٹون ایریا (جی وائی اے)، ییلو اسٹون نیشنل پارک اور گرینڈ ٹینن نیشنل پارک اور ان پارکوں کے آس پاس کے علاقے میں فری رینج بکسن اور بلیک میں بروسیلوس کی موجودگی آس پاس کے ریاستوں کی بروسیلوس کی حیثیت اور ان کے مویشیوں اور گھریلو صحت کی خطرہ ہے۔ بکسن ریوڑ، جو بیماری سے پاک ہیں۔ اس بیماری کو بروسیلوس فری اسٹیٹ میں دوبارہ تعارف کروانے سے گھریلو مویشیوں کی منڈیوں پر سنگین معاشی اثر پڑ سکتا ہے اور برآمدی منڈیوں کو ممکنہ طور پر متاثر کیا جاسکتا ہے۔

بروسیلوس انسانوں کو کس طرح متاثر کرتا ہے؟

بروسیلوس حیاتیات سے متاثرہ افراد عام طور پر شدید انفولنزا کی طرح علامات تیار کرتے ہیں، لیکن یہ بیماری، غیر ضروری بخار کہلاتی ہے، کئی ہفتوں مہینوں یا اس سے زیادہ عرصے تک برقرار رہتی ہے اور اگر اس کا علاج نہ کیا گیا تو آہستہ آہستہ خراب ہو سکتے ہیں۔ ابتدائی علامات تھکاوٹ اور پیس سرد، اس کے بعد تیز بخار، سردی لگ رہی ہے، جھکڑے ہوئے سینے، جوڑوں کا درد، مکر کا درد اور وزن اور بھوک میں کمی۔ طویل مدتی اثرات میں گھٹیا، اندرونی اعضاء کی سوجن، افسردگی، دائمی تھکاوٹ اور بار بار آنے والی بخار شامل ہو سکتی ہیں۔ غیر منقولہ بخار اکثر اپنے شکاروں کو نہیں مارتا ہے، لیکن اس بیماری سے بہت زیادہ سنجیدہ ہے کہ اس سے جیکے سے نمٹنا جائز یا شکار کرنے والے، ویٹرنیرین اور پیٹنگ پلانٹ کے کارکنوں کو

انفیکشن ہونے کا زیادہ خطرہ ہوتا ہے کیونکہ وہ متاثرہ جانوروں اور ان جانوروں کے ڈنکوں سے براہ راست رابطے میں آتے ہیں۔

انسانی انفیکشن کے بنیادی ذرائع کیا ہیں؟

آلودہ ہونے کا سب سے عام طریقہ یہ ہے کہ آلودہ، غیر مہذب دودھ کی مصنوعات کھایا پینا۔ جب بھیڑ، بکریاں، گائے یا اونٹ متاثر ہوتے ہیں تو، ان کا دودھ بیکٹر یا آلودہ ہوتا ہے۔ اگر دودھ کو پمپنگ سے نہیں کیا جاتا ہے تو، یہ بیکٹیریا ان افراد میں منتقل ہو سکتے ہیں جو دودھ پیتے ہیں یا پنیر اور اس سے بنی دیگر دودھ کھاتے ہیں۔ جب انسان اس بیماری کا بھی شکار ہو سکتا ہے متاثرہ جانوروں کو ذبح کرنا یا جب تازہ ہلاک، بروسیلوس متاثرہ مویشیوں، جنگلات کی زندگی یا جانوروں کے سوائے سے آلودہ اعضاء پر کارروائی کرنا۔

کیا لوگ گوشت کھانے سے بروسیلوس حاصل کر سکتے ہیں؟

پکا ہوا گوشت کی مصنوعات کھانے سے کوئی خطرہ نہیں ہے کیونکہ بیماری کا باعث، بیکٹیریا عام طور پر پشوں کے ٹشووں میں نہیں پائے جاتے ہیں اور وہ عام کھانا پکانے کے درجہ حرارت سے ہلاک ہو جاتے ہیں۔

لوگ بروسیلوس انفیکشن کے خطرے کو کس طرح کم کر سکتے ہیں؟

ریچرژ، کاشتکار، یا جانوروں کے منتظمین کو بچھڑوں کے علاقوں اور دیگر مقامات کو متاثرہ مادے سے آلودہ ہونے کا امکان صاف اور جراثیم سے پاک کرنا چاہئے۔ جب جنگلی حیات اور فیل سوائے سے فیلڈ ڈرینگ اور ٹشو سنبھالنے، جانوروں کو بچھڑنے یا اسقاط حمل کرنے میں معاون کرتے ہو، اور صابن اور پانی کے بعد اچھی طرح سے جھاڑ دیتے ہیں تو تمام افراد کو مضبوط ربڑ یا پلاسٹک کے دستاں پہننے چاہئیں کچا دودھ پینے یا بغیر دودھ پلانے والے دودھ کے استعمال کو ختم کرنے کے خلاف احتیاطی تدابیر بھی اہم ہیں۔ آخر میں، بہترین روک تھام اس علاقے کے تمام جانوروں سے بروسیلوس کو ختم کرنا ہے۔

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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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irfan@medicalnewsgroup.com.pk



بروسیلوسس کے بارے میں حقائق

تحریر: عبدالکبیر (پی ایچ ڈی سکالر)، محمد عزیز (فائل ایئر ڈی وی ایم)، سندھ ایگریکلچر یونیورسٹی ٹنڈو جام

بروسیلوسس مویشیوں کی ایک متعدی بیماری ہے جس کے اہم معاشی اثرات ہیں۔ بروسیلوسس عالمی سطح پر پایا جاتا ہے اور بیشتر ممالک میں یہ قابل اطلاع بیماری ہے۔

یہ بیماری بخار، کمزوری، عارضہ اور وزن میں کمی سمیت قلو جیسے علامات کا باعث ہے۔ فرد سے انسان منتقل ہونا نایاب ہے۔

یہ بیماری بروسلا خاندان کے مختلف بیکٹریا کی وجہ سے ہے، جو جانوروں کی ایک مخصوص نسل کو متاثر کرتی ہے۔ تاہم، بروسلا کی بیشتر اقسام جانوروں کی دوسری پر جاتیوں کو بھی متاثر کرنے میں کامیاب ہیں۔ اس سے مویشی، سوان، بھیڑ اور بکری، اونٹ، مساوات اور کتوں کو متاثر ہوتا ہے۔ یہ دوسرے سرے دار جانوروں، کچھ سمندری ستدر اریوں اور انسانوں کو بھی متاثر کر سکتا ہے۔ جانوروں میں بیماری اسقاط حمل یا تولیدی ناکامی کی خصوصیت ہے۔ اگرچہ جانور عام طور پر صحت یاب ہو جاتے ہیں، اور ابتدائی اسقاط حمل کے بعد زندہ اولاد حاصل کرنے کے اہل ہوں گے، لیکن وہ بیکٹریا یوں کو بہا سکتے ہیں۔

بروسیلوسس جانوروں کے ذریعہ پھیلائے جانے والے ایک وسیع و عریض زونوز میں سے ایک ہے اور مقامی علاقوں میں، انسانی بروسیلوسس نے صحت عامہ کے سنگین نتائج برآمد کیے ہیں۔ جانوروں کی صنعتوں اور شہریوں کی توسیع، اور جانوروں کی دیکھ بھال اور خوراک کو سنبھالنے میں حفظان صحت کے اقدامات کی کمی، جزوی طور پر بروسیلوسس کی صحت عامہ کا خطرہ ہے۔

بروسیلوسس کتنا سنگین ہے؟

بوائین بروسیلوسس مویشیوں کا ایک سنگین مرض ہے جس میں عوام کی اہم صحت ہے صحت، اور بین الاقوامی تجارت کے نتائج میں انفیکشن سے ہونے والے نقصان پر غور کرنا جانور۔ دودھ کی پیداوار میں کمی، وزن میں کمی، جوانوں کی کمی، بانجھ پن اور لکڑے پن یہ بیماری مویشیوں کے لئے ایک بہت بڑا خطرہ ہے۔ حقیقت یہ ہے کہ یہ بیماری تیزی سے پھیل سکتی ہے اور انسانوں میں منتقل ہونا اس کو اور زیادہ سنگین بنا دیتا ہے۔

کیا بیماری کے ایجنٹوں کی وجہ سے بروسیلوسس ہوتا ہے؟

یہ بیماری بیکٹریا کے ایک گروہ کی وجہ سے ہے جس کو سائنسی اعتبار سے جنس نسل بروسلا کے نام سے جانا جاتا ہے۔ تین بروسلا کی ذاتیں سب سے زیادہ تشویش کا باعث بنتی ہیں: بی ایورس، بنیادی طور پر مویشیوں، بکریوں اور کتوں کو متاثر کرتی ہے سوک، بنیادی طور پر سوان اور قحطی ہرن کو متاثر کرتی ہے بی میٹینیسس بکروں کو خاص طور پر متاثر کرتی ہے لیکن ریاستہائے متحدہ میں موجود نہیں ہے۔ بیماری بنیادی طور پر تولیدی اعضا اور/یا چھوٹا میں مقامی ہے۔ بیکٹریا یا بہا جاتا ہے دودھ یا اسقاط حمل، پیدائشی پیدائش، یا دوسرے تولیدی راستے سے خارج ہوتا ہے۔

بروسیلوسس کی علامات کیا ہیں؟

تاثرہ جانوروں کی ظاہری شکل سے ان کا پتہ لگانے کا کوئی موثر طریقہ نہیں ہے۔ حاملہ جانوروں میں سب سے واضح علامت اسقاط حمل یا کمزور پچھڑوں کی پیدائش ہے۔ دودھ کی پیداوار اسقاط حمل اور تاخیر سے ہونے والے تصورات کی وجہ سے دودھ پلانے کی عام مدت میں ہونے والی تبدیلیوں سے کم ہو سکتی ہے۔ تمام متاثرہ گائیں اسقاط حمل نہیں کرتی ہیں، لیکن وہ جو عام طور پر حمل کے پانچویں اور ساتویں مہینے کے درمیان اسقاط حمل کرتی ہیں متاثرہ گائیں عام طور پر ایک بار اسقاط حمل کر دیتی ہیں، لیکن اضافی حمل کے دوران ایک فیصد اسقاط حمل ہو جائے گا، اور بعد میں حمل سے پیدا ہونے والے پچھڑے ضعیف اور غیر صحت بخش ہو سکتے ہیں۔ متاثرہ گائے سے پچھڑوں کو دیر ہو کر انفیکشن ہو سکتا ہے، یعنی انفیکشن جو اس وقت تک پتہ نہیں چل پاتے جب تک کہ وہ بن جائیں بروسیلوسس کی دوسری علامتوں میں غیر تلی بخش شرح کی شرح کے ساتھ زرخیزی میں واضح طور پر کم کی شامل ہے، جس کے نتیجے میں پوٹرین انفیکشن پیدا ہوتے ہیں اور (کبھی کبھار) بڑھے ہوئے، گھٹیا جوڑے ہوتے ہیں۔

بروسیلوسس کیسے پھیلتا ہے؟

بروسیلوسس عام طور پر متاثرہ جانوروں سے براہ راست رابطے کے ذریعے یا ایسے ماحول سے متاثر ہوتا ہے جو متاثرہ جانوروں سے خارج ہونے والے مادہ

سے آلودہ ہوتا ہے۔ اسقاط جنین، نالی چھلیوں یا سیالوں اور اندام نہانی خارج ہونے والے مادہ موجود ہیں ایک متاثرہ جانور اسقاط حمل یا پچھڑا ہونے کے بعد سب متعدی بروسلا حیاتیات سے انتہائی آلودہ ہیں۔ گائیں ان مادوں یا دیگر گاؤں کے چٹنا لگ علاقے کو چاٹ سکتی ہیں یا مرض پیدا کرنے والے حیاتیات سے آلودہ خوراک یا پانی کی آلودگی کو متاثر کر سکتی ہیں۔ کبھی کبھار مستثنیات کے باوجود، عام قاعدہ یہ ہے کہ بروسیلوسس ایک متاثرہ یا بے نقاب جانور کے ذریعہ ایک ریوڑ سے دوسرے ریوڑ میں جاتا ہے۔ منتقلی کا یہ انداز اس وقت ہوتا ہے جب ایک ریوڑ کا مالک متبادل جانوروں یا گھریلو بکریوں کو خریدتا ہے جو انفیکشن ہوتا ہے یا خریداری سے قبل متاثرہ جانوروں، جانوروں کے ڈنگوں یا جانوروں سے خارج ہونے والے جانوروں کا سامنا کرتا ہے۔ جب جنگلی جانوروں یا ایک متاثرہ ریوڑ کے جانور بروسیلوسس سے پاک ریوڑ کے ساتھ گھل جاتے ہیں۔

بروسیلوسس انکیوٹیشن کی مدت کیا ہے؟

ایک انکیوٹیشن مدت حیاتیات کی ایک متعدی خوراک کی نمائش کے درمیان وقت کا وقفہ ہے اور بیماری کی علامتوں کی پہلی ظاہری شکل مویشی، بکری، اور دوسرے جانوروں میں بروسیلوسس کی انکیوٹیشن کا دورانیہ کافی حد تک متغیر ہے تقریباً 22 ہفتوں سے لے کر 1 سال تک اور کچھ خاص مثالوں میں اس سے بھی زیادہ لمبا۔ جب اسقاط حمل پہلی علامت ہے مشاہدہ کیا گیا، کم سے کم انکیوٹیشن مدت عام طور پر تقریباً 30 دن کی ہوتی ہے۔ کچھ جانور تشخیصی ٹیسٹ کے مثبت ردعمل کو فروغ دینے سے پہلے اسقاط حمل کر دیتے ہیں۔ دوسرے متاثرہ جانور کبھی اسقاط حمل نہیں کر سکتے ہیں۔ عام طور پر، متاثرہ جانور جو اسقاط حمل کا خاتمہ نہیں کرتے ہیں انفیکشن کے بعد 30 سے 60 دن کے اندر تشخیصی ٹیسٹ کے لئے مثبت ردعمل ظاہر کرتے ہیں، حالانکہ ممکن ہے کہ کچھ مہینوں تک ایک سال تک اس میں مثبت ردعمل پیدا نہ ہو۔

کیا جانوروں میں بروسیلوسس کا علاج ممکن ہے؟

نہیں، جانوروں میں بروسیلوسس کا علاج کرنے کی بار بار کوششیں ناکام ہو گئیں۔ کبھی کبھار، جانور وقفے وقفے کے بعد صحت یاب ہو سکتے ہیں۔ تاہم، عام طور پر، صرف علامات غائب ہو جاتے ہیں اور جانور بیمار رہتے ہیں۔ اس طرح کے جانور دوسرے جانوروں کے لئے انفیکشن کے خطرناک ذرائع ہیں جن کے ساتھ وہ شریک ہوتے ہیں۔

کیا بروسیلوسس سے بچا جاسکتا ہے؟

جی ہاں: صفائی کے مناسب طریقے استعمال کر کے بروسیلوسس سے بچا جاسکتا ہے۔ ریوڑ کی مناسب تدبیریں بھی اس بیماری سے بچنے میں معاون ثابت ہو سکتی ہیں۔ ان میں شامل ہیں: بندریوں کو برقرار رکھنا، جانوروں کی انفرادی شناخت کو ریکارڈ کرنا اور درست ریکارڈ کو برقرار رکھنا، خریداری کے اضافوں کو الگ تھلگ اور جانچ کرنا نیز مویشیوں کو ریوڑ میں دوبارہ داخل کرنا اور تشخیصی ورک اپ کا اہتمام کرنا۔ ممکنہ طور پر یا مشتہ بروسیلوسس سے متاثرہ مویشیوں کے لئے نیک فصلیں۔

کیا بروسیلوسس کے خاتمے کا کوئی پروگرام ہے؟

جی ہاں: 1954 میں کانگریس کے فنڈز کو ملک سے اس مرض کے خاتمے کے لئے پہلے کوآپریٹو اسٹیٹ۔ فیڈرل بروسیلوسس خاتمہ پروگرام کے لئے منظور کیا گیا۔ جانوروں کی بیماریوں کے خاتمے کی دیگر کوششوں کی طرح، پروگرام کی کامیابی کا انحصار اس کی مدد اور شراکت پر ہے مویشی پالنے والے۔ بنیادی نقطہ نظر ہمیشہ سے پچھڑوں کو قحطی سے پلاننا، مویشیوں اور انفیکشن کے لئے گھریلو بکریوں کی جانچ کرنا اور متاثرہ جانوروں کو ذبح کرنے کے لئے بھیجنا ہے۔ ریوڑ کی آبادی، اگر فنڈز دستیاب ہوں تو، اگر ریوڑ شدید متاثر ہوتا ہے تو استعمال کیا جاسکتا ہے۔ مارکیٹ کے جانوروں کی کھوج کے لئے شناخت، متاثرہ جانوروں کی تلاش کے لئے نگرانی، متاثرہ ریوڑ کی تفتیش اور بروسیلوسس سے متاثرہ علاقوں میں متبادل پچھڑوں کی بلیسٹینیشن موجودہ پروگرام کی اہم خصوصیات ہیں۔ پروگرام کے یکساں طریقے اور قواعد ریاستوں کے خاتمے کے حصول کے لئے کم سے کم معیارات طے کرتے ہیں ریاستوں کو بروسیلوسس

فری نامزد کیا جاتا ہے جب ایک فعال نگرانی پروگرام کے تحت ان کا کوئی بھی مویشی یا بکری سنسل 12 ماہ تک متاثر نہیں ہوتا ہے۔

بروسیلوسس خاتمہ پروگرام کتنا موثر ہے؟

پروگرام کے آغاز میں، بروسیلوسس پورے امریکی مویشیوں میں پھیل گیا تھا، لیکن خاتمے کی کوششوں کے ڈرامائی نتائج برآمد ہوئے ہیں۔ 1956 میں، ریاستہائے متحدہ میں جانچ کر کے 124،000 متاثرہ ریوڑ پائے گئے۔ 1992 تک، یہ تعداد کم ہو کر 700 ریوڑوں پر آگئی تھی اور متاثرہ، گھریلو ریوڑ کی تعداد اس وقت سے کم ہو کر ایک ہندسے پر آگئی ہے۔ یو ایس ڈی ای، اے پی ایچ آئی ایس، کوآپریٹو اسٹیٹ فیڈرل پروگرام مویشی مویشیوں اور بکریوں سے ملک بھر میں بروسیلوسس کے خاتمے کے مقصد کے حصول کے لئے کام کر رہا ہے۔ فی الحال تمام 50 ریاستیں، پورٹو ریکو اور امریکی ورجن جزیرے بروسیلوسس کلاس فری ہیں۔

جانوروں کی صنعت کے لئے بروسیلوسس کتنا مہنگا ہے؟

مویشیوں اور دودھ کی صنعتوں اور امریکی صارف کوآپریٹو اسٹیٹ فیڈرل بروسیلوسس خاتمہ پروگرام کی کامیابی سے بڑی مالی بچت کا احساس ہوا ہے۔ کم دودھ کی پیداوار، اسقاط پچھڑوں اور سوروں کی کمی اور افزائش نسل کی کمائی سے ہونے والے سالانہ نقصانات 1952 میں 400 ملین ڈالر سے کم ہو کر آج 1 ملین ڈالر سے کم ہو گئے ہیں مطالعات سے پتہ چلتا ہے کہ، اگر بروسیلوسس کے خاتمے کے پروگراموں کی کوششیں بند کر دی گئیں تو، گائے کا گوشت اور دودھ تیار کرنے کے اخراجات میں 10 سال سے بھی کم عرصے میں تخمینہ 80 ملین سالانہ اضافہ ہوگا۔

کیا وہاں قومی نگرانی کی کوئی حکمت عملی ہے؟

جی ہاں: مقصد یہ ہے کہ ایسی حکمت عملی بنائی جائے جس سے یہ اعتماد برقرار رہے کہ قومی گائے کا گوشت اور دودھ والے جانوروں کے ریوڑ میں بروسیلوسس ایک ملین سے بھی کم جانور میں موجود ہے۔ گھریلو بکریوں کی حکمت عملی میں شامل ہے۔ نمونے لینے کا طریقہ مردم شماری پڑتی سپلنگ سے دور ہے جو اصل میں بیماری کے خاتمے کے لئے وضع کیا گیا ہے اور موجودہ صورتحال کے ل۔ ایک اور موزوں ہے قومی مویشیوں کے ریوڑ کے سائز پڑتی ذبیحہ نگرانی کے لئے نشاندہاتی نمونے استعمال کرتے ہوئے، اس حکمت عملی کے نتیجے میں ذبح شدہ نگرانی کے نمونوں کی تعداد میں اندازاً 50 فیصد یا زیادہ کی واقع ہوگی۔ اس منصوبے کے تحت ریاست کے حساب سے مردم شماری کے نمونے ختم کر دیئے گئے ہیں قومی ریوڑ کی بیماری سے پاک حیثیت کا موثر طریقہ سے مظاہرہ کرنا قومی حیثیت پڑتی نگرانی کی حکمت عملی بروسیلوسس کے لئے بیماری سے پاک کے طور پر تسلیم شدہ ملک کے لئے عالمی ادارہ برائے جانوروں کی صحت کے مقرر کردہ معیارات سے تجاوز کر گئی ہے۔

مویشیوں اور گھریلو بکریوں میں انفیکشن کیسے پایا جاتا ہے؟

ہر ریوڑ میں ہر جانور کی جانچ کے بغیر انفیکشن کی نشاندہی کرنے کے لئے دو بنیادی نگرانی کے طریقہ کار استعمال کیے جاتے ہیں۔ کچھ ریاستوں میں، بروسیلوسس کے ثبوت کے لئے کریمریری یا فارم کے دودھ کے ٹیسٹوں سے حاصل کردہ ایک چھوٹے نمونے کی جانچ کر کے، ڈیری ریوڑوں سے دودھ کی جانچ پڑتال کی جاتی ہے۔ مویشی اور گھریلو بکریوں کو دودھ فروخت نہیں کرتے ہیں ان کا باقاعدگی سے جانوروں کی منڈیوں، کچھ ریاستوں میں، یا وفاقی طور پر نامزد ذبح کی سہولیات پر ان ریوڑوں سے فروخت ہونے والے خون کی جانچ کرنے والے جانوروں کے ذریعہ بروسیلوسس کے لئے ٹیسٹ کیا جاتا ہے۔ کچھ مستثنیات کے ساتھ، بیماری کی تحقیقات کے لئے ریوڑ کے ٹیسٹ میں 6 ماہ سے زیادہ عمر کے تمام مویشی اور بکریوں شامل ہوں گے سوائے اس کے کہ اسٹیرز اور اسپائڈ میفیرس کے۔ اس کے علاوہ، کچھ ریاستوں میں بالغ مویشیوں اور بکریوں کو بروسیلوسس کے مالکانہ تبدیلی پر خون کے ٹیسٹ کروانے کی ضرورت ہوتی ہے یہاں تک کہ اگر ایک فارم سے دوسرے فارم میں بھی براہ راست فروخت ہو۔ اگر بروسیلوسس ٹیسٹ مثبت جانوروں کا پتہ لگانے والے جانچ، مویشیوں اور بکریوں میں ہوتا ہے۔

ویٹرنری کالج جھنگ میں 'Dramatics Club' کی نئی کابینہ کی تقریب حلف برداری



لاہور: کانفرنس روم کالج آف ویٹرنری اینڈ اینیمل سائنسز جھنگ میں پرنسپل پروفیسر ڈاکٹر فیاض قمر کی زیر نگرانی، تمثیل نگری کی نئی کابینہ کی تقریب حلف برداری ہوئی۔ اس میں وائس چانسلر یونیورسٹی آف ویٹرنری اینڈ اینیمل سائنسز، لاہور، پروفیسر ڈاکٹر نسیم احمد نے بھی شرکت کی اور نئی کابینہ سے حلف لیا۔

سال 2021-2022 کیلئے ایسوسی ایٹ سینئر ٹیوٹر، ڈاکٹر سعید عون محمد کی زیر نگرانی، محمد اشجق کو صدر منتخب کیا گیا۔ اس موقع پر وائس چانسلر نے ادارے میں ہم نصابی اور غیر نصابی سرگرمیوں کے بڑھتے ہوئے رجحان کو سراہا اور مزید محنت کی تلقین کی۔ آپ کا کہنا تھا کہ ایسی تمام skill communication اب انڈسٹری کی ڈیمانڈ ہیں اور یونیورسٹی پڑھائی کے ساتھ ساتھ ان پر بھی مکمل توجہ دے رہے ہیں۔ پرنسپل پروفیسر ڈاکٹر فیاض قمر نے ایسی تمام سرگرمیوں کی بھرپور پزیرائی کا یقین دلایا اور نئی منتخب کابینہ کو مبارکباد دی۔

وائس چانسلر یونیورسٹی آف ویٹرنری اینڈ اینیمل سائنسز کا جھنگ کیمپس کا دورہ

لاہور: وائس چانسلر یونیورسٹی آف ویٹرنری اینڈ اینیمل سائنسز، پروفیسر ڈاکٹر نسیم احمد نے جھنگ کیمپس کا دورہ کیا۔ پرنسپل پروفیسر ڈاکٹر فیاض قمر نے ان کا استقبال کیا۔ اس دوران انہوں نے کیمپس کے تمام ڈیپارٹمنٹس کا دورہ کیا۔ لیبارٹریوں میں کام کرتے اسٹوڈنٹس کا جائزہ لیا۔ کلینیکل سائنسز میں وقت گزارا اور بچوں کی hands-on ٹریننگ کے عمل کو سراہا۔ آپ نے ہاسٹل، لائبریری اور سٹوڈنٹ میس کا بھی دورہ کیا اور تمام کوششوں کو سراہا۔

اساتذہ اور سٹاف نے ریٹائر ہونے والے پرنسپل پروفیسر ڈاکٹر عبدالغفور صاحب کو اعزازی الوداعی تقریب اور ڈنر پر مدعو کیا۔ وائس چانسلر پروفیسر ڈاکٹر نسیم احمد نے بھی شرکت کی اور سابق پرنسپل کی کوششوں کو بہت سراہا اور ادارے کیلئے نیک تمناؤں کا اظہار کیا۔ آپ نے اسٹوڈنٹس اور proctorial board کے ممبران سے بھی ملاقات کی اور ان کے مسائل سنے۔ پروفیسر ڈاکٹر نسیم احمد نے تمام ادارے میں گئے تمام ترقیاتی کاموں اور علمی و عملی ٹریننگ کو سراہا۔ وائس چانسلر کا کہنا تھا کہ "یواس اپنی تمام تر کوششیں اس مقصد کیلئے صرف کر رہی ہے کہ انڈسٹری کی ڈیمانڈ کے مطابق اپنے گریجویٹ تیار کئے جائیں جو علمی و عملی طور پر مکمل ہوں"



بقیہ: پولٹری انڈسٹری ---
لہذا حکومت سے گزارش ہے کہ وہ پولٹری فارمرز کے لئے کوئی خصوصی چیک کا اعلان کرے تاکہ پولٹری انڈسٹری سستی اور صحت مند پروٹین مہیا کرتی رہے اور اس کی قیمت بھی ہر انسان کی قوت خرید کی پہنچ میں رہے۔ حکومت سے گزارش ہے فیڈ کے درآمدی اجزاء سو یا بین میل اور سو یا بین سیڈ وغیرہ سے ڈیوٹی اور ٹیکس سے مستثنیٰ کیا جائے اس سے فیڈ کی قیمت کم ہو جائے گی۔
ہم امید کرتے ہیں کہ حکومت پاکستان پولٹری انڈسٹری کے مسائل پر ہمدردانہ غور فرمائے گی اور پولٹری انڈسٹری کو ریلیف فراہم کرنے کی ہر ممکنہ کوشش کرے گی۔
آخر میں انہوں نے پرنٹ و الیکٹرونک میڈیا کا تہدول سے شکریہ ادا کیا جنہوں نے ہمیشہ پاکستان پولٹری انڈسٹری کے ساتھ ہر مشکل گھڑی میں ساتھ دیا اور پی پی اے کی آواز حکومتی ایوانوں تک پہنچائی۔

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نصوصیات

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



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پولٹری انڈسٹری شدید مسائل کا شکار



ہے۔ جس کی وجہ سے پولٹری فیڈ بہت مہنگی ہو گئی ہے اور ایک سال سے 100 فیصد پیداواری لاگت بڑھ گئی ہے۔
بقیہ صفحہ نمبر 23

کل وقتی ادارے اور میڈیا بالکل خاموش ہے اور پولٹری فارمرز شدید نقصان اٹھا رہا ہے۔ نتیجتاً فارم بند ہو جانے کی صورت میں مرغی کا گوشت نایاب ہونے کا اندیشہ ہے۔ اس وقت فیڈ کار ریٹ تقریباً 3750 روپے فی 50 کلو گرام بیگ ہے، کیونکہ موجودہ بجٹ میں حکومت نے سویا بین پر پہلے سے عائد 10 فیصد سبز ٹیکس بڑھا کر 17 فیصد کر دیا

بوجہ رانی کھیت بیماری کا شکار ہوئی اور مال کی کمی واقع ہو گئی۔ جسکی وجہ سے مرغی کا ریٹ وقتی طور پر 400 روپے فی کلو ہو گیا، تو گورنمنٹ کے تمام ادارے اور میڈیا حرکت میں آ گیا۔ مگر اب جبکہ فارم سے 200 روپے کلو والی مرغی تقریباً 100 روپے کلو میں فروخت ہو رہی ہے اور گوشت 180 روپے کلو تک فروخت ہو رہا ہے۔ اب

واضح ہے کہ ان حالات کی بنا پر فارمرز کو ایک مشکل اور کٹھن حالات کا سامنا ہے۔ اس لئے حکومت کو بھی چاہئے کہ وہ ان کے مسائل کے حل کے لئے اقدامات کرے اور پولٹری فارمرز کے لئے کوئی ریلیف پیکیج کا اعلان کرے۔ جیسا کہ تمام شیڈ یولڈ ٹیکس کو ایسے احکامات جاری کئے جائیں کہ پولٹری فارمرز کو کم سے کم منافع لے کر کاروباری قرضے

میجر (ریٹائرڈ) سید جاوید حسین بخاری (سیکرٹری پی پی اے نادرین ریجن) لاہور: پاکستان پولٹری ایسوسی ایشن (نارتھ ریجن) کے وائس چیئرمین راجہ متیق الرحمن عباسی نے آج پریس بریفنگ میں کہا کہ پولٹری زراعت کے شعبوں میں سب سے منظم سیکٹر ہے۔ اس وقت پولٹری انڈسٹری گل استعمال ہونے والے گوشت کا 4550 فیصد حصہ مہیا کر رہی ہے۔ تقریباً 15 لاکھ لوگوں کا روزگار اسی شعبے سے (بالواسطہ اور بلا واسطہ) وابستہ ہے۔ پولٹری انڈسٹری معاشی ترقی میں اہم کردار ادا کر رہی ہے۔ پولٹری گوشت کا سب سے سستا ذریعہ ہے۔ پاکستان پولٹری انڈسٹری میں جدید ترین ٹیکنالوجی اور جدید مشینری کا استعمال کیا جا رہا ہے۔ جس کی وجہ سے ہمارے ملک میں بین الاقوامی معیار کی برائیلر تیار کی جاتی ہے۔ پاکستان پولٹری انڈسٹری عوام کو کئی سالوں سے مرغی کے گوشت اور انڈوں کی شکل میں سستی اور معیاری پروٹین فراہم کرنے میں کوشاں ہے۔ مرغی کے گوشت کی قیمت میں اتار چڑھاؤ طلب و رسد کے بنیادی اصولوں کے مطابق متعین ہوتا ہے۔ اسی لئے اکثر اوقات فارمرز کو پیداواری لاگت سے بھی کم قیمت پر برائیلر کو فروخت کرنا پڑتا ہے۔ کیونکہ یہ ایک فائزیر (Perishable Item) چیز ہے اور اس کو محفوظ نہیں رکھا جاسکتا۔ اسی طرح سارا سال قیمتوں کے اتار چڑھاؤ میں کبھی فارمرز فائدہ اور کبھی نقصان میں رہتا ہے۔ لیکن اوسطاً اس کی قیمت سال بھر میں مناسب رہتی ہے۔



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گزشتہ دو سالوں سے پولٹری کی پیداواری لاگت مسلسل بڑھ رہی ہے اور اس وجہ سے فارمرز کو شدید نقصانات ہو رہے ہیں اور فارمرز بینک کرپٹ ہو چکے ہیں۔ یہ بات

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