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Inside

Uplifting of livestock will eliminate poverty ... 04

Shoab Akhtar rants against ... 06

Camel milk pasteurization plant... 07

Epidemiological prevention ... 19

Pakistan's Poultry Association seeks relief from center amid Coronavirus outbreak

AVN Report

KARACHI - Pakistan's Poultry Association (PPA) recently appealed to Government to seek short term loans in the wake of risk recently imposed by Coronavirus in the country.



In a pictorial post advertised in major newspapers, PPA's officials wrote that they were very hopeful for a favorable response from the government and that not only will they take notice of this but also, would take action and a positive

decision to tackle this devastating condition of the poultry industry. PPA representatives said that Pakistan's poultry industry was ranked amongst the most advanced and hi-tech industries in the world. Its

poultry farms, hatcheries and feed mills were at par with those in the US and Europe both by quality standards and technologically. The industry has over Rs 750 billion private investment, providing employment to around 2.0 million people which made it a source of pride for the country. Chicken meat and eggs were the cheapest source of high-quality protein which is the preferred food for the common man of the country.

Continued on Page 15

Combating locust plague: A new challenge for the local farmers

AVN Report

PIPLI PAHAR - According to recent reports, Pakistan's farmers have been struggling to combat the worst locust plague in nearly three decades as insect



swarms decimated entire harvests in the country's agricultural heartlands and sent food prices soaring.

Heavy rains and cyclones sparked 'unprecedented' breeding and the explosive growth of locust populations on

Continued on Page 15

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Govt mulls over raising wheat support price in favour of farmers

AVN Report

ISLAMABAD - Food ministry recently decided to propose the Economic Coordination Committee (ECC) of the cabinet to further increase wheat support price by Rs50 per 40 kilograms to give relief to the farmer community amid inclement weather. Minister for National Food Security and Research Khusro Bakhtyar took the decision during a wheat review committee meeting to recommend to the ECC to approve increase of minimum support price for wheat crop 2019/20 to Rs1,400 from Rs1,365 per 40 kilograms.



In November last, the ECC increased wheat support price by Rs50. The increase was given after a five-year gap. In 2014, the government raised wheat support price by Rs100.

Federal and provincial secretaries, representatives of Pakistan Flour Mills Association, Pakistan Agricultural Storage and Services Corporation (PASSCO), wheat

Continued on Page 15

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High Quality - Our Strength

Uplifting of livestock will eliminate poverty from country: Pitafi

AVN Report

HYDERABAD - Sindh Minister for Livestock and Fisheries, Abdul Bari Pitafi recently addressed a workshop

organized by the Thardeep. He said that the eliminating of poverty from the country would require support to small business activities like uplifting the fisheries and livestock sectors.

Member of Provincial Assembly (MPA) Fayyaz Ahmed Butt, MPAs Balochistan Assembly Shaheena Kaka, Maha Jabin, Ahmed Nawaz and Qadir Nahil, Secretary Local Government Balochistan Saleh Muhammad and

Additional Secretary Social Welfare Balochistan Abdul Rauf, among other officials attended the workshop. While addressing the



workshop, Abdul Bari Pitafi said, "The need for providing a conducive environment to the investors and the role of the non-governmental organizations (NGOs) in this regard is crucial."

The provincial minister assured that all possible steps were being taken to provide the facilities to the

farmers of the region. He said that arranging the livestock expo at Hyderabad was also meant to promote the potential of the livestock sector across the country.

Pitafi underscored the need of capacity development of the farmers to enhance the production while meeting all the

regulatory standards. He apprised that an effective vaccination program was being carried out in rural as well as urban areas of the province to immunize the livestock animals.

The Thardeep's Chief Executive Allah Nawaz Samoo gave a detailed presentation about projects of his NGO.

China delivers pesticide spray to combat locusts in Pakistan



AVN Report

KARACHI - The Chinese government recently delivered the pesticide sprays to the Government of Pakistan which it promised late last month to combat locusts in the country, which are now emerging as a threat to food security.

Earlier, at a press briefing held Chinese Government officials had promised to provide malathion (insecticide) along with high-efficiency remote sprayers and other equipment to Pakistan in a bid to control the locusts which are affecting a huge area of land in the country. In addition to the sprays, plant protection drones, also included in the assistance package, were expected to reach the country in the next two weeks.

The first batch of assistance, which included 50,000 litres of malathion (50 tons) and 14 air-powered high-efficiency remote sprayers, arrived in Karachi on a chartered flight.

"The remaining material will be delivered to Pakistan as soon as possible," said Li Bijian, Consul General of China in Karachi. "The drones, which are 70 in number, are being transported through sea route and will reach Karachi in two weeks."

Last year, Pakistan faced the worst locust attack in the past 27 years, during which crop areas mainly in Punjab, Balochistan and Sindh were impacted. Swarms of locusts caused significant damage to cotton, wheat and corn crops as well as livestock pastures, sparking concern about agriculture and food security in Pakistan.

Livestock dept. warns citizens about unhygienic meat

AVN Report

MULTAN - Livestock department suggested citizens to buy healthy meat, stamped by livestock department, to avoid animal sourced diseases. Additional Director Livestock (Vehari), Dr Zakir Ali said ailing animals could be source for many diseases including

diarrhea, tuberculosis, brucella and some others. While addressing the media, Dr Zakir



informed that Livestock department used to inspect animals twice, ante-mortem (before slaughtering) and post-mortem. In case of any issue, Livestock did not allow butchers to slaughter or sale diseased meat. Dr Zakir also stated that the meat should be purchased from neat and clean butchers. It should not be purchased from ailing butchers. The butchers should cut their nails regularly.

Similarly, there should be no blood in slaughtered animals. "The meat should be washed properly. In case butchers receive any cut during cutting of meat, they must ensure timely treatment or dressing of the wounded area because human blood could also cause issues for customers," informed Dr Ali. To another query how Livestock Department assesses about diseased animals, the livestock official informed that sometime they found damaged liver. "Such animals were not allowed for sale," he stated.

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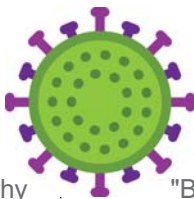
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'Why do you eat bats, cats and dogs?'



AVN Report
KARACHI - Former Pakistan fast-bowler, Shoaib Akhtar has recently launched a stunning rant at China as he blamed them for the coronavirus pandemic. And as coronavirus keeps taking a toll on the world, Shoaib Akhtar could not help but slam China for the mess. The outspoken ex-cricketer blasted the Asian country for eating 'haram' meat. In a video posted on his YouTube channel, Shoaib Akhtar asked the Chinese why do they eat bats, cats and dogs and drink their urine and blood. "I don't understand - if God has made halal animals, why are you eating haram?" Akhtar questioned in the very

beginning of the video. "When God has given you so much livestock, why can't you eat that? Why do you have to eat bats, cats and dogs, drink their urine, their blood, and spread the virus in the entire world? I don't understand, I'm really angry. They've gotten the whole world at stake, these Chinese" he says, slamming an entire race of people while disapproving of their eating habits," Shoaib Akhtar further added in his extraordinary tirade against the Chinese. The legendary pacer was not done yet and went on to directly address Chinese people, said, "I'm really angry to see that by eating strange things, you've not only doomed yourself but put the

rest of us at risk too." "But you must understand, I'm not against the Chinese, I'm against law of the animals. How can you eat them? It's probably your culture but it's not benefiting you - it's hurting humanity. In third world countries like India, Pakistan, Bangladesh even Sri Lanka - there are not enough facilities. You must stop," Akhtar added. Earlier, Pakistan Cricket Board called off the Pakistan Super League (PSL) just before the knockout games. Hours before the two semifinals, the PCB decided to suspend the tournament for the time being as the coronavirus cases increased in Pakistan.

Cattle rearers can avail subsidy under new Govt schemes

AVN Report

MULTAN - According to the Government of Punjab's new 'Calf Fattening' and 'Save Calf' schemes promised to enable cattle rearers get handsome subsidy. These subsidies ranges from Rs 4000 till Rs 6500 per calf subject to fulfilling post-registration growth requirements.



Additional Director, Livestock Multan region, Dr Muhammad Afzal told that cattle rearers can get groups of 40 calves under Save Calf scheme and 25 calves under Calf Fattening scheme. Dr Afzal said that total 1740 calves have been registered in Multan, Shujabad and Jalalpur Pirwala from July 2019 to Feb 2020 and over 25 veterinary doctors have been deputed to visit cattle farms and check their health and growth.

Dr. Afzal said that under 'Calf Fattening' Scheme, cattle rearers are required to take care of one-month old calves for a period of five months and they would be entitled to get Rs 6500 per calf provided they are healthy and have increased their weight at the rate of 300 grams per day. Under 'Save Calf' scheme, cattle rearers are required to take care of calves of the age of a year or slightly above, each weighing at least 131 kilogram, for a period of four months. Cattle rearers would be entitled to get Rs 4000 subsidy per calf under Save Calf scheme provided the weight of the calf is increased at the rate of 500 grams per day. The subsidy would be provided to cattle rearers by livestock department on the report of veterinary doctors.

Free medicines provided to protect cattle in KPK

AVN Report

PESHAWAR - The program, initiated by Khyber Pakhtunkhwa Livestock and Diary Development (Extension) recently started its fourth phase. The Annual Development Program's scheme titled 'Control of Livestock Diseases of Economic Importance in Khyber Pakhtunkhwa', would provide free medicines to protect cattle from fatal epidemic in six districts of the province. The program was aimed to protect cattle including cows, bulls, sheep, goats and hens from different fatal epidemic like Hemorrhagic Septicemia (Gul Gotho), Enterotoxaemia (toxin of entrails), Black Quarter (Choray Maar), Anthrax (Sut), PPR (Kata), CCP (Phenomena) and New Castle Disease (Rani Khait).

Continued on Page 20

Campaign inaugurated to vaccinate cattle heads

AVN Report

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Turkey's TiKA endorses farmers in Pakistan

AVN Report

SARGODHA - Turkish and Pakistani authorities recently attended a ceremony for the delivery of machines and the inauguration of the center. Speaking at the ceremony, Nadeem Afzal Chan,



Spokesman for the Pakistani prime minister, said they appreciated TiKA's projects that focused on solutions and prioritizing the needs of local populations. He said the contribution to agriculture and livestock breeding was very valuable for Pakistan's rural community. It was announced that TiKA - Turkish Cooperation and Coordination Agency - TiKA recently delivered milking machines to Pakistani farmers and built a training center for them. The agency cooperated with a local agency for improving livestock breeding in the city of Sargodha and gave out 20 mobile milking machines. It also built a training center with

Continued on Page 20

Camel milk Pasteurization Plant to be initiated in Balochistan

AVN Report

HUB - According to an official of the livestock department, the project of pasteurization of the camel milk with a price of Rs.50 million would be started in Musakhel and Washuk areas of the province. Two livestock markets would also set up in Rakhni and Hub for facilitating the cattle owners of the locality, as per the reports of local media.



The official further detailed that more than 104 different national firms would be opening their offices in Quetta for making an investment with Balochistan livestock department for the development and progress of the sector. He also said that the rural poultry project under the PM Khan's poultry scheme with a cost of Rs.900 million has already been commenced in the various areas of the province. Earlier, the Chief Minister of Balochistan, Jam Kamal Khan said that the government was committed to uplift the agriculture and livestock sector in the province. He told that the provincial government was taking solid measures to promote the agriculture sector in Pakistan. He also said that the provincial government would be having the first-ever livestock expo in Quetta in the month of April.

China to assist Pakistan with 50 drones, pesticides against locusts

AVN Report

ISLAMABAD - China has agreed to assist Pakistan to combat the menace of locust in various parts of the country with \$5 million technical support besides providing 50 drones and 300,000 litres of pesticides to carry out spray in affected areas of Sindh, Balochistan and Punjab. Secretary of National Food Security and Research Muhammad Hashim Popalzai told that the Chinese government had decided to send drones urgently, and the first batch of drones would reach Pakistan on March 9. The use of fixed and rotary wing unmanned aerial vehicles (UAV), commonly called drones, are potential means of improving desert locust monitoring, early warning and rapid control, and reducing costs of survey and control operations. The Chinese authorities would also send technical staff to carry out operation



and train staff of the Plant Protection Department and concerned provincial departments, he said. The government is negotiating with a mission of the Chinese aviation industry for the supply of aircraft to carry out aerial spray in the locust-affected areas. Mr Popalzai said that the government would acquire six aircraft on lease for three to four months to completely eliminate locusts from agricultural fields of the country. Earlier, A Chinese technical team completed its two-week mission to Pakistan and left for Beijing. The team visited

the locust-affected areas of Sindh, Balochistan and Punjab and had final wrap-up meetings at the ministry of national food security and the national disaster management authority. The Chinese assistance is part of strengthening the national action plan to combat the locust attack that has caused serious damage to agro-pastoral resources of the country. Desert locust is an international trans-boundary concern with major economic, social and environmental implications. According to preliminary assessment carried out by

Continued on Page 20

AVN Report

HYDERABAD - A programme was recently held on "Women Empowerment through Women's Increased Access to Water Resources and Agricultural markets," organised by Strengthening Participatory Organisation (SPO). Mustafa Nangraj, a leading researcher in plantation, crops productivity and nutrition was invited as main speaker of the event. Besides media persons, representatives of Agriculture Extension, Livestock department, Sindh Irrigation and Drainage Authority (SIDA) and independent researchers attended the event to discuss the challenges facing rural women, mostly in farming, livestock and water governance. While addressing the audience, Mustafa Nangraj said that there was a consensus among researchers and experts in agriculture, water and livestock management that rural women's participation in decision making at all levels-- ranging from production to marketing-- might contribute to increasing family's income. Mr Nangraj gave a reference of a recent study he had conducted in 12 districts of the province, saying

Speakers shed light on women's contribution to agriculture, livestock sectors



that 60 percent women did not have the power to decide about crops farming. Sharing his observations, Mustafa said that women played a major role in agriculture, while men had a little role. Thus, he suggested engaging women in agriculture, livestock management and water governance was essential. He suggested introducing an integrated model in agriculture, by planting high density fruit trees, especially reviving traditional ones at homes to have access to nutritious food. "High density orchards, like of

mangoes, guava, lemons and other common fruits are must to prevent the issue of malnutrition in rural areas. Orchards once developed will sustain and benefit the farmers. It takes 18 months to give fruits," he said, and added that usually farmers cultivated 25 trees per acre, but in high density orchards we can plant up to 200 trees in the same space of land," Nangraj underscored. Pirbhu Satyani, Regional head of SPO, briefed the gathering about the importance of strengthening women's role in water governance, agriculture and livestock; the major

components of rural economy. "In this regard, SPO will provide needs based grants to 500 struggling rural women so that they could start small-scale businesses in the fields of agriculture and livestock," he said. Pirbhu shared with the audience the results of need assessment conducted in three districts, including Badin, Tando Muhammad Khan and Hyderabad, by interviewing community women. Satyani said that women workers were paid between Rs200-300 daily which was very less compared to minimum wage which is 673 rupees per day. "This disparity also causes the problem and added it has been observed that middlemen collected milk from women livestock farmers because they (women) do not have direct access to the market. We are planning to form self-help groups so that these women could have direct access to the markets," he said. Mr. Satyani said despite major contribution of women in rural economy they face challenges of financing, marketing and newly emerging technology and lacking access to market directly. In some

Continued on Page 20

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Pakistan is certainly a wonderful country blessed with natural resources, one being livestock and wild life. Zoo-geography and Phyto-geography of this country brings some highly precious wild fauna and flora, that are gradually being pushed towards endangered status, and if their conservation is not properly taken into consideration, soon many species of plants and animals maybe in the list of extinct like dinosaurs.

The wildlife of Pakistan encompasses a diverse flora and fauna in a wide range of micro and macro habitats from sea level to high elevation areas in the foothills, estimated counts include 177 mammals and 660 birds.

Unfortunately, there has been red tape with long sleeping over any legislation aimed at wild life protection. Recently first ever "Wild life policy" has been introduced in 2017. There was a dire need for a comprehensive National Wildlife Policy of Pakistan under worldwide commitments and national requirements. With this policy, Pakistan is among the few countries in South East Asian region to have its own National Wildlife Policy. But despite this all paperwork, there seems to be stand still behavior in attitude towards wild life.

Animals are generally divided into wild, domesticated and pet. A pet animal enjoys status of a family member, however, domesticated animals, despite of the fact, they contribute into our socio-economic life, are ignored at every scale.

Sheep, goat, cattle, buffalo horse and donkey are known domesticated animals contributing diversified services and providing eatable and drinkable that are rich source of protein for consuming communities.

Domestic donkeys (*Equus asinus*) have been a wonderful animal with its diversified utility for 5000 years. Although they are everywhere, but major donkey count comes from low income economies including Pakistan.



Their domestication dates to 5000 yrs. ago from Somali wild ass in Africa that spread quickly due to their ability of carrying heavy loads and transport goods to long distances and in hilly areas. The rough estimate of donkey population is about 44 million donkeys found throughout the world, with around 11 million of these donkeys found in China. Scientists believe that the real number of donkeys could be much higher than this as many donkeys go unaccounted for. Donkeys are kind of facing a population crisis because of the huge demand for their skins in China, where they are used to make health foods and traditional medicine. The donkey population in Pakistan is more than 4 million head found in latitudes and altitudes, however, some breeds like Shinghari donkey is mainly reared in Suleiman Mountainous region. Due to its large robust

body, and larger size Shinghari donkey can easily carry load up to 240-300 kg on its back. The Piddie or Sperki breeds are equally strong enough and can bear a load of 200 kg despite being small. In hilly areas, Shinghari donkey is being used



DOMESTICATED DONKEYS

Spotlight on possible 'endangered' mammal



Prof Dr Abdullah G Arijjo

Chairman
Department of Parasitology
Sindh Agriculture University Tandojam

in pastoralism. And has usefully become a substitute of camel for it can pull heavy loads in urban cities.

There are data revealing that 1.8m skins are traded every year. However, according to UK-based charity "The Donkey Sanctuary" the demand is as high as 10m.

In recent years, introduction of loading Rickshaw have hit the importance of donkey but in rural Pakistan, its importance stands intact.

Donkeys are said to have a relatively stubborn temperament but once the owner of the donkey has gained the donkeys trust, the donkey is extremely loyal and a good friend. Donkeys are not truly stubborn; they are very good at taking care of themselves. Their self-preservation instincts are strong. They will refuse to proceed if they sense danger or if they are overburdened. They pass this



valuable trait on to the mule. Donkeys are also thought to have a calming effect over distressed horses and donkeys are often put into fields with horses as they make great companions for them.

Use of donkey depends. In developed countries where their use as beasts of burden has disappeared, donkeys are used to sire mules, to guard sheep, for donkey rides for children or tourists, and as pets. Donkeys may be pastured or stabled with horses and ponies, and are thought to have a calming effect on nervous horses.

Government data reveal that China's donkey population has dropped from 11m in 1990 to 3m today. Blame goes 'Ejiao' a wonder Chinese medicine for which gelatin is extracted by boiling donkey skins, can sell for up to \$388 (£300) per kilo.

In Pakistan use of donkey meat is not allowed by religion, however, there are reports of donkey meat being sold in Lahore, the police in Karachi claimed to have recovered over 4,000 hides of the herbivores during a raid on a shop in Gulistan-e-Jauhar Block 12.

In recent months, there has been increase in donkey slaughtering all over the country. As many as 4,736 donkey hides were recovered from the shop while seven people were also arrested. The hides, according to the police, were to be exported to China.

Donkey hides are valued in the international market, especially China, where it has used for medicinal purpose. This has brought donkey as hot business animal as the price of a single hide is around Rs25,000 and a donkey is sold from Rs100,000 to Rs300,000. This has also increased stealing of donkeys.

Donkey hides are important due to gelatin which is obtained from the skin of the donkey (*equus asinus*) by soaking and stewing. The gelatin thus obtained is



Gelatin or gelatine is a translucent, colorless, brittle, flavorless food derived from collagen obtained from various animal body parts

used as an ingredient in the traditional medicine of China called Ejiao that is used in food or drink or it is used in beauty products such as face creams. Ejiao is believed to improve blood circulation so is used as a blood tonic by people with anemia, low blood cell counts or reproductive problems. This has attracted quite a few business buttons all around the world. In a recent report about 10,000 donkeys in Egypt were transported to China.

Khyber Pakhtunkhwa Government has also netted planning to vend donkeys to China after an investment of Rs 1 billion in its 'Donkey Development Programmed', in a bid to attract Chinese stockholders in the northwestern Khyber-Pakhtunkhwa province. The proposed project is expected to help improve the socio-economic status of donkey-rearing communities by improving the health and production of local donkeys. It is also anticipated that new technologies will be introduced and work will be done on capacity building of donkey breeders and services they provide.

Steps are being initiated to increase the population of donkeys in the province as the animals are highly valued in China for its hide which is used to manufacture medicines among other things, according to an official document.

Donkey skins are the basis of a Chinese traditional remedy called ejiao, which is used for treating a range of blood conditions and, increasingly, as a general wellness product. During the past decade skins have surged in value-fetching up to \$400 each-as China's donkey population has dwindled. The result is an unprecedented global trade, much of it illicit.

But reports based on research underway by The Donkey Sanctuary is revealing a worrying trend in the growing trade and demand of donkey meat and skins, and its potential effects to global donkey populations and their welfare. It is reported that in China, millions of donkeys are farmed for their skins to produce a medicinal gelatin (Ejiao). The global trading of donkey skins is now having an impact on donkey welfare and the livelihood of people around the world. Use of wild life for uplifting socioeconomic life of poor Pakistani masses is not a bad idea.

Continued on Page 20

Pigeon and diseases: An Insight

By Inam Ullah Yasir, Muhammad Ilyas, Kamran Sajid, Muhammad Saqib
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Pigeons are commonly kept around the world. Scientific name of domestic pigeon is *Columba livia domestica*. It has been considered that pigeon is the first bird to be domesticated round about 6500 years ago. Pigeons can flight 15-30 miles per hour. Pigeons were used to carry the message from one place to another, racing and as a household pets. Pigeon flocks have equal number of male and females. They make pair for whole life like humans but if one die, one can find another. Domestic pigeon has respiratory rate of 25-30 per minute, Heart rate 240 bpm and 101.84- 104 Fahrenheit body temperature. Pigeon can live up to 30 years. There are at least 800 breeds of domesticated pigeons.

The hobby of pigeon keeping and breeding

Such hobby is prevalent throughout the world. Pigeons are reared for recreation, entertainment and aesthetic satisfaction. The hobby of keeping and breeding pigeons by pigeon fanciers, for flying, racing, homing and show is popular occupation throughout the world. Belgium is the capital of pigeon fancier's.

The world's most valuable racing pigeon, named Bolt (named after Usain Bolt, world's fastest runner) was sold in 2013 for \$410,000 by a Belgian pigeon fancier, Leo Heremans, to a Chinese businessman, and in 2017 it was Belgian's 'Golden Prince' sold for \$465,000 at an auction conducted by PIPA, which organizes the largest meeting event for pigeon fanciers. Nicolaas Gijssels, a Belgian national, runs the world's biggest pigeon website, "Pigeon Paradise@PIPA_be", which has more than a million followers worldwide.

Female lays eggs at the age of 5-6 months. Female can breed up to eight times a year for up to five years. Egg hatches in about 18-19 days. After hatching, both male and female take care the young until young becomes two year old. It has been reported that pigeon have higher intelligence than the 3-years old child. Pigeon can recognize all English alphabets. Pigeons have great memory, For example pigeon can return home if he released 400-600 miles away. Speed of racing pigeon can be 60mph.

Pigeons and infectious diseases

Pigeons are de-wormed according to their types. Some pigeon diseases are described below:

Young pigeon disease (YPD) syndrome

Causative agent of this disease is still unknown. This disease occurs mostly in young racing and ornamental pigeon about the age of 2-6 months. There are different hypothesis about this disease for example this disease is associated with contact of infectious birds of different lofts and stress. In flock this disease often occurs after 3-7 days due to flight or exhibition. In flock it can cause 20% mortality and 20-80% morbidity. If this disease occurs in individual pigeon, then recovery can be done in three to five days. In individual pigeon it rarely cause peracute death. In individual

chronic disease can be caused due to complication factor such as massive infection due to *Trichomonas gallinae*.

Clinical signs:

1. Reduced general body condition
2. First sign pigeon ignore feeding signal
3. Crop filled with feed and water
4. Inappetence
5. Weight loss
6. Slimy diarrhea
7. Regurgitation

• **Treatment:** Antibiotics, recovery depends upon duration and severity of disease, efficiency of treatment.

• **Prevention:** provide clean water. To reduce stress, many training flights and disinfection of the loft and all facilities

Ectoparasites problems

Different types of lice, mites and

fleas create problems in pigeon. These parasites cause skin irritation, feather damage, restlessness and blood loss. Treatments with pyrethrin sprays and ivermectin are effective.

Pigeon pox

It is caused by pigeon poxvirus. This virus is stable in environment and can survive for many years in dried organic debris. The virus of this disease enter through abraded skin. This virus enter into the body directly through fighting, preening and feather picking. Indirectly this virus is enter through mosquitoes bite. This virus takes 7-9 days to cause disease. This disease is self-limiting but sometimes lesion become infected and painful interfere with respiration, eating and vision. If we remove scabs forcefully, it will cause deformity and scarring.

Clinical signs

Pigeon pox has 2 different forms.

1. Wet form: In this fibronecrotic diphtheritic lesions are formed in oropharynx area. This form is less commonly seen.
2. Dry form: In this form unfeathered parts of the body especially the beak and eyelids contains discrete scabby lesions. Vaccination can be done for this disease. An attenuated live vaccine is available. Vaccination should be done to birds older than 6 weeks. Vaccination must be given at least six weeks prior to the onset of racing season because vaccinated birds remain infectious for 4-6 weeks to other birds. Bird which show sign of this disease should not vaccinated. Mosquito should be controlled.

Trichomoniasis: (Canker)

Causative agent of this disease is 'Trichomonas gallinae'. It is a motile protozoan parasite. It is among the parasites which are commonly seen in pigeons. It enters through faeces, crop secretion and saliva. It has two forms, lentogenic and velogenic. These forms cause necrotic ulceration of mouth, esophagus, crop

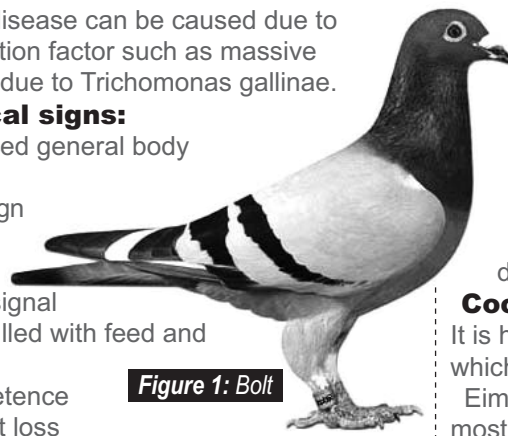


Figure 1: Bolt



Figure 2: Golden Prince

and proventriculus. That's why swabbing crop is best diagnostic method for this disease.

• **Clinical signs:** High mortality rate, dysentery, regurgitation and high-rolling.
• **Treatment:** For the treatment of this disease nitroimidazoles (Dimetridazole and Metronidazole) can be used. These drugs have good effects on it.

Coccidiosis

It is highly infectious and common disease which is caused by *Eimeria* spp. For example *Eimeria labbeana* and *E. columbarum*. It mostly affects intestine of the birds. It can be found in all pigeons but adults are usually resistance to it and Young are highly susceptible to it, which takes more stress. Adult bird can be infected through drinking unclean water and moist droppings.

• **Clinical signs:** Bird not show desire to eat or drink. Bird not show movement and often close their eyes. Watery greenish diarrhea is often seen. Bird remain puffed up on perches. Death can occur in young.

• **Treatment:** sulfadimethoxine is highly effective against it.

Prevention:

1. Keep loft dry and clean
2. Use proper Antifungal
3. Prevent the food contamination from droppings
4. Regularly disinfect water
5. Keep feed and water from contact with rodents
6. Always isolate new bird

One eyed cold syndrome

It is common and non-specific clinical entity in pigeon. It is also called eye cold, ophthalmia and big eye. It is multifactorial disease. Some times it may occurs due to vitamin A deficiency. In this disease lesions do not spread. In this syndrome one eye can completely closed if infection is at peak.

• **Clinical signs:** Watery ocular discharge, swollen eyelid with conjunctivitis, lethargy, lack of appetite.

• **Treatment:** Oxytetracycline and eye ointment can be used. Affected bird should be screened for trichomoniasis.

Hypocalcaemia

It occurs in breeding hens (Female pigeon) due to lack of nutrition in feed. Paresis of feet and wings, especially when first egg is laid, it is the most common syndrome. Bird affected with this syndrome is unable to fly and it is often seen that bird drag herself by using beak and her wings for support. Supportive care, Vitamin D3 and calcium supply is highly effective in this case.

Paratyphoid - Salmonellosis

This disease is caused by gram-negative bacteria (*Salmonella typhimurium* var. *copenhageni*, *S. arizonae*). Flagellum helps in the movement of this bacteria. Rodents, roaches, soles of fancier shoes and infected pigeon can transmit this bacteria to other pigeons. Adult birds are carrier for this disease.

Clinical signs

In salmonellosis, different types of signs and symptoms can appear due to movement of its causative agent. Most of the adults show decrease in weight, greenish diarrhea,

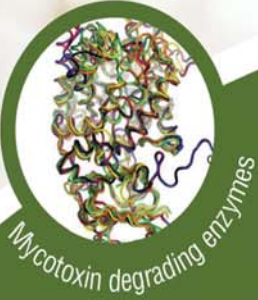
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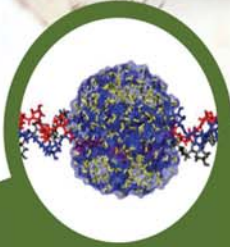
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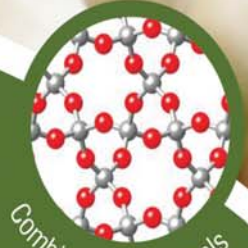
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Prevention and Control of Avian Infectious Bronchitis

By **Ghulam Asghar Solangi and Sumaira Ali**

Shaheed Benazir Bhutto University of Veterinary and Animal Sciences (SBBU-VAS), Sakrand, Sindh

Avian Infectious Bronchitis Virus (IBV) of chickens is currently one of the main diseases associated with respiratory syndrome in domestic poultry, as well as with losses related to egg production. IBV was first recognized by United States of America in the 1930. It occurred worldwide and assumed a variety of clinical forms. IBV has a significant economic impact; in broilers, production losses are due to poor weight gains, condemnation at processing and mortality, whilst in laying birds, losses are due to suboptimal egg production and downgrading of eggs. Chickens and commercially reared pheasants are the only natural hosts for IBV.

Etiology

The disease is caused by IBV a corona-virus (Coronaviridae, Orthocoronavirinae, genus Gammacoronavirus, subgenus Igacovirus). It was first isolated in 1930. By definition, IBV is a corona virus that affects domestic chickens, and replicates in respiratory tissues, as well as in other epithelial tissues, including the kidneys, gonads, and bursa.

Clinical sign

Following are common signs indicating IBV.

Respiratory form

Respiratory disease is the most

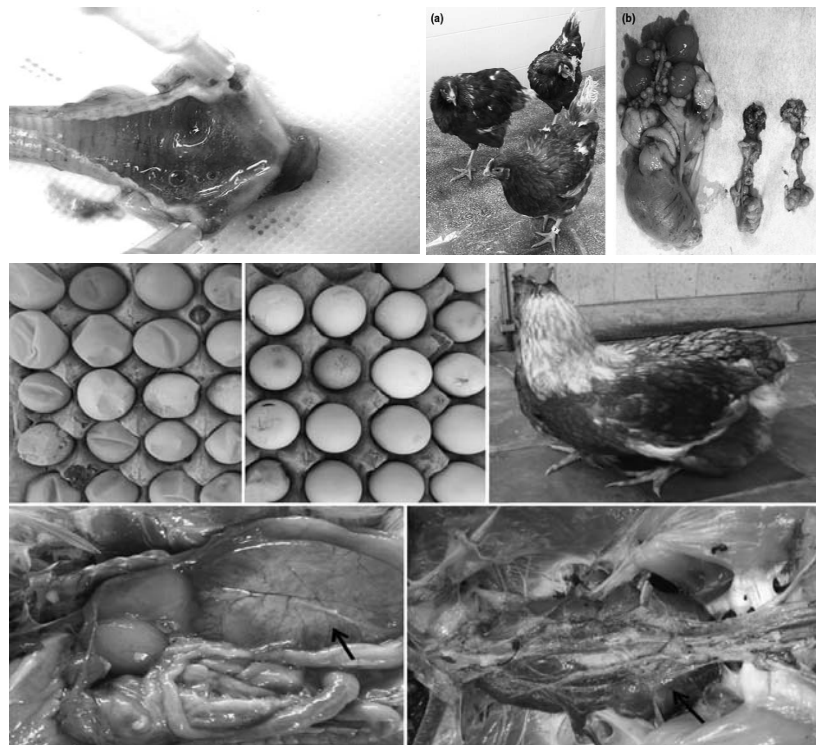
frequently observed syndrome caused by IBV. In broiler chicks of between two and six weeks of age, the main clinical signs seen are difficulty in breathing, tracheal rales, coughing and sneezing with or without nasal discharge. A generalized weakness is observed, accompanied by depression. Feed consumption and body weight are markedly reduced. The chronic respiratory disease that develops may last for several weeks, with mortality between 5% and 25%. On necropsy, the trachea is congested with excessive amounts of mucus, and where infection has been complicated with *E. coli*, airsacculitis, pericarditis and perihepatitis may be observed. Similarly, the presence of *Mycoplasma* results in more severe clinical signs, with depressed growth.

Reproductive form

Infectious bronchitis damages the reproductive organs of mature chickens, so although they may return to production six to eight weeks after contracting the disease, they may never produce well again. It also drop in egg production may sometime be more than 50%, loss of egg quality, poor albumin and soft shelled.

Urinary form

When the kidney is affected, increase water intakes, depression, scouring and wet litter are commonly observe. Young growing birds of 3-6 weeks of age are mostly affected. Mortality may reach up to 30%.



Transmission

It's the most contagious poultry disease, and it spreads rapidly. It's transmitted by contact with infected birds, contact with contaminated equipment, and can travel over 1000 yards through the air. The disease will infect a flock within 48 hours, and those birds that survive usually recover within 2 to 3 weeks.

Diagnosis

- Isolation or identification of the causative agent is required for a definitive diagnosis of IB.
- Testing serum samples at intervals (for example at the time of the clinical signs and 2 or 3 weeks later) provide the best basis for serological diagnosis. This is also applicable for monitoring vaccination results.
- Laboratory tests to identify the viral genome, viral antigen (proteins) or antibodies against the virus are important to confirm IBV infections.

Treatment

There is no specific treatment, although supportive treatment with antibiotics to control secondary

infection could be beneficial. The rate of spread can be very rapid and therefore infected flocks should be isolated to prevent the spread of disease. Supportive treatment, such as increasing the temperature of the house by 3-4°C may reduce mortality rates in infected flocks. Secondary infections that occur as a result of IB are generally more of an issue than the IB itself. Prevention and Control Survivors of infectious bronchitis are IB carriers, so the only way to eliminate it is to get rid of the flock, clean the pen or coop, disinfect everything, and start over. So, the only sure way to protect the flock is to practice biosecurity, keep it as "closed" a flock as possible and be sure to adequately quarantine any new birds before introducing them to the flock. Due to the widespread distribution of the virus, prevention and control of this disease requires a well coordinated approach, balancing biosecurity / hygienic measures and vaccination.

Detection of toxins produced by microorganisms of freshwater

By **Syed Balaj Hussain Rizvi, Wafa Yosuf**
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Water is medium for life but at the same time, it is a major source of water-borne infections in humans. Water born infections are mainly caused by toxins producing bacteria like Enterobacteriaceae family and cyanobacteria. The exotoxins produced by shigella, vibrio cholera, *E.coli* (O157: H7) and cyanobacteria are shiga toxin, cholera toxin, Shiga like toxin and cyanotoxin respectively. These toxins have a drastic effect on human health. According to the WHO- World Health Organization report, 250,000 children under the age of 5 die every year in Pakistan due to GIT infections and diarrheal disease. The

report of PCRWR (Pakistan council of research in water resources) the major part of the population is at risk of exposure to drinking polluted water that results in diarrheal diseases.

According to the UNESCO (United Nation Education Scientific and Cultural Organization) world, water development report Pakistan ranking in 80th place act of 122 nations about 40 percent of diarrhoeal cases are reported due to drinking polluted water. Our main domain is to measure or detect the presence of toxins in fresh or drinking water. For the Enterobacteriaceae family, the main purpose is the detection of genes than that gene is detected by PCR methods. And for cyanotoxins, we perform toxicity assays.



Pakistan's Poultry ...

Continued from front page

The officials of PPA said, "Pakistan is self-sufficient in chicken and egg production. Not only is the industry satisfying the protein needs of the country but also, providing services in the form of employment for its people. It is also playing a vital role in satisfying the demand for meat in the country and is a valuable exporter to countries like Afghanistan, Saudi Arabia, Qatar, Bahrain, UAE and Yemen."

In the advertorial post, it was written "In the previous fiscal year, factors like the devaluation of the Pakistan rupee, increase in the cost of electricity, import taxes and bank markups have raised the cost of poultry production by almost 50%. Regardless of this, poultry prices have not been increased. As a result, farmers are experiencing continuous losses to an extent that payment of utility bills and salaries have become difficult."

The representatives of PPA highlighted that Poultry farmers were being forced to sell premature breeder and layer flocks at lower rates. "As a result of little or no demand, a day-old chick, costing almost 40 rupees, is being sold for 3-4 rupees, resulting in heavy losses and pushing the poultry hatcheries into a financial crisis. Poultry feed is supplied to the poultry farmers on credit basis but because of the constant losses, the farmers are unable to payback and as a result, billions of rupees of the feed mills are stuck with these farmers. This is the reason why poultry farmers have stopped placing chicks in their farms; they are forced to shut down their businesses as they have to sell chicken for price lower than their production cost. Poultry feed mills, hatcheries, breeders, boilers, and layer farmers have taken loans from the banks and invested in their businesses. However, due to continuous financial losses, they are unable to pay the debt on time thus,

becoming bank defaulters," article said.

PPA's appeal read, "Corona virus has adversely impacted the world economy. In the prevailing circumstances, country-wide ban has been placed on wedding ceremonies, hotels, restaurants and travel restrictions have been imposed on the airlines. All of this has contributed to a decline in the demand hence, the prices of eggs and chicken. Additionally, as a result of the closure of international flights and borders, exports to Afghanistan, Saudi Arabia, Qatar, Bahrain, UAE and Yemen have stopped. This has resulted in further decline in the revenues, leading to devastating impact on the industry. PPA representatives urged "The poultry industry is passing through a period on heavy losses as a result of the said factors and if this continues in the same manner, poultry farmers would soon have to shut down their businesses. In such a case, this would cause reduction in the supply of eggs and chicken and that would cause the prices to increase dramatically, making it impossible for a common man to afford. Not just this, millions people, directly or indirectly related to the industry, will become unemployed."

PPA officials appealed that in order to rescue the poultry industry from prevailing crisis and cater to regular production to ensure a continuous supply, it was very important to take the following measures so that the nation-friendly industry could continue to provide quality food to its people at reasonable prices:

- Bank instalments and mark-ups may be delayed for one year.
- Bank loans may be rescheduled and government of Pakistan may pay the markup costs of loans of two years to banks.
- Short-term loans may be converted into long-term loans.
- Small farmers may be provided interest-free loans for two years.
- Electricity bills of three months may be deferred and payment be

reallocated to a year's time period, without any fines, and in instalments.

Combating locust ...

Continued from front page

the Arabian Peninsula early last year, according to the United Nations. The insects have since fanned out and wreaked havoc on farms from East Africa to India before making their way into Pakistan from the desert on the country's southwestern border with Iran. The crisis was so severe that the government has declared a nationwide emergency and urgently appealed for help from the international community.

Officials in Sindh province fear the infestation will devastate the supply of cotton, the local cash crop, ahead of its harvest in the coming months. Local surveys of the damage were continuing, but the Sindh Chamber of Agriculture says nearly half of all crops have been destroyed near Karachi.

"I have not seen an infestation like this one in my career," said Shehbaz Akhtar, an agricultural official charged with locust eradication efforts in the village of Pipli Pahar in central Punjab province.

Combat operation Local authorities had 'launched a combat operation' to clear the area of infestation with pesticide sprays, Shehbaz said. Clouds of the noxious gas envelop the nearby fields each morning, where villagers gather the husks of dead insects for an official bounty of 20 rupees (13 cents) per kilogram bag. "We spray twice a day here," says Fayyaz Azeem, clad in a face mask and thick industrial gloves on top of a tractor discharging pesticide into rows of crops.

But the process was slow and time-consuming, and by the time locusts were killed off in one held they have often already destroyed the next. The pesticides used by officials were also dangerous for consumption, so even when the locusts were dead the remaining crops have to be discarded. Some farmers have been forced to

opt for more desperate solutions while waiting for their fields to be sprayed and have attempted to scare off the swarms by shouting and banging pots.

Agriculture accounts for 20 per cent of Pakistan's GDP but the sector has already struggled for years in the face of drought and dwindling water supplies.

The country was also experiencing 12-year inflation highs, with the cost of sugar nearly doubling and wheat flour prices jumping 15pc in the past year.

Years without a locust attack meant the government 'had become complacent' about the risks of a new infestation, said Pakistan Farmers Bureau president Zafar Hayyat. Though he applauded the steps being taken to fight the plague, Hayyat warned of the risk that swarms would return mid-year after the next locust breeding season.

Govt mulls raising ...

Continued from front page

exporters and senior officials of the ministry of national food security and research attended the meeting.

The committee expressed satisfaction over wheat stock availability. It said there is 2.235 million tons of wheat available with the government in stocks to meet the country's demand. The committee was told that Sindh would start wheat procurement process from 15th March, whereas the Punjab is expected to begin procurement in April. The committee decided to recommend the ECC to let Khyber Pakhtunkhwa procure wheat from adjoining districts of the Punjab province.

The committee asked the provinces and PASSCO to timely meet wheat procurement target of 8.25 million tons. That includes procurement target of PASSCO (1.80 million tons), Punjab (4.50 million tons), Sindh (1.40 million tons), Khyber Pakhtunkhwa (0.45 million tons) and Balochistan (0.10 million tons).

The committee further sought a ban on supply of wheat to poultry industry for feeding purposes in order to maintain sufficient wheat stock for human consumption. It was told that the State Bank of Pakistan might be asked to facilitate flour millers in financial matters in terms of procurement of wheat.

Representatives of Pakistan Meteorological Department said an expected inclement weather in the end of March is likely to adversely affect the standing wheat crop especially in the central Punjab. Bakhtyar called for launching of an awareness campaign to prepare the farmers for taking timely measures. The minister directed Pakistan Standard and Quality Control Authority to use standardised wheat bags to reduce the wastage of wheat during transportation. "The government is taking measures to prevent hoarding of wheat in order to discourage profiteering," he said.

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Epidemiological Investigation and Prevention of Disease Outbreak

By Muhammad Bakhsh¹, Sumaira Ali²

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In epidemiology, an outbreak is an unexpected extends in occurrence of a disease in a precise time and place. It may additionally have an effect on a small and localized team or have an effect upon hundreds of humans. Four linked instances of an uncommon infectious ailment might also be adequate to represent an outbreak. Outbreaks consist of few elements like epidemics, time period commonly used for infectious diseases, ailments related with an environmental origin, such as a water or food borne diseases. Pandemics are near-global sickness outbreaks when more than one nation throughout the world is infected. Disease outbreaks are usually caused by an infection, transmitted through person-to-person contact, animal-to-person contact or from the environment or other media.

Investigations of Disease Outbreak

The primary reason for engaging in outbreak investigations is to perceive the source so as to establish control and to institute measures to prevent future episodes of disease. They are also once in a while undertaken to educate new personnel or to learn the mechanism for transmission. Whether a scourge investigation could be conducted may also be influenced via the severity of the disease, the capacity for spread, the provision of resources and by way of political concerns or the extent of challenge among the general public.

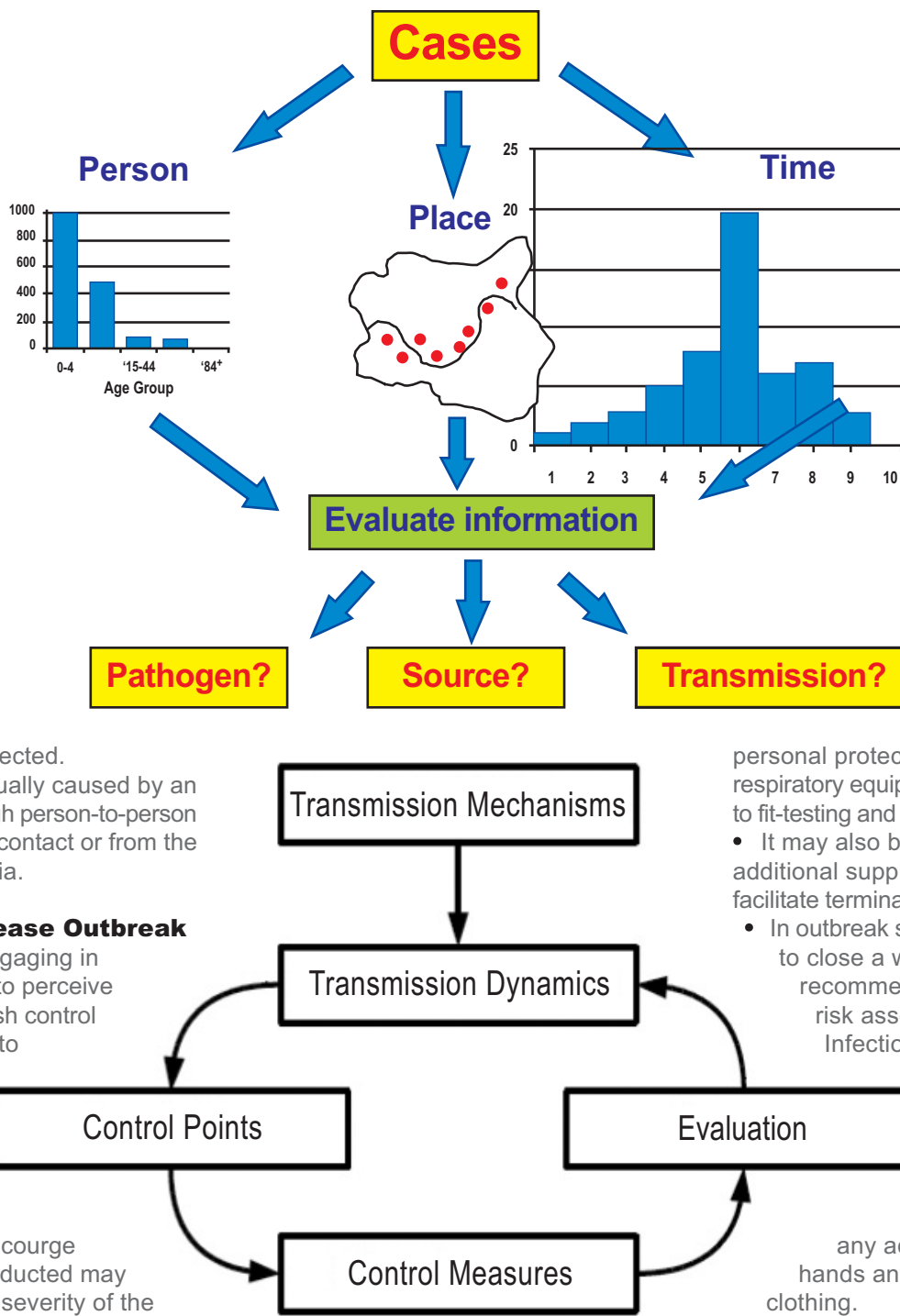
Epidemiological Investigation of Disease

Following are the steps involved to investigate a disease:

- Verification of the diagnosis
- Confirmation of existence of outbreak
- Defining population at risk
- Rapid search for cases and characteristics
- Data analysis (Time, Place and Person)
- Formulation of hypothesis
- Evaluation of ecological factors
- Further investigations
- Reporting

Control and Preventive Measures

Control measures are determined by the



results of initial analysis in consultation with appropriate professionals. They will vary depending on the agent, the mode of transmission and observation. Public health officials may decide on control measure based on strong epidemiological evidence of the disease's origin, spread and development. They do not require proof of contamination from the laboratory. This practice can result in earlier action to protect the public health. Outbreak of a disease can be controlled by appropriate preventive measures which include

- Good site planning
- Provision of basic clinical services
- Increase the resistance of host
- Inactivating the pathogen agents
- Control on the spread of infection including Isolation, quarantine, segregation and personal surveillance.

- Provision of appropriate shelter
- Clean water supply
- Sanitation
- Vaccination against specific disease
- Regular and sufficient food supply
- Control of vector
- Stay at home if you have a signs and symptoms of an infection.
- Do not share your personal item
- Get vaccinated to increase the immunity

Extra cleaning and domestic staff may be required during and immediately following the outbreak. Guidance on the decontamination of affected areas will be determined. It may be necessary to order and purchase additional

personal protective equipments. If specialist respiratory equipment is required, then access to fit-testing and training will also be necessary.

- It may also be necessary to purchase additional supplies of cleaning equipment to facilitate terminal cleaning of the environment.
- In outbreak situations it may be necessary to close a ward or care unit. This recommendation will be guided by a risk assessment carried out by the Infection Prevention Control.

Hand hygiene is the single and most important part of infection control. Hand washing before any contact with patients, after any activity that contaminates the hands and after removing protective clothing.

- Use of Personal Protective Equipment: gloves, aprons, eye protection, face masks etc.
 - Handle and dispose of sharp materials safely
 - Dispose the contaminated waste safely
 - Managing blood and body fluids including spillages and transport of specimens carefully
 - Maintain a clean and clinical environment
- Cholera, bubonic plague, smallpox, and influenza are some of the most brutal killers in human history. Outbreaks of these diseases across international borders, are properly defined as pandemic, especially smallpox, which throughout history, has killed between 300-500 million people in its 12,000 year existence. The most recent outbreak is of Corona Virus which is spreading to the whole world. It must be controlled by these measures otherwise it can spread drastically on our planet.

Turkey's TiKA ...

Continued from page 06

diseases. It is not really a lethal disease but most of cat owners gets affected from it. a capacity of 30 people to help farmers learn new agricultural methods.

Sardar Hasnain Bahadar Dreshak, the Provincial Minister for livestock and dairy development of Punjab, where Sargodha is located, thanked TiKA for its support to Punjab's Agency for Livestock Breeding and Dairy Development.

Gökhan Umut, TiKA's Islamabad coordinator, said the agency carried out 69 projects and activities in Pakistan last year and would continue implementing new projects this year on education, health, agriculture, water and sanitation.

Free medicines ...

Continued from page 06

and New Castle Disease (Rani Khait).

The program has been started in six different districts of the province including D.I.Khan, Tank, Swat, Buner, Shangla and Kohistan. The facilities of free injections and medicines would be provided to farmers associated with cattle raising business.

Project Director Dr Ahmed Kamal appealed to all farmers to cooperate with Livestock Department and get benefit from this unique opportunity.

China to assist ...

Continued from page 07

the agriculture department in Sindh and Balochistan, the locust attack has damaged crops cultivated on 80,000 hectares of land besides causing serious damage to grazing fields and forest areas.

The most time-critical action now is to effectively eliminate adult locust and hopper bands in already identified breeding zones in a bid to protect crops and livelihoods of at-risk poor farming households, according to an assessment report submitted to FAO. By doing so, the desert locust will be prevented from spreading to other areas where the ecological conditions are suitable for breeding. In the winter and spring breeding zone of Balochistan, the environment is conducive for locust multiplication because of the recent rains. The breeding zones are Gwadar, Uthal, Khuzdar, Nushki, Kharan, Panjgarh and Turbat divisions.

Similarly, the summer and monsoon breeding zones of locusts are Sukkur, Mirpurkhas divisions in Sindh and Rahim Yar Khan and Bahawalpur divisions in Punjab, where the locust swarms may start breeding following the monsoon rains in June-July.

Speakers shed light ...

Continued from page 07

cases the women need help of their males to sale their products in markets. Because these women do not know the exact prices in market and in many cases middlemen exploit them. He emphasized the need to implement Sindh water management ordinance, which proposes women involvement in water user bodies. He calls it policy gap, which shows that women should have responsibility in water user bodies, like area water board, watercourses associations etc. When water bill will be implemented definitely the women will be accommodated

in water associations, he said.

Mr. Masroor Shahwani of Sindh Irrigation and Drainage Authority (SIDA) suggested to have separate entity "integrated water resources department" to avoid dispute in irrigation water distribution mechanism because irrigation department presently seems incapable, to provide water for agriculture, industries, fisheries and other components. He also proposed to introduce water accounting mechanism at government level to see how much water is required to agriculture, industries, livestock and domestic purposes.

Dr. Abdul Majeed, Assistant Director Livestock sharing his observations, said despite women role in livestock management, they need training to know the importance of breeds for milk, meat or breeding purposes. This kind of awareness rising which can be helpful for the women farmers to increase milk yield and earn enough. Like this, they should be encouraged in poultry farming at courtyard level for income generation.

Livestock department itself is working for awareness rising among rural women so they may have nutritious food, in shape of egg, meat, milk and butter, he said.

Domesticated Donkeys ...

Continued from page 10

However, there is dire need to embark up on smart approach.

The Government of Sindh, even private sector, for examples, can tune in for reasonable sustainable programs for rearing and export of domesticated donkey for export purpose aimed at income earning. Two-way approach may be worked out.

(1) To develop donkey breeding and rearing zones, particularly in Tharparkar, Thana Bola Khan, Thana Ahmad Khan habitat all the way to Johi in district Jamshoro. These donkeys may directly be exported to China (2) They may be slaughtered here and their meat skin and other bi-products may be exported. This will help establish meat and hide processing units which will bring employment to local masses, as has done the fisheries sector. But this may require a regulatory body with a mechanism that must be in place first to address the issues and options associated with the novel business. Pakistan is not new in donkey export market. Earlier this year, the Ministry of Commerce had revealed that more than 141,000 donkey hides had been exported in a period of four years, spanning the years of 2011-2015.

In 2011, donkey hide exports stood at approximately 10,000 units, however, by 2015 the figure had gone up to more than 97,200 hides. Most of these exports were to China, Vietnam, and Hong Kong. By 2015, revenue from donkey hides had tripled to Rs135 million as compared to Rs44mn a year prior. This may be increased under regulations, failing to this illegal steeling, slaughtering and export of donkey meat and hides may bring donkey to the status of endangered mammal in Pakistan.

Pigeon and diseases ...

Continued from page 11

red-swollen and painful joints in legs and wings can also be seen. Infertility can also be seen in flock. Baby birds can die before the second week after hatching. Baby birds can also show the signs of laboured

breathing. Dying of young one in egg is another symptom of this disease.

• **Treatment:** Antibiotics treatment is based on sensitivity test but Enrofloxacin is commonly used. Treatment requires 3-8 days.

• **Prevention:** Regular cleaning and disinfecting the lofts, drinkers and feeders is important. Minimize the contact with rodents, wild birds and roaches. Vaccination should be done. Maintain acid pH below 4. Nolvasan disinfectant together with improver at one teaspoon per 4.5 liters of drinking water regularly will help to maintain acid environment in droppings.

Nutritional deficiency: It is a common problem in pigeon rearing. Vitamin B1 and B2 deficiency is mostly seen. Birds having nutritional deficiency show neck paralysis, birds can not eat and drink as a result they die. Feed full of nutrient should be recommended.

Monitoring Procedures in pigeon rearing: Particular attention must be paid to:

1. Ectoparasites and endoparasite that may be present in feces
2. Signs of salmonella spp
3. General body condition
4. Molting or feather disturbances

If disease is suspected in bird, then take a swab from cloaca or crop for cytology, Gram's stains and culture it. Necropsy of poor performer or disease suspected bird is necessary to monitor the disease status in the flock.

Vaccinations: Routine vaccination is important. Vaccination in pigeon may vary among countries.

After three weeks of age, Paramyxovirus vaccine should be given and thereafter once a year about three weeks before breeding. After five weeks of age, pox vaccine should be given and thereafter once a year about three weeks before exhibition/racing season. After five weeks of age, Salmonella vaccine should also be given and thereafter twice at two weeks interval and three weeks before breeding.

Effects of different ...

Continued from page 23

anti-inflammatory properties. It promotes tissue regeneration and angiogenesis (formation of new blood vessels). It enhances granulation and tissue repair. The use of ginger paste showed marked reduction in the healing duration of wound due to these properties.

Vinegar: Vinegar is derived from the old French vinaigre which means sour wine. Acetic acid bacteria are used for the fermentation of ethanol to produce vinegar. The basic ingredient of vinegar is acetic acid but it also contains salts, minerals, and vitamins. Vinegar stops any infection due its acidic nature and moreover it improves and fast the healing mechanism of wound.

Honey: Honey is produced by the honey bee *Apis mellifera*; Family: Apidae. It has been used by the humans for 5500 years ago. Honey bees collect nectar from different flowers and convert it into honey. Honey contains bee pollen enzymes and propolis which can stimulate new tissue growth. It also contains essential oils, flavonoids, terpenes, polyphenols. It is slightly acidic in nature with pH between 3.2-4.5 due to which it has anti-bacterial properties. The production of hydrogen peroxide in honey is responsible for tissue growth stimulation. Research have

shown that honey is very useful in treatment of diabetic and burn wounds.

Lemon juice: Lemon juice is very important ingredient of eastern and western food and drinks. Citric acid in lemon increases the digestibility of food. Main active ingredients of lemon juice are flavonoids, ascorbic acid and essential oils. Beside its importance for preventing certain life-threatening diseases like cardiovascular system diseases and cancers, it has important role in healing of wounds due to its antioxidant, bacteria riding and astringent properties. It also shortens the bleeding and clotting time due to presence of Ca & K ions as Ca ions have important role in converting prothrombin to thrombin.

Aloe vera: Aloe vera is a derivative from the cactus of Liliaceae family. It is component of several herbal medicinal products and it is used to treat topical skin ailments like burns. It is also used for frost bites and ulcers with good results. It contains more than 75 active ingredients and also substances like enzymes, glycoproteins, growth factors, vitamins and minerals. The ingredients in aloe vera are important for assisting wound healing at different stages.

Licorice: Licorice plants has been grown in eastern and western world. It has been used in ancient medicine for treatment of digestive and respiratory diseases. But recently, scientists are interested in wound healing effects of licorice. Studies has shown that use of licorice extract on wound promotes the production of mRNA and new proteins which involved in wound healing. It has cortisol like action in healing of wounds. It inhibits phospholipase A2 which has role in inflammation. So, it is anti-inflammatory in action. It contains flavonoids, iso-flavonoids, terpenoids, sterols, starch, sucrose, lignin, amino acids, amines etc. Glycyrrhizin is the most important in healing of wound as it increases interleukin-2. Other components of licorice have anti-bacterial activity. It also increases fibroblasts in proliferative phase of wound healing.

Black seed oil: "Hold on to use of the black seed. For it has a remedy for every illness except death," Holy prophet PBUH. The seed *Nigella sativa* are commonly used in flock medicine all over the world for treatment and prevention of a number of skin diseases and conditions. It contains fixed and essential oils, proteins, alkaloids, and saponins. Thymoquinone is a major component of essential oils that has cytoprotective and antioxidant actions. It has anti-inflammatory, analgesic, anti-microbial and anti-neoplastic properties. Purified proteins in black seeds have ability to enhance production of interleukin-3 by lymphocytes and have effects on macrophages as well. Thus, it has role in inhibiting the microbial growth in wounds. It accelerates the wound closure time and also enhances hair root growing.

Neem oil: It is well known as homeopathic medicine with wide spectrum of biological activity. It has therapeutic effect against inflammatory, diabetics, fungus, virus, bacteria, and malaria due to presence of Nimbidin, Nimbin, and Nimbidol. Moreover, presence of excellent amount of Amino acids, vitamins and minerals helps healing of wound in proliferative phase. Neem stops bacterial activity; it increases the formation of collagen fiber and so that the healing of wound is enhanced.



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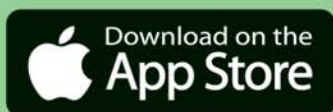
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Effects of different home remedies on wound healing

By **Muhammad Tahir Meraj, Farah Ijaz**
UVAS (Sub-Campus) Jhang

Skin is the outer covering of the animals with three main functions: protection, regulation, and sensation. Skin is the largest organ of body which is composed of multiple layers of ectodermal tissue. It protects the muscles, bones and internal organs beneath it. It is the first line of defense of body which protects the body against pathogens and excessive water loss. Other

functions of skin include insulation, temperature regulation, sensation, and the production of vitamin D. Skin is composed of two layers basically:

- i. The epidermis, which provides waterproofing and serves as a barrier to infection
- ii. The dermis, which serves as a location for the appendages of skin.

Wound is a type of injury which

occurs when skin's continuity is disrupted (an open wound), or when blunt force injury causes a contusion (a closed wound). Wound healing is a complex process in which the skin, and the tissues under it, repair themselves after injury. This process is divided into predictable phases: blood clotting (hemostasis), inflammation, proliferation (increase in fibroblast and collagen fiber content), and remodeling (maturation). The healing of wound is not only a complex process but

also a delicate mechanism which may face interruption and failure thus leading to non-healing chronic wounds. Diabetes, blood vessel diseases, infections, and metabolic deficiencies are the factors which contribute to the formation of non-healing chronic wounds. Wound care encourages and speeds wound healing via cleaning and protection from injury or infection. Many substances of botanical origin have been used in treatment of wounds from the ancient times. Scientists and researchers have been interested in knowing the role of many home available ingredients in healing of wounds since a few last decades. Some out of those commonly used ingredients are given below:

Turmeric: Turmeric is a very common home available ingredient found in our kitchens. It is used for flavoring and coloring of food previously but now a days it has been used as an herbal ingredient due to its important pharmaceutical properties. Turmeric is obtained from the rhizomes of *Curcuma longa*. It is used topically and orally for treatment of superficial and internal wounds respectively. It contains Diferneomethane that is commonly known as 'curcumin'.

This inhibits the pain and inflammation by inhibiting arachidonic acid cascade and cyclooxygenase (COX-2), a pro-inflammatory cytokine. It improves the migration of fibroblasts which are important in the tissue regeneration. It also has anti-bacterial properties.

Garlic: Garlic cloves are used in chopped and paste form for aromatizing and flavoring of foods. Recently, researches are made to use its paste in treatment of wounds due to its healing power. It contains 33 Sulphur compounds, 17 amino acids, several enzymes, minerals and vitamins (including Vitamin A, B1 and C). It is active against anti-biotic resistant bacteria. Its extract inhibits the growth of gram positive and gram-negative bacteria due to presence of Allicin which is produced by alliinase enzymes in garlic. Garlic reduces inflammation and improves healing of wounds due to its important composition.

Ginger: It is another important kitchen ingredient used in food. It is cultivated in the central Asia. Ginger contain gingerols as an active ingredient. 6-gingerol is the most important of all gingerols. Ginger possesses anti-oxidant and

Continued on Page 20

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پولٹری ایسوسی ایشن کے مطابق اب کورونا وائرس کی وجہ سے افغانستان، سعودی عرب، قطر، بحرین، یو اے ای اور بحرین میں برآمدت بند ہو گئی ہیں۔ صورتحال پر جلد قابو نہ پایا جاسکے گا تو پولٹری فارم بند ہو جائیں گے۔

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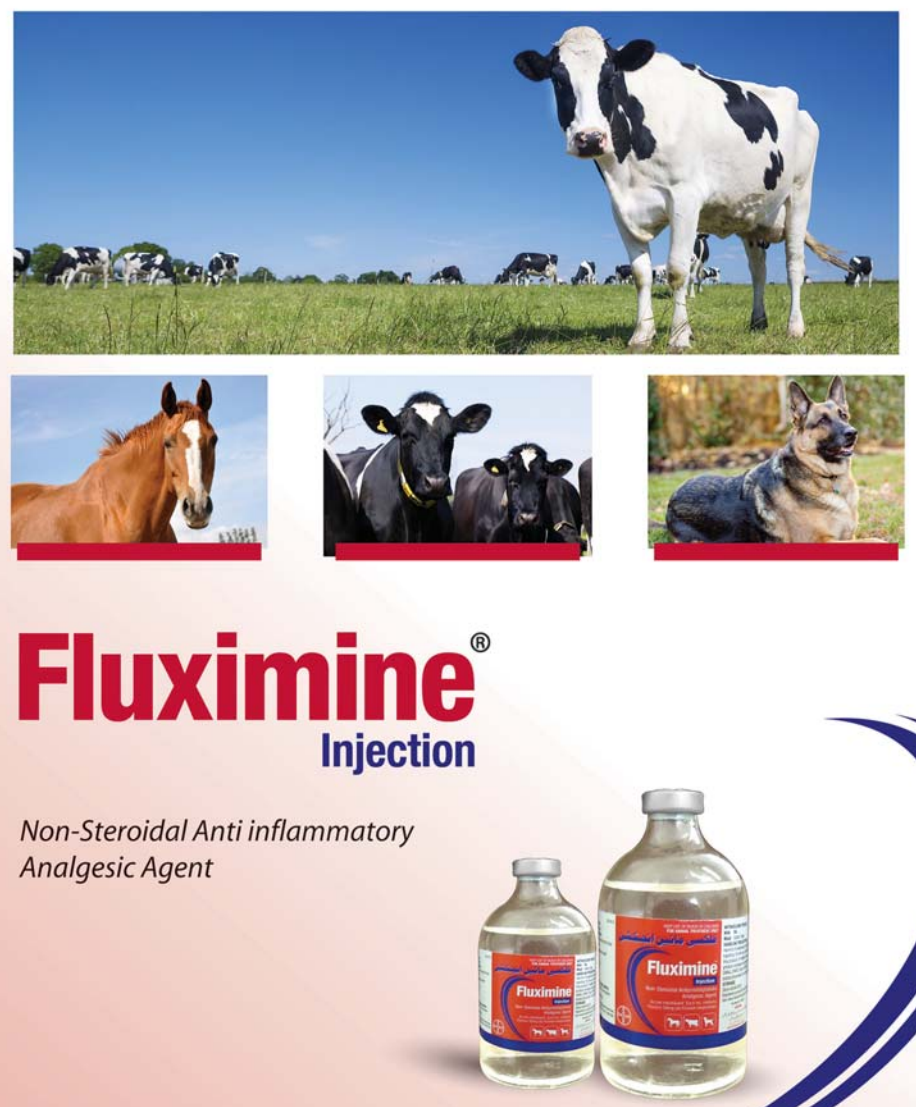
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لاک ڈاؤن سے غذائی اشیا کی ترسیل میں مشکلات

کراچی: سندھ میں لاک ڈاؤن کی وجہ سے اجناس اور پولٹری مصنوعات کی ترسیل میں رکاوٹیں حاصل ہونے لگیں۔ تاجروں نے حکومت سے مدد کی اپیل کر دی۔

اجناس کے تاجروں نے سندھ حکومت سے اجناس کی نقل و حرکت میں حائل رکاوٹوں کو دور کرنے کا مطالبہ کیا ہے۔ چیئرمین کراچی ہول سیل گروزر ایسوسی ایشن (کے ڈبلیو جی اے) ملک ذوالفقار علی کے مطابق کورونا وائرس کے باعث لاک ڈاؤن کے دوران اناج کی گاڑیوں کی پکڑ دھکڑ کا سلسلہ جاری ہے، اناج کی گاڑیوں کی پکڑ دھکڑ کے باعث کراچی میں گندم، دالوں، چاول کی قلت کا خدشہ ہے۔

پولیس اہلکار لاک ڈاؤن کی آڑ میں پنجاب سمیت اندروں سندھ سے آنے والی اناج کی گاڑیاں بلا وجہ روک رہے ہیں اگر یہ سلسلہ جاری رہا تو غذائی اشیاء اور خوراک کی قلت کا خدشہ ہوگا، اناج کی گاڑیاں بروقت مارکیٹ نہیں پہنچیں تو عوام کو دالوں، چاول سمیت دیگر غذائی اشیاء کی فراہمی ممکن نہیں ہو سکے گی، عوام کے بہتر ترین مفاد میں اناج کی گاڑیاں نہ روکنے کی ہدایت جاری کی جائے۔

اس ضمن میں پاکستان پولٹری ایسوسی ایشن (پی پی اے) کے عہدے دار خلیل ستار نے کہا ہے کہ سندھ بھر میں مرغی اور انڈوں کی سپلائی میں رکاوٹوں کا سامنا ہے کیونکہ قانون نافذ کرنے والے ادارے صوبے میں نقل و حرکت کی اجازت نہیں دے رہے نتیجے میں لوگوں کو ایشیا سے خور و نوش کی قلت کا سامنا کرنا پڑ سکتا ہے، ہم حکومت سندھ سے صوبے میں لاک ڈاؤن کے دوران تعاون کی درخواست کرتے ہیں تاکہ شہر میں آسانی سے پولٹری غذائی اشیاء فراہم کی جاسکیں۔