

# Infectious bronchitis breaks out in chickens

## AVN Report

**PESHAWAR** - The Khyber Pakhtunkhwa government's Backyard Poultry Farming project suffered a setback after the outbreak of infectious bronchitis in chickens distributed among farmers in Peshawar and other parts of the province. Veterinarians at the Civil Veterinary Hospital, Peshawar, have recently confirmed the endemic of infectious bronchitis, an acute, highly contagious upper respiratory tract disease in the Rhode Island Red chickens, which



were recently given away to farmers. They said the cases of infectious bronchitis were being reported to their hospital on a daily basis as recipients had confirmed death of their chickens. A recipient from Bahadar village on the outskirts of

Peshawar, who visited the hospital, complained that the disease had transmitted from the RIR units to other chickens as well. He said many RIR chickens were killed by the disease.

The Backyard Poultry Farming, one of the flagship projects of the PTI government, was launched in KP in October, last year.

Under the Rs170 million initiative, while around 41,000 units (each unit comprises five hens and one roaster) are to be given away to the low-

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## Locust Attack: Pakistan eyes to import insecticides from India

### AVN Report

**ISLAMABAD** - As trade with India has been under suspension for more than seven months, Pakistan would consider a one-time exemption for import of insecticides from India to fight ongoing locust attack on its agriculture.



This will be one of the key items on the agenda of the federal cabinet called to meet recently by the end of February this year to also deliberate on gas pricing and power bills to comply with requirements

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## '18TH INTERNATIONAL CONGRESS OF SOIL SCIENCE 2020'

# Experts address emerging issues about soil fertility

## AVN Report

**HYDERABAD** - The three - day 'International Congress of Soil Sciences 2020' was recently held. The event aimed to highlight the need for grappling with challenges in a situation where Pakistan is losing soil



fertility for want of policy and research. Soil scientists, researchers, academia and scholars spoke at the inaugural session of the ceremony. With the theme of 'Wise soil management ensures better environment and livelihood', the event has been organised jointly

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# Livestock and dairy sectors have potential to develop: Minister

## AVN Report

**HYDERABAD** - Keeping in view the importance of livestock and fisheries in meeting the food requirements, the Sindh government recently organised Sindh Livestock Expo 2020-SLE 2020 in the province recently. The SLE 2020 aimed to focus on corporate sector, technological solutions, growers/farmers, investors, diplomatic missions. The event was inaugurated by Minister of Sindh Assembly (MPA), Faryal Talpur. She was accompanied by Sindh Minister for Livestock Abdul Bari Pitafi. Sardar Hasnain Bahadur Drashak Livestock Minister Punjab also spoke to the occasion. The Council Generals of Thailand and Indonesia, Theatre Chochata and Totoka Pinamatsu, Syed Sardar Ali Shah, Minister for Culture, Tourism and Antiquities Department, Aijaz Ahmed Mahesar, Secretary, Livestock Department, Abbas Baloch, Commissioner Hyderabad, Dr. Nazeer Hussain Kalhoro, DG Sindh Institute of Animal Health, Dr. Jameel Ahmed, Director General Livestock, Zohair Naseer, M.D. Badar Expo Solutions also participated in the expo.

While speaking to the audience, MPA Sindh Assembly, Faryal Talpur said that SLE 2020 would help livestock industry grow while giving an opportunity to the traditional livestock owners to turn their livestock into market oriented farm animals. "Sindh government is committed and will take all measures to tap potential into creating employment for the people." Faryal further added that "This Expo would be extremely helpful for all those seeking knowledge about the livestock information management, livestock breeding, genetics and genomics, disease control and product development. Sindh had enough potential in livestock and dairy." Abdul Bari Pitafi informed that the Sindh government was devising a new policy proposing the development of Livestock sector in the province and this Expo would a big step towards it.

Abdul Bari highlighted that



Government of Sindh would promote Livestock sector not only for food security but also to improve value addition across the value chain.

"Following are the ready projects for investment in this sector: Modern Warehouses, Shrimp Farming along the coastal belt of Sindh and Cold Storage Facilities at Farm Level," he said.

Expo will bring the Government of Sindh and the investors on one platform for collaborative functioning that will produce exportable surplus by bringing in efficiency and technology in the entire value chain of these sectors.

Sindh Minister for Livestock said that besides livestock entrepreneurship and transfer of livestock technologies would also be promoted through this Expo. He said that arrangements for the entertainment of families especially kids had also been made as there would be bird show as well as dogs and cats shows.

"The main purpose of this Expo was to give an opportunity to the traditional livestock owners to turn their livestock into market oriented farm animals. He said that Sindh had enough potential in livestock and dairy," told Pitafi.

Minister Pitafi lauded the efforts of MPA Ms. Faryal Talpur and Sindh Govt for the support of Livestock Expo 2020. In the context of livestock, 27% buffaloes, 26% cattle, 25% sheep, 30% camels and 40% poultry population in Pakistan are found in Sindh. The potential of Halal Meat Exports and the ever-rising gap between the demand and production of meat and milk makes Sindh a very lucrative investment destination, he added.

Abdul Bari urged, "Pakistan's

livestock and dairy sector is the backbone of agrarian economy. There is a huge potential in the Livestock, Dairy sector in Sindh. Pakistan ranks as 5th largest milk producer of the world, with 40 billion liters produced annually out of which only a small fraction is processed."

Minister said that we assure our best dedicated efforts to make SLE-2020 a memorable and commendable success. Sardar Hasnain Bahadur Drashak appreciated the Sindh Livestock Expo on the occasion and said, "This expo is the largest expo of livestock in Pakistan and I was honored by Sindh Livestock Minister Abdul Bari Pitafi for holding this wonderful expo. I appreciate the Government of Sindh. The expo will promote the livestock industry in the country."

Meanwhile, Sindh Livestock Expo 2020 Rally was also held. The rally was led by Minister Livestock and Fisheries, Engr. Abdul Bari Pitafi. The rally consisted of fleet of 60 vehicles from Hyderabad to Karachi. The rally was welcomed by Sindh Information Minister Saeed Ghani. The event was attended by Syed Sardar Ali Shah, Minister for Culture, Tourism and Antiquities Department, Aijaz Ahmed Mahesar, Secretary, Livestock & Fisheries Department, Abbas Baloch, Commissioner Hyderabad, Dr. Nazeer Hussain Kalhoro, DG Sindh Institute of Animal Health, Dr. Jameel Ahmed Sheikh DG Livestock Hyderabad, Zohair Naseer, M.D. Badar Expo Solutions.

Abdul Bari Pitafi said on the occasion that under the vision and guidance of Chief Minister Sindh we are committed to support Sindh Livestock and Fisheries Department.

## Modern techniques in Livestock could meet requirement of the country: CM Sindh

### AVN Report

**HYDERABAD** - A closing ceremony of Sindh Livestock Expo 2020 was held. Sindh Chief Minister, Syed Murad Ali Shah was invited as the Chief Guest of the seminar. The seminar included media personnel and participants, arranged near



the Hatri bypass. The event was a joint collaboration of Sindh livestock and fisheries department with other ones. Cash prizes and certificates were awarded to the breeders and malakhirro, horse race, fireworks were held.

The SLE 2020 had a total of 25 lectures and presentations delivered in seminars during that two-day fair to disseminate awareness and modus operandi about new techniques.

While addressing the seminar, Syed Murad Ali Shah said that in the Pakistan, there were animals belonging to unique and top quality breeds which could be produced on modern techniques so that more and better milk, and meat could be procured to meet requirement of the country. He said that after visiting various stalls of the expo, he learnt about such top breeds of animals which could benefit the country and countrymen a lot.

Murad Ali told that the livestock fair would be organised every year and the budget would be allocated for 2020-21 in this regard so that Minister for Livestock Abdul Bari Pitafi could facilitate the event. He said the Sindh government was working to promote livestock and agriculture on priority because 60 per cent of the entire population of the country depended on those two sectors.

CM Sindh said that livestock, fisheries and agriculture were growth indicators as well. He said animals were brought to the expo and that credit went to the Sindh livestock department. A unique exhibition which was a major challenge, but the livestock minister accepted and fulfilled it. Animals were brought to the exhibition and people, especially dairy farmers and breeders, came from across the country, he said, adding that they had an excellent opportunity to learn from each other while He said the livestock must be focused for betterment of people who banked on 60 per cent livestock and 40 per cent agriculture in the country.

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# Farmers' worries rise over closing of Fertilizer manufacturing units

## AVN Report

**LAHORE** - Two fertilizer manufacturing units remained close recently despite improvement in the gas supply position and some hoarders are allegedly stocking the available urea in the market. This increased the fears of farmers as another crisis was brewing in the agriculture sector during the Rabi season.

Two urea producing units, Agritech and Fatima-DH have been closed since the supply of natural gas, the main ingredient for manufacturing the fertilizer, to them was cut off on last year. Their combined production capacity stands at 800,000 million tons per month. The National Fertilizer Development Centre (NFDC) reports suggested that despite under-application urea fertilizer demand remained 6.228 million tons in the calendar year 2019 and the same is likely to go up to 6.5 million tons in 2020 because of recent cut in the fertilizer price after withdrawal of Rs400 per bag



Gas Infrastructure Development Cess (GIDC) by the government. The total local urea production in 2019 was 6.171 million tons as the government had to import 100,000 million tons of the compost to bridge the gap between demand and supply. If the two units remain closed, the gap between demand and supply will widen creating a shortage of the manure and opening doors of its sale in the black market. Pakistan Kissan Ittehad (PKI) President Khalid Mahmood Khokhar said that the looming fertilizer crisis will hit the (politically) sensitive wheat crop already suffering in some pockets

of the province at the hands of locust and yellow rust. Saying there was still time "to address the unfolding of farming disaster", he calls for restoring gas supply to the shut units by importing the liquefied natural gas available in the international market at historically low prices of \$2.5 per MMBTU. Otherwise, he argues, the government should immediately import 0.5 million ton urea to meet local demand and avert the crisis. The PKI leader regrets in a statement here that the urea manufacturers are not transferring the benefit of the GIDC cut to the consumers contrary to the intentions of the governments.

# First H5N6 bird flu case in China reported

## AVN Report

**BEIJING** - China's agriculture ministry recently said the highly pathogenic H5N6 strain of avian flu had been found in a poultry farm in southwestern Sichuan province.



This is the first H5N6 avian flu detected from a poultry farm after four cases found in swans this year. The ministry said 1,840 birds had died in the farm of 2,497. The rest have been culled.

# Govt has made efforts to advance Livestock Sector: Minister

## AVN Report

**SIALKOT** - Provincial Minister for Livestock Punjab Husnain Buhadar Daraishak has recently said that the Punjab government was making hectic efforts to develop livestock sector on modern lines. He stated this while addressing a meeting of exporters held at Sialkot Chamber of Commerce and Industry (SCCI). Husnain said that development was being made by bringing improvement in health management, bread, fodder, feed and farm houses across the Punjab. Provincial Minister said that these sectors were badly ignored by the past governments, which remained mostly failed in evolving the effective policy for the development of the livestock sector.

Daraishak said that the development of the livestock and dairy development sectors was the priority of the government. The minister said that government was evolving effective and continuous policies which would bring betterment to the farmers. Buhadar asked the Sialkot exporters to focus on the exports of the dairy products, saying that the encouragement and promotion of the exports of the dairy products could help earn precious foreign exchange to a great extent. Provincial Minister also visited the Collection and Delivery Center of the Punjab food Department at Noorabad. Husnain was told that the center was providing as many as 750 liters fresh milk to 320 consumers while going door-to-door in the city. Provincial Minister said that Livestock Department was the only department that had graduates from Agriculture University, Faisalabad and Veterinary Sciences.



## CONDOLENCE

The Publisher, Editor and the staff of Agro Veterinary News Pakistan express their heartfelt condolences on sad demise of Dr A. A. Quraishy, Pioneer of Nature and Animal Conservation in Pakistan and pray that God give his soul an eternal peace and enough courage to the family members to bear this irreplaceable loss, Amen!



# Poultry Scheme is a 'Revolutionary Step' for Poor: CM's Aide

## AVN Report

**PESHAWAR** - Special Assistant to Khyber Pakhtunkhwa Chief Minister on local government, Kamran Bangash recently said that poultry scheme introduced by Prime Minister Imran Khan was a revolutionary step for low level entrepreneurs which would help reduce poverty level. He expressed these views after distributing hens among more than 25 households in a ceremony at office of KP Livestock and Dairy Development. "I can say with full confidence that if the people would accept poultry scheme, Pakistan would soon be self-sufficient in poultry products", he said. Kamran Bangash said that Poultry Scheme has been implementing across the province without any discrimination and favors to reduce the poverty ratio. He said that Pakistan Tehreek-e-Insaf (PTI) government has taken several important steps to restore the economy and provide employment opportunities in the country, which results would be known to public in next few years. He appealed to the people to take real advantage of poultry scheme and strengthening economy of the country adding it would prepare country to meet challenges. Later, CM's Aide also visited Livestock Hospital where Dr Masoom gave briefing on various sections of the hospital. Kamran Bangash said that the slaughterhouse should be upgraded on a modern basis so that the public does not face any problem in any regard.





# 'Rs 100 million allocated to Camel Research and Milk Processing Units'

AVN Report

**ISLAMABAD** - Livestock and Dairy Development Director General (DG) Dr Ghulam Hussain Jaffar recently told that Balochistan government will establish Camel Research and Milk Processing Units at Musakhail and Washuk districts with an estimated cost of Rs 100 million. The aim



behind the project is to increase camel farming and milk production in the province. Balochistan has huge potential of camel farming as the province was contributing 42 percent of the country's total production. Hussain said there were around 700,000 camels in the Kharan, Washuk, Lasbela, Duki, Musakhail, Zhob, Sherani districts of the province.

In this regard, the provincial government would also enhance cooperation with private sector to boost camel farming and milk production, he said and added that it would offer a wide range of opportunities and prospects to local as well as the international investors to invest in the camel farming in the province.

Expressing best wishes for the livestock sector, Dr Ghulam said the province has the potential to export camels to gulf countries to earn precious foreign exchange. Strict measures have been taken at borders to eliminate smuggling of livestock to neighboring countries, he maintained.

The businessmen were being encouraged to promote livestock farming in the province. Hussain said lack of proper marketing of livestock was the main issue and for this purpose the government has planned to build a hide and meat market to help improve standard of marketing of this huge sector. No doubt, the livestock development is linked with poverty alleviation as 70 percent population of the province is directly or indirectly linked with livestock rearing activities. During winter, the farmers living in central Balochistan migrate with their flocks to lower lands in Sibi and Kachhi plains for the purpose of grazing their flocks.

The Balochistan government has chalked out a comprehensive plan to upgrade Dairy and Livestock sectors to exploit full potential and generate economic activities across the province, he added.

He said the government had also planned to establish new veterinary hospitals and dispensaries for which an amount of Rs 500 million would be incurred to ensure livestock's better health and productivity.

In order to generate more revenue, the government would also set up a cattle farm at Lehri district, the DG said.

# 'CPEC offers great opportunity for Pakistan's food security needs'

AVN Report

**ISLAMABAD** - A policy dialogue on 'National Agriculture and Food Security in Pakistan' was recently held at the Institute of Policy Studies (IPS) in collaboration with the Pakistan Agriculture Scientists Forum (PAS-Forum).

opinion, can only be done through value addition - converting raw materials into standard commercial products and brands. He highlighted that a combination of different commodities and products being manufactured along the CPEC routes have

edge over the rest of the world, especially when it comes to China. The professor noted that unbeknownst to most, "China is the world's largest import of farm produce, and China alone accounts for around 10 per cent of the world's total farm produce trade."



Presenting an overview of Pakistan's agriculture sector, Pakistan Agricultural Research Council (PARC) Chairman Dr Azeem Khan emphasised the need for better productivity in various potential agriculture sub-sectors. He said that the aim of this should not only be to address the country's food security concerns, but also to elevate it to meet standards for international trade.

Dr Azeem lamented that Pakistan used to be a net food exporter until 2013 when it started to become a net food importer.

The second phase of the China-Pakistan Economic Corridor (CPEC) offers a good opportunity to help the agriculture sector recover, "but the onus largely lies with the government to set targets and strategies carefully to benefit from upcoming opportunities," Azeem further added.

The PARC chairman called for alleviating the agriculture sector through a business-oriented model, which, in his

significant potential. Dr Khan, however, pointed out that post-harvest losses remain a concern in the country, before adding that the solution lies in careful measures taken in the areas of production, diversification, post-harvest handling, processing, certification, and value addition - all aimed at converting the harvest into high-value products while enabling them to maintain standards for international trade.

Dr Azeem also spoke fervently about the prevalent state of malnutrition in Pakistan, terming it unprecedentedly high while maintaining that making Pakistan nutritionally food secure should be the government's top-most goal. University of Agriculture Faisalabad, Professor Dr Amanullah Malik also spoke about potential and opportunities for Pakistan's agricultural sector with regards to CPEC and its mega projects. He noted that there several agriculture items where Pakistan has an

"China is a net importer of bulk agriculture products and there has been rapid growth in its imports from BRI- Belt and Road Initiative countries recently," he said.

In this regard, he said that Pakistan can find a voracious client in China for crops such as soybean, barley, corn, wheat and cereals. Rice is the country's major export to China but there is potential to export several other agricultural products as well, Dr Amanullah said.

In the field of fruit, Malik said "Pakistan looks to export its cherries, grapes, mangos, guavas and oranges."

He pointed out that despite the hostilities and trade disputes between Beijing and China, around 70% of China's agriculture imports still come from the US, and handful of other countries in South America, South East Asia, the European Union and Australia.

Dr Malik warned that breaking these long-established and standardized supply routes will be very

**Continued on Page 15**

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There is a misconception that malaria only exists in humans, and mosquitoes are only vector of plasmodium. But in reality, malaria affects animals as well as human beings. There are over 200 species of malaria. Birds, bats, lizards and antelopes are hosts for malaria parasites. According to the recent reports, Hawaiian birds have become sick and on the verge of extinction due to malaria. Mosquitoes are the most nuisance creatures of the nature that causes the transmission of mosquito-borne diseases such as Malaria, Filariasis, Dengue fever, Yellow fever, and Japanese encephalitis. *Anopheles stephensi*, *Culex quinquefasciatus*, *Aedes albopictus* and *Culex vishnui* group (James, 1992; Gubler, 1998). The biting of mosquitoes also causes the skin allergy, the biting area becomes inflated and irritation persists (Peng et al., 1999). *Culex quinquefasciatus* is a vector of lymphatic filariasis. In tropical countries the lymphatic filariasis is widely distributed infecting 120 million people worldwide and common chronic manifestation occur in about 44 million people (Ottesen et al., 1997). Mosquitoes can transmit more diseases than any other group of arthropods and affect millions of people throughout the world. WHO-World Health Organization has declared the mosquitoes as "public enemy number one". Mosquito borne diseases are prevalent in more than 100 countries across the world, infecting over 700,000,000 people every year globally and 40,000,000 of the Indian population. They act as a vector for most of the life-threatening diseases like malaria, yellow fever, dengue fever, filariasis, encephalitis, West Nile virus infection, etc., in almost all tropical and subtropical countries and many other parts of the world. According to the latest estimates, released in December 2014, there were about 198 million cases of malaria in 2013 (with an uncertainty range of 124 million to 283 million) and an estimated 584 000 deaths (with an uncertainty range of 367 000 to 755 000). Most deaths occur among children living in Africa where a child dies every minute from malaria. Malaria mortality rates among children in Africa have been reduced by an estimated 58% since 2000 (WHO, 2014). Malaria is caused by *Plasmodium* parasites. The parasites are spread to people through the bites of infected *Anopheles* mosquitoes, called "malaria vectors", which bite mainly between dusk and dawn. There are four parasite species that cause malaria in humans:


- *Plasmodium falciparum*
- *Plasmodium vivax*
- *Plasmodium malariae*
- *Plasmodium ovale*.

*Plasmodium falciparum* and *Plasmodium vivax* are the most common among above. *Plasmodium falciparum* is the deadliest. In recent years, some human cases of malaria have also occurred with *Plasmodium knowlesi* - a species that causes malaria among monkeys and occurs in certain forested areas of South-East Asia. Malaria is transmitted exclusively through the bites of *Anopheles* mosquitoes. The intensity of transmission depends on factors related to the parasite, the vector, the human host, and the environment. About 20 different *Anopheles* species are important around the world. All the important vector species bite at night. *Anopheles* mosquitoes breed in water and each species has its own breeding preference; for example, some prefer shallow collections of fresh water,


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**Prof Dr Abdullah G Arij**  
Chairman  
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**Avian Malaria: Major factor in the native bird decline**



such as puddles, rice fields, and hoof prints. Transmission is more intense in places where the mosquito lifespan is longer (so that the parasite has time to complete its development inside the mosquito) and where it prefers to bite humans rather than other animals. For example, the long lifespan and strong human-biting habit of the African vector species is the main reason why about 90% of the world's malaria deaths are in Africa. Climatic conditions also affect the number and survival of mosquitoes, such as rainfall patterns, temperature and humidity. In many places, transmission is seasonal, with the peak during and just after the rainy season. Over and inadvisable application of synthetic insecticides in mosquito control, resulted into environmental hazards through persistence and accumulation of non-biodegradable chemicals in ecosystem, biological magnification through the food chains, development of insecticide resistance among vector species and toxic effect in human health and non- target organisms. These developments demand that a renewed effort be made to register alternative insecticidal

agents with high bio control potentiality but causes little or no harmful effect to environment and human health. One possible strategy is the rational localization of bioactive products from phytochemicals by systematically exploring the global floral biodiversity. There is an ever-increasing demand for plant-based insecticides as they are non-toxic, easily available at affordable prices, biodegradable and show broad-spectrum target-specific activities against different species of vector mosquitoes. Furthermore, unlike conventional commercial insecticides that are based on single active ingredient, plant-derived insecticides comprise botanical blends of secondary metabolites which act concertedly on both behavioral and physiological processes. Thus, the chances of pests developing resistance to such substances are miserable. The plant based herbal insecticides are found to more efficient, safe and best substitute for chemical insecticides (Ghosh et al., 2012; Chowdhury et al., 2008; Rawani et al., 2009; Rawani et al., 2010; Banerjee et al., 2011). Natural products of plant origin are safe to use than the synthetic insecticides (Kishore et al., 2011). Therefore, biological and eco-friendly natural resources are broad search area for the control of vector of medical importance (Chowdhury et al., 2009, Singha et al., 2012). To prevent proliferation of mosquito borne diseases and to improve quality of environment and public health, mosquito control is essential. The major tool in mosquito control operation is the application of synthetic insecticides such as organochlorine and organophosphate compounds. But this has not been very successful due to human, technical, operational, ecological, and economic factors. In recent years, use of many of the former synthetic insecticides in mosquito control program has been limited. It is due to lack of novel insecticides, high cost of synthetic insecticides, concern for environmental sustainability, harmful effect on human health, and other non-target populations, their non-biodegradable nature, higher rate of biological magnification through ecosystem, and increasing insecticide resistance on a global scale. Thus, the Environmental Protection Act in 1969 has framed a number of rules and regulations to check the application of chemical control agents in nature. It has prompted researchers to look for alternative approaches ranging from provision of or promoting the adoption of effective and transparent mosquito management strategies that focus on public education, monitoring and surveillance, source reduction and environment friendly least-toxic larval control. These factors have resulted in an urge to look for environment friendly, cost-effective, biodegradable and target specific insecticides against mosquito species. Considering these, the application of eco-friendly alternatives such as biological control of vectors has become the central focus of the control program in lieu of the chemical insecticides. One of the most effective alternative approaches under the biological control program is to explore the floral biodiversity and enter the field of using safer insecticides of botanical origin as a simple and sustainable method of mosquito control. Further, unlike conventional insecticides which are based on a single active ingredient, plant derived insecticides comprise botanical blends of chemical compounds which act concertedly on both behavioral and physiological processes. Thus, there is very little chance of pests developing resistance to such substances.

**Continued on Page 15**



# Role of meat in human health

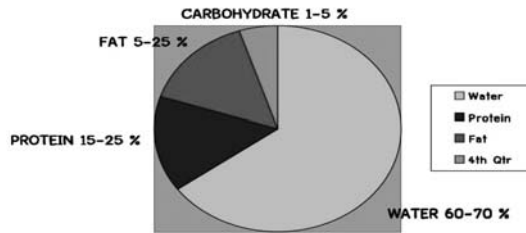
By Ghulam Asghar Solangi

Shaheed Benazir Bhutto University of Veterinary and Animal Science, Sakrand

Meat is the most important constituent of human diet. This nutritious and palatable food provides protein of high biological value, minerals, fatty acids and wide range of essential vitamins to the human body. People who choose to eat meat often cite three reasons. The first cited reason for consuming meat is that it tastes good and has a desirable flavor. Secondly, meat consumption is often associated with social status or is enjoyed during times of celebration or special occasions. Finally, meat is consumed because it has desirable nutritional benefits and supports human health.

Pakistani people consume beef, mutton, poultry meat and some sea food, following the halal guidelines. For the last few years, annual growth of meat production showed elevated trend .The meat production has raised to 3.873 million tons in 2016 compared to 3.696 and 3.531 in 2015 and 2014 respectively .Among exports in Pakistan, red meat annually growing by 30%.Currently per capita meat consumption in Pakistan reached to 32Kg that is further expected to reach 47Kg by 2020.

## Composition of meat



## Nutritional value of meat

The energy provided by meat is variable. Meat from all sources contributes to 17% energy intake and red meat contributes 12% of total energy intake. It provides high

Nutritional composition of meat [4, 6].

| Essential amino acids |           |      |      |      |
|-----------------------|-----------|------|------|------|
| Amino acids           | Category  | Beef | Lamb | Pork |
| Lysine                | Essential | 8.2  | 7.5  | 7.9  |
| Leucine               | Essential | 8.5  | 7.2  | 7.6  |
| Isoleucine            | Essential | 5.0  | 4.7  | 4.8  |
| Cystine               | Essential | 1.5  | 1.5  | 1.2  |
| Threonine             | Essential | 4.2  | 4.8  | 5.2  |
| Methionine            | Essential | 2.2  | 2.4  | 2.6  |
| Tryptophan            | Essential | 1.3  | 1.2  | 1.5  |
| Phenylalanine         | Essential | 4.4  | 3.8  | 4.3  |
| Arginine              | Essential | 6.4  | 6.8  | 6.6  |
| Histidine             | Essential | 2.8  | 2.9  | 3.1  |
| Valine                | Essential | 5.6  | 5.1  | 5.2  |

biological values of protein with less carbohydrate and variable of fats

## Protein in meat

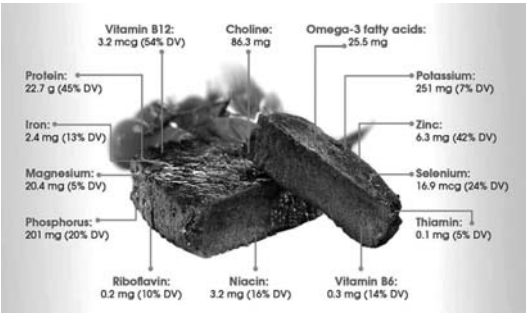
Protein is primarily important for growth, maintenance and repair of the body and also provides energy of 17kj per gram. Lean red meat contains a high proportion of protein. Amino acids

The building blocks of protein are of long chains of amino acids. There are about 20 different amino acids commonly found in

plants and animal proteins. For adults, 8 of these, have to be provided in the diet and are therefore defined as 'essential' or 'indispensable' amino acids. These are; Leucine, Isolucine, Valine, Threonine, Methionine and Phenylalanine. In children, Arginine, Histidine, Cysteine, Glycine, Tyrocine, Glutamine and Proline are also considered to be essential amino acids, because children are unable to make enough meet their needs. These are referred to as 'conditionally' essential amino acids. There are also certain disease states during adult life when a particular amino acid becomes conditionally essential. Protein from animal meat contains the full range of essential amino acids.

## Vitamins

Meat products contains traces of several different vitamins. This includes vitamin E



and vitamin B1, B2, B3, B6 and B12. Vitamin E serves as an antioxidant, help to stop free radicals from damaging your cell. All B vitamins work together to convert the food you eat into energy. Vitamin B1 helps promote healthy muscle, nerves and a healthy heart. Body uses vitamin B2 to manufacture red blood cells and vitamin B6 to manufacture protein. Vitamin B3 helps promote good digestion. Vitamin B6 keeps nervous and circulation system healthy and it functions in both protein synthesis and protein metabolism. This vitamin also assists in the absorption of vitamin B12, another vitamin essential for circulatory and nerves health, as well as energy production. Meat is an especially important source of vitamin B12 because unlike other B vitamins, B12 is not found in any plant based food. Another big benefit of eating meat is the maintenance of your healthy skin.

## Fats, including unhealthy fat

Although we need a limited supply of fats in our diet for good health, the saturated fats found in the meat can be detrimental to the wellbeing. Consuming high levels of saturated fats can increase the risk of atherosclerosis, a condition in which plaque deposits form on the walls of arteries and can leads to heart disease. High fat intake can lead to an increased risk of obesity and diabetes.

## Unsaturated fat content

Some meat products contain high amounts of healthy unsaturated fats like omega 3 fatty acids. Omega 3 fatty acids are polyunsaturated fats that have a positive impact on your cardiovascular health. Adding

omega 3 fatty acids to the diet can help lower the LDL cholesterol levels, blood pressure levels and triglyceride levels. This may decrease risk of developing cardiovascular disease or an arrhythmia. According to the American Heart Association, fish species like salmon, herring and trout have the highest levels of omega 3 fatty acids.

## Minerals, Including Iron

In addition to significant proteins, meat provides a wide variety of minerals to support the optimal functioning of cells and tissues. For instance, it is an important source of both iron and zinc, iron helps carry oxygen to throughout tissues, while zinc is required for a strong immune system, wound healing and enzyme activity within your cell. The phosphorus content of meat helps bones strong. The sulfur it contains can be incorporated into new amino acids and the chromium found in meat assist in metabolizing dietary sugar. Selenium prevents cancer, poisonous effects of heavy metals and helps the body after vaccination. Potassium help in metabolism, nerve impulses transmission, growth, muscle building and maintaining of acid base balance in the human body. Sodium regulates water content of the body, aids in transport of CO2 and maintains osmotic pressure of body fluid.

## Disease prevention

Meat is a top notch source of zinc. This mineral helps the immune system function properly and necessary for some biochemical reactions. Vitamin B12, another nutrient found in beef helps prevent heart disease and may play a role in lowering the risk of breast cancer, Alzheimer's disease and depression.

## Energy

Meat is one of the best sources of iron. Iron boosts energy because it makes red blood cells, which carry oxygen from lungs to other parts of the body, including the brain. Red meat contains heme iron which is the form of iron most easily absorbed by the body, but pork lamb and chicken are also good sources of iron as are organ meat.

## Strong muscles

Meat is an excellent source of complete protein, containing all the amino acids your body needs to develop and maintain muscles. Vegetarian foods do not contain complete proteins so they are not as good at building and maintaining strong muscle. It is also known to have weight loss property.

## Summary

Meat and meat products have a significant role in fulfillment and maintenance of human health. The food material must be included as important proportion in balanced diet to meet required health benefits. Thus intake of meat in balance proportion must be according to the prescription of nutritionist and health practitioners. Additionally, vitamins and minerals are considered as important constituents of meat, respectively, that are beneficial for overall human health stratum.



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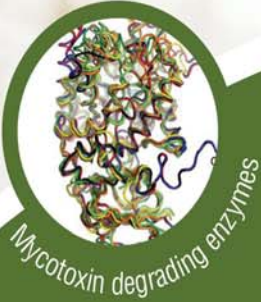


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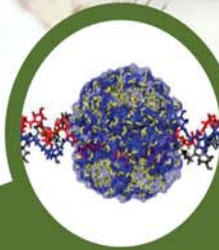
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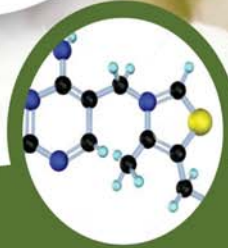
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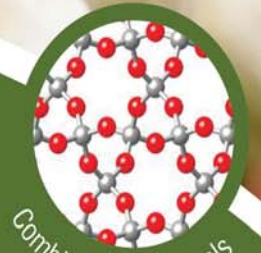
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# Food Value Chain: The new 'Beacon of Hope' for young entrepreneurs

By Prof M Subhan Qureshi

President

Dairy Science Park, Peshawar

**T**he province of Khyber Pakhtunkhwa (KPK), although rich in natural resources, but still face issues in many departments. These include unemployment, terrorism and lack of access to quality foods.

The new 'Action Plan' to resolve this is formed which can be reflected in the Dairy Science Park's Good Governance Model for livestock techno parks. This was founded on the six SDGs (Sustainable Development Goals); initiated through on-campus development of entrepreneurship models. It is supported by extension and research wings and industry/civil society for building the entrepreneurship network; leading to Halal food export.

For many people, Mr Kamran Khan, an animal husbandry graduate, may be presented as a successful entrepreneur. He adopted his professional knowledge as a source of livelihood for his family. He is a source of relief for the farming community, a Beacon of Hope for the young generation and a sign of relief for the quality conscious food consumers in the city.

Presently the livestock and poultry farmers face difficulty in connecting with service providers, especially the fair marketing dealers. Health issues are usually chronic and the low quality of medicine, under-dosing of antibiotics, therapeutic approach of the veterinary practitioner instead of preventive, poor housing/ventilation and lack of hygienic practices affect the farm profit, adversely. The dairy, fattening, poultry and fish farmers are usually afraid of animal health issues. Very few veterinary practitioners find popularity among the farmers' community, based on their performance and contribution in combating animal health issues and raising farm profitability and sustainability. The farmers usually consult veterinary practitioners in case of severe disease outbreaks and mortality of animals. This is called fire brigade treatment and is a source of income for the veterinary practitioners and input suppliers. The farmers fail to realize the hidden losses at their farms due to under and overfeeding, toxic feeds, parasitic infections, infertility and other issues of economic importance.

The proposed Livestock Technopark Peshawar will engage and train the DVM (Doctor of Veterinary Medicine) unemployed graduates as well as in service veterinarians to visit the registered farmers on monthly basis for observing the animals' health and productivity cases with special emphasis on the hidden losses due to bad hygiene, parasitic infestation or toxic feeds. The veterinary practitioner will act as animal healers,

public health protectors as well as economy boosters. All the three aspects would help the farmers to get maximum benefits out of minimum investment, producing milk, meat and eggs with the qualities of accepted standards, through our registered labs.

Engineering, medical, business and other graduates in natural and social sciences would be motivated to establish services in their respective areas. LDD (Livestock & Dairy Development) Department would be engaged in developing special training modules for entrepreneurship development. They will host the Policy Implementation Cell

and collaborate with LTP and its regional bodies. The hospitals would be utilized for shifting their therapeutic approach in disease control towards preventive and business advisory one. The outdoor cases would be encouraged and institutional based practice would be allowed on the analogy of medical doctors provided under Khyber Pakhtunkhwa Medical Teaching Institutions Reforms Act, 2015. The veterinary doctor would utilize his skills as animal healer, public health protector and economy booster. The Policy Implementation Cell would help in farming innovation and commercialization, providing an enabling environment for entrepreneurship development. New breeding innovations would be developed and introduced for enhancing growth rate, fertility and fecundity of animals.

LDD Res would work on applied research to control diseases, vaccine improvement and commercial production and advanced research in collaboration with the universities. They would help in Biorisk management research and development in collaboration with Khyber Medical University and University of Agriculture Peshawar (UAP). They will host Livestock Technopark Peshawar and LBSCs (Livestock Business Support Centers) at Peshawar Kohat and Abbottabad and collaborate with LBSCs at other locations. Directorate General would appoint a Focal Point Livestock Technopark Peshawar to support improvement in livestock markets and slaughter houses and in implementation of the joint ventures with Munir and Co Slaughter House, Ring Road Peshawar. Directorate General Fisheries would host LBSC Fisheries and would implement the fisheries components of the functions of Livestock Technopark Peshawar.

UAP would utilize the human resource

base available in the form of highly qualified faculty members and enthusiastic postgraduate students for responding to the emerging industrial issues and developing entrepreneurship models. The



**Mr Kamran Khan, Livestock Entrepreneur, with a continuous history of struggle at various fronts, is Beacon of Hope**

Livestock Business Support Center at UAP would be utilized extensively through international linkages, especially under a Memorandum of Understanding (MoU) with the Konya Technopark, Turkey and other organizations developed under Dairy Science Park.

The university would contribute as follows: i) Swat University would host the LBSC

Swat; ii) AWKUM will host LBSC Mardan; iii) WUM will host Dairy and Meat Technology Center; iv) Gomal University will host Gomal Technopark; v) Khyber Medical University will host BRM Center; vi) University of Agriculture Peshawar will host LBSC UAP and; vii) SBBU (Shaheed Benazir Bhutto University) Sheringal will host meat technology center.

Livestock and poultry farmers are provided feeds, semen, medicine and other farm inputs by commercial companies. Most of the times these inputs are not quality tested, nor cost-effective. The feed companies supply feeds and their salesmen convince the illiterate farmers to feed the animals more and more. And as mentioned already in this document, this leads to excess intake of proteins, leading to ammonia and urea toxicity and losses in milk productivity, fertility and profitability of the farms.

The Board will test the farm inputs in various partner laboratories and the per unit productivity cost would be determined. Cost effective farm inputs would be made available at the Livestock Business Support Centers and other associated facilities. Feeds would be tested for nutrients availability and toxins presence through laboratory analysis and through growth, fertility and productivity trials. Semen would be tested for fertility and genetic potential through field trials at registered and experimental farms, engaging postgraduate students.

Marketing linkages are most of the times hostile to the farmers, be it livestock or poultry farmers. Animals are purchased from contractors or feed/milk dealers on loans to be paid in installments. The mark up rate usually goes beyond 100% per annum. And the lenders sometime take back animals or even families of the farmers, if he is unable to pay back the

installments. Weekly cattle markets are held at various popular locations of public gatherings. The LTP would devise a marketing mechanism for keeping dry animals at remote areas with little running cost, as salvage farming and newly pregnant animals would be kept at such stations for supply back to the peri urban dairy farms.

Peshawar Meat was established as an entrepreneurship model for providing Hygienic and Halal tested beef and mutton to Peshawar. It could not survive due to price capping form meat by government, lack of animals supplies to the factory and lack of sale points. The specially prepared beef through rearing calves, has to compete with culled old buffaloes at the end of lactation, or diseased and injured animals. The production cost of such animals is far lower while the production of prime beef would cost at least double this amount. However, the prices of beef and mutton are fixed at flat rates, irrespective of qualitative grading. Such a practice discourages growth and survival of young entrepreneurs, struggling for finding a graceful living in the society, while the shops with unhygienic and low quality products goes on working in an uninterrupted manner.

Establishing a network of entrepreneurship would solve the issue. A farming entrepreneur would be producing cost effective quality products to the factories, he will get inputs from the quality tested, registered suppliers, registered vets, analytical labs and other service providers; and he will supply his products to the registered factories and products marketing dealers. There would be a win-win situation for everyone. New graduates would find it easy to enter the chain at any point of the entrepreneurship network. Buffaloes are brought to major cities of the province from Punjab and sent to slaughter house after getting milk for few months. It drains the genetic potential of buffaloes towards trash and puts financial burden on local farmers, purchasing a fresh buffalo on higher rates.

Establishment of salvage farms for rearing and caring of dry animal in remote areas of the province would prevent the animals from slaughtering and maintain the genetic pool of best breeds of livestock population. Establishment of model dairy farms for the purpose of extension, research and business demonstration at regional level under partnership with the private sector, would popularize the innovative farming models in the province, for further replication. Establishment of modern slaughter houses with advance facilities through joint venture will ensure the production of quality meat to the consumers and to be used for research purposes targeted at meat industry expansion and provision of Halal Meat to the entire Muslim community.



Infectious bronchitis ...

Continued from front page

income families by the end of 2020. Around one million chickens will be delivered to eligible families at subsidised rates in the province during the next four years. Each unit is being sold for Rs1,050. The total cost of one unit is around Rs3,000. The project was launched in Peshawar with great pump and show during a special ceremony, which was attended by Chief Minister Mahmood Khan, federal ministers. The programme was meant to address poverty and promote selfemployment through the agricultural initiative. The UN Food and Agriculture Organisation had also initiated the backyard poultry farming project in several merged tribal districts of the province last year and distributed thousands of chickens among the local communities. Officials told Dawn that the project was launched in Peshawar district few days ago, while around 300 units of the Rhode Island Red, an American breed of domestic chicken, had so far been distributed among farmers. A source in the directorate of general of livestock and dairy development confirmed that the disease had killed RIRs in large numbers during the quarantine period and after distribution. He said the contractor had brought in around 30,000 RIR units for isolation. "Majority of the chicken died during the isolation period," he said, adding that the contractor procured more chickens, which were distributed without being kept in quarantine. Project coordinator Dr Aftab Ahmad denied reports about the epidemic and blamed farmers for the loss of imported chickens. He said the farmers lacked know how about poultry farming and in some areas, the people had slaughtered chickens. "Some people took these chickens with the intention to slaughter them. The people kept chickens in cages in which we had given them and didn't release them from the cages besides keeping them without feeding," he said.

He denied that the contactors had supplied sick chickens. "Flu in RIR and other chickens is a common disease and there is no epidemic," he said, adding that chickens had also died due to poor feeding. The project coordinator said the chickens were distributed in Peshawar, Swabi, Mardan, Charsadda, Karak and other districts and there was no serious complaint about them. He claimed that the project had received an overwhelming response from the local communities but some officials were also propagating against it and the department. "Healthy birds were distributed to farmers," he said, adding that mismanagement and mishandling might cause death to chicken.

Locust Attack: Pakistan ... Continued from front page

of the International Monetary Fund (IMF) for disbursement of next tranche of \$450 million. The meeting to be presided over by Prime Minister Imran Khan would have a comprehensive presentation for engagement of party parliamentarians in the Ehsaas programme by the special adviser to the PM on social protection and poverty alleviation. Pakistan had downgraded its trade relations with India on August last year to the level of Israel no trade at all in reaction to India's decision to revoke Article 370 of its constitution that granted occupied Kashmir a special status. The decision was taken by the federal cabinet following a proposal approved by the National Security Committee the same day. The adviser to the prime minister on finance & revenue would also give a detailed presentation on regulatory duties and taxes on pulses in view of rising prices of essential food items. The cabinet would also consider a summary of the interprovincial coordination (IPC) division for establishment of a permanent secretariat of the Council of Common Interests (CCI) in the ministry of the IPC as required under the 18th Constitution Amendment.

Experts address emerging

Continued from front page

by the Soil Science Society of Pakistan (SSSP) and Sindh Agriculture University (SAU), Tandojam, on the varsity's campus in Jamshoro. A number of companies producing and marketing seeds, fertilisers and other agricultural inputs as well as food products have also set up their stalls at an exhibition on the SAU campus. The exhibition was inaugurated by Livestock Minister Pitafi and SAU VC Dr Mujeebuddin Sahrai. The experts panel were Prof Zaheer Ahmed Zaheer of the University of Agriculture, Faisalabad, SAU's soil science department chairman Prof DrInayatullah Rajpar, Soil Science International Congress secretary Prof Dr Murtaza Jamro, Pakistan Agriculture Research Council chairman Dr Mohammad Azim Khan and MPA from Tharparkar Qasim Siraj Soomro. Sindh Minister for Livestock and Fisheries Abdul Bari Pitafi, speaking as the chief guest, said: 'Soil is not only cultivable source for producing crops, but a natural asset on which all creatures, ecosystem, biodiversity and life depends. It's the main source of livelihood'. Pitafi said that all sources of food depended on soil. He urged the youth to go for agriculture sector professions, explore ideas and adopt sustainable farm practices for ensuring food security. He said that agriculture and livestock sectors that had been neglected in the past needed priority for the progress of the country and prosperity of the nation. The minister said that the Sindh government intended to evolve policies for the agriculture sector, and called for linking employment with agro-based economy. Mr Pitafi stressed the need for conserving biodiversity and maintaining ecosystem on which depended human life. While addressing the audience, SAU Vice Chancellor Prof Dr Mujeebuddin Sahrai said, "Soil is the basic medium of survival of human beings, flora and fauna. Soil may be called the soul of infinite life." "Although we have three main elements soil, water and seed for farming, they

presently seem not safe for enhancing productivity. We have to manage our soil resource on sustainability for ensuring food and livelihood security. We have to fulfil aspirations of people for better living," the VC said. Prof Sahrai lauded SSSP's efforts in conducting this symposium. He noted that climate change had already taken a heavy toll on soil fertility. About the event, the SAU vice chancellor said that there would be around 500 oral and poster presentations at the three-day congress. The proceedings, he said, would help policymakers cope with emerging challenges in maintaining soil and environment and ensuring better livelihood. Azad Jammu & Kashmir (AJK) University, Vice Chancellor, Prof Mohammad Kaleem Abbasi, who also heads the SSSP, said that soil scientists and researchers had come here to share their ideas and understanding on protecting soil and producing healthy food crops to meet requirement of the ever-growing population of the country. Prof Kaleem said that the event was aimed at promoting research on soil-related issues. He said soil management was the key component of food security, which had become a global issue.

CPEC offers great ....

Continued from page 07

challenging, but it can be done. But to do that, it was necessary to improve the standards of our product to be able to compete with these countries. Haripur University Vice-Chancellor Dr Anwarul Hasan Gilani noting that there was a pressing need for using modern technological systems and methods to could cope with present-day challenges such as global warming and climate change. The speaker emphasized the need to focus and invest in building the capacity of locals apart from improving access to international markets. He called for taking immediate measures, such as making crops nutritive and resilient to climate change, rescuing of more farmland, empowering of small landholders, de-urbanisation, preservation of water, recycling of crop/livestock waste and saving of food through public awareness drives if Pakistan is to answer its rising food security threats.

The Miracle of PAPAYA

Continued from page 10

Identifying bio-insecticides that are efficient, as well as being suitable and adaptive to ecological conditions, is imperative for continued effective vector control management. Botanicals have widespread insecticidal properties and will obviously work as a new weapon in the arsenal of synthetic insecticides and in future may act as suitable alternative product to fight against mosquito borne diseases. Papaya has potential and may be used against diversity of parasites. Besides, it kills mosquito larvae, Papain is an enzyme from the papaya plant that may help kill worms when taken 30 minutes before or after meals.

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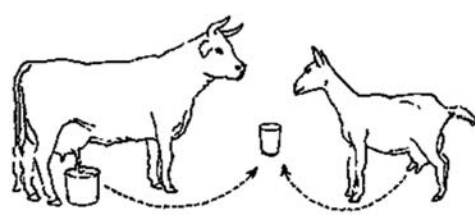
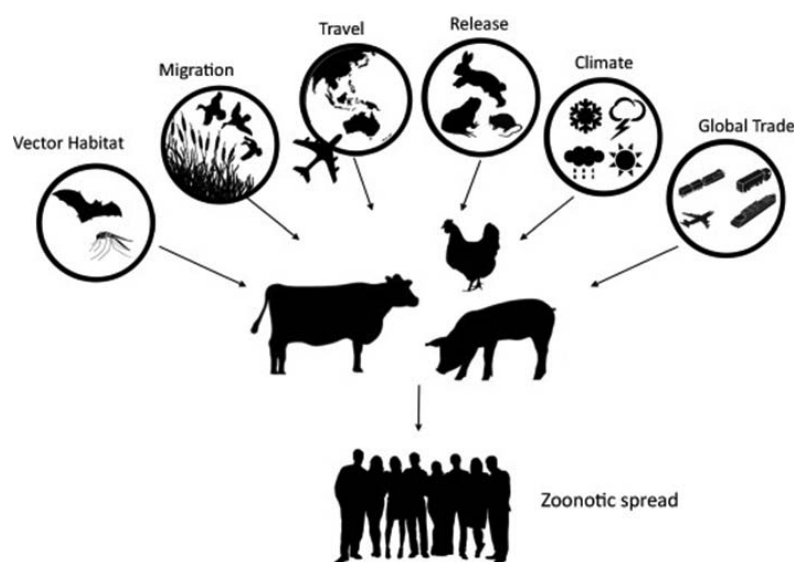
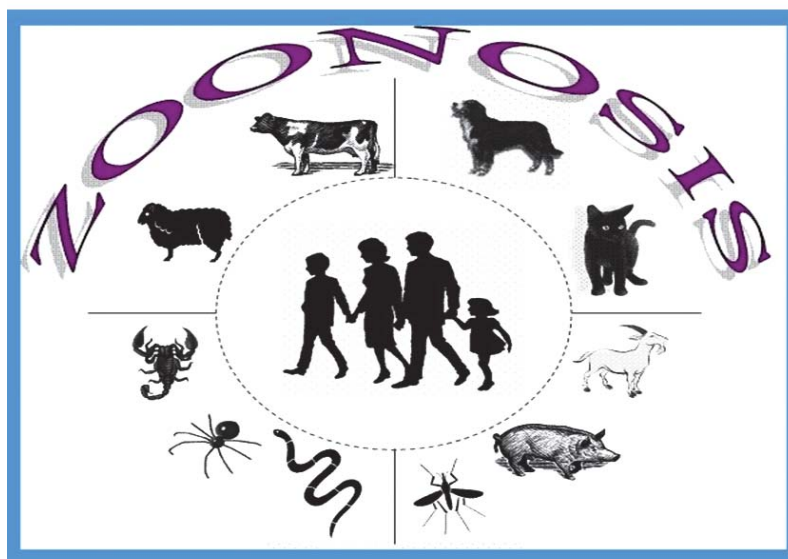
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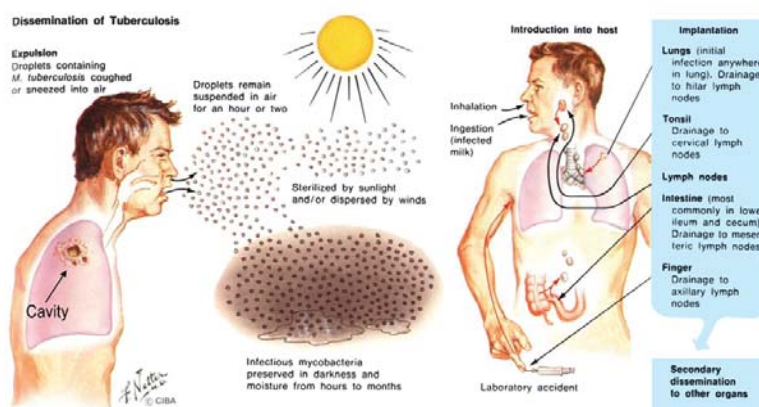
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# Zoonosis: A brief insight



## Transmission of Tuberculosis



Burn the carcass or bury it in four feet deep and cover with lime.

► Quarantine the flock from where affected animal belongs.

► Separate sick animals and treat them.

### Brucellosis

It is known as Bangs disease in animals and as Malta fever in humans. It is a bacterial disease and have five species, out of them three are most important and found round the globe.

### Hosts

► Brucella abortus mainly affects cattle but camels, horse and humans are also affected.

► B. ovis causes abortion in cow and testicular inflammation in rams.

► B. melitensis is important in humans and highly infectious in sheep goats.

### Transmission

► The common route of transmission is through blood, urine, vaginal secretion and placenta.

► Consuming unpasteurized milk and milk products

Inhaling the aerosol in lab where brucella organisms are kept.

► Breast feeding and sexual transmission is also observed but rarely.

► Contaminated tissue transplants are also a reason.

### Signs

► In cattle we see disintegration of placenta, abortion and retention of fetal membranes.

► In sheep and goat late term pregnancy is observed.

► In dogs, found rarely but cause abortion, early death of puppies and spinal discs infection

► Cats are resistant to brucella.

► Horses show less frequent abortion but abscess formation is found in horses as a result of infection of brucella.

► The term Malta fever is used for brucellosis in human being and fluctuation in temperature is most common sign in human.

### Treatment /Control

► Vaccine for brucella is available for livestock but not for humans.

► Properly pasteurized milk must be used.

► Butchers and hunters must wear gloves when slaughtering animals and handling their viscera.

► Attendants or Veterinarians must use gloves and keep the rules of biosafety in mind while assisting calving or dealing with aborted material.

► Immuno-compromised people must avoid dealing with any suspected case.

► There is no effective treatment for brucella.

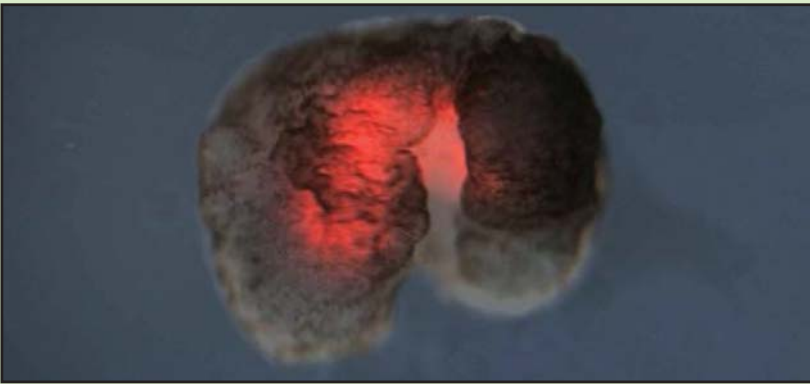
### Cat Scratch Disease-CSD

CSD or Cat Scratch Fever are interchangeable terms which are specific use for this disease. It is including in zoonotic category of

**Continued on Page 20**



# Xenobot: The First Living Robot



A remarkable combination of artificial intelligence and biology has produced the world's first living, self-healing robots using stem cells from frogs. Xenobots is named after the African clawed frog (*Xenopus laevis*) from which they took its stem cells. This highly advanced robot is less than a millimeter wide and small enough to travel inside human bodies. It can walk and swim, survive for weeks without food, and work together in groups. It is an entirely new life-form and can also move toward a target and heal themselves after being cut. These novel living machines are neither a traditional robot nor a known species of animal. They are a new class of artifact, a living, programmable organism! The xenobots were created using an evolutionary algorithm by generating potential solutions and then repeatedly picking and mutating the most promising ones. The algorithm conjured thousands of random configurations. These include between 500 and 1000

skin and heart cells, each one was tested in a virtual environment. Many were useless lumps. But those that showed potential such as being able to move, were tweaked and used to seed the next generation. After running this process 100 times, the researchers built the best designs out of living cells. Stem cells are unspecialized cells that have the ability to develop into different cell types. The researchers scraped living stem cells from frog embryos, and left them to incubate.

Then, the cells were cut and reshaped into specific body forms. The cells then began to work on their own, skin cells bonded to form structure, while pulsing heart muscle cells allowed the robot to move on its own. Xenobots even have self-healing capabilities; when the scientists sliced into one robot, it healed by itself and kept moving. Traditional robots degrade over time and can produce harmful ecological and health side effects. As biological machines, xenobots

are more environmentally friendly and safer for human health. Xenobots could be used to clean up radioactive waste, collect microplastics in the oceans, carry medicine inside human bodies or even travel into our arteries to scrape out plaque. They can survive in aqueous environments without additional nutrients for days or weeks making them suitable for internal drug delivery. Further development of biological "robots" could accelerate our understanding of living and robotic systems. Life is incredibly complex, so manipulating living things could reveal some of life's mysteries. Aside from these immediate practical tasks, the xenobots could also help researchers to learn more about cell biology opening the doors to future advancement in human health and longevity. This first crop of xenobots is very basic. But future versions could be made with nervous systems and sensory cells which would allow them to react to their environment. It is far from clear whether we should treat such robots as machines or living creatures.

## Zoonosis: A brief insight

*Continued from page 19*

diseases. It is not really a lethal disease but most of cat owners gets affected from it.

### Hosts

Cats are the primary reservoirs for human infection. Its affects the cats when they bite or paw each other. Transmission:

It is transmitted from cats, mainly kittens by following ways

- Bite
- Lick
- Scratch

It is not a contagious disease and no vector is involved in the transmission of CSD.

### Signs

- Lymph nodes near affected area become swollen and painful.
- Headache
- Mild fever
- Lethargy
- Encephalitis resulting in seizures may also be observed.

### Treatment and control:

- Keep cats indoors.
- Don't allow the cat to lick open wounds.
- Keep claws of cat trimmed, declawing is not necessary.
- Avoid playing with kittens that bite.
- Scrub cat bites and scratches immediately with soap and warm water. Use hydrogen peroxide after scrubbing.
- Always clean hands after handling cats.
- Control flea population.

### Tuberculosis-TB

TB is common bacterial contagious disease and cause death in immunosuppressive patient especially in HIV/AIDS patients. Other names of this disease are red death, white plague, wasting disease and Koch's disease. It is caused by genus *Mycobacterium*. They are slow growing gram positive bacteria.

### Host

Humans are ultimate reservoir of *M. tuberculosis* but non-human primates, dog, pigs, cattle, and some birds become infected by reverse zoonosis.

### Transmission

- There are following ways of transmission of TB:
- Aerosol droplets.

- Direct contact with infected people.
  - Contact with contaminated surfaces.
  - Use of unpasteurized milk and products made from it.
- ### Signs
- The disease is characterized by
- Stress
  - Low fever
  - Decreased production
  - Weakness
  - Anorexia
  - Lymph nodes may be swollen.

### TB in humans

If person is affected by aerosol droplets form then there are signs of fever, bloody sputum, cachexia, productive cough and chest pain. Some people despite having exposed to bacteria don't develop disease signs as they have latent form of disease, in this condition organisms are in hibernating state. Treatment and Control:

- Combination of approved antimicrobials.
- Treatment must last up to 6 months.
- Untreated cases may be fatal.
- There is vaccine available but it doesn't give 100 percent protection in humans.
- For prevention, isolation and quarantine of suspect animals.
- Provide adequate ventilation in TB suspected areas.
- A regular surveillance program to identify infected animals and people.
- Wear protective clothing while treating affected animals.

### Rabies

It is a best known zoonotic and deadly disease around the world. It has been around for thousands of years and strikes fear in people everywhere. Without treatment its outcome is almost always fatal.

### Host

Most reported cases by CDC in wild animals include raccoons, bats and foxes. In domestic animals cats, dogs and cattle are most often affected.

### Transmission

- Routes of transmission of rabies are:
- Saliva through bites of infected animals
  - Aerosol transmission
  - Organ and tissue transplant
  - Contamination of mucous membranes

- Virus cannot enter the intact skin
- ### Rabies in animals

Cell mediated immunity is stimulated when virus enters the animal. After uptake into peripheral nerves, virus enters the CNS. Incubation period is normally one to three months. Bites on head, neck and arms spread most quickly than in other parts. From there spread to peripheral nerves and salivary glands.

### Stages

There are three stages of rabies:

- Prodromal
- Excitatory
- Paralytic

Signs:

### These are signs of disease

- Change in behavior
- Flaccid paralysis
- Respiratory/cardiac failure
- Eventually death may occur within 10 days of first clinical sign
- Eating and drinking stopped
- Urogenital tract is irritated or stimulated
- Bats flying in daytime are probably rabid

### Rabies in humans

First signs may include fever headache, which may last for days. There is discomfort, anxiety, hallucinations, insomnia and painful laryngeal spasm are seen as signs. Patient refuses to drink and a condition called hydrophobia is developed.

Treatment and control:

This is nearly fatal disease so supportive treatment is given. There is no sanctioned treatment if signs appeared but rabies vaccine is available that is much affective if administered before or after the exposure of infection.

Pre exposure vaccination is done on day 0, day 7 and day 21 or 28. Its effectiveness is measured by presence of antibodies in blood.

Post exposure prophylaxis is for those who get the infection. The vaccine is given in 5 intramuscular injections at day 0, 3, 7, 14 and day 28 after exposure.

### Prevention

Following are preventive measures of rabies:

- No direct contact with stray dogs
- Culling of suspected or rabid animals after confirmation.
- Quarantine measures for new animals.
- Never brought wild animals to your home.
- Always vaccinate your pets before the infection.





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| Vitamin K3  | 10 gm      |

**DOSAGE:**

Treatment: 1 gm per 2 liters of drinking water for 3 to 5 days.

Prophylaxis: 1 gm per 2 liters of drinking water for 3 to 5 days.

**PACKING:**

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**DOSAGE AND ADMINISTRATION:**

**Poultry:** 1 gm in 4 to 5 liters of drinking water for 3 to 5 days.

**Cattle:** 600mg per 50 kg body weight daily for 3 to 5 days.

**Sheep & Goat:** 600mg per 50 kg body weight daily for 3 to 5 days.

**PACKING:**

1Kg



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## بقیہ: بے قابو ڈینگی۔۔

جان لیوہ ہو سکتی ہے اسے ڈینگی ہیمریکٹک فیور (Dengue Hemorrhagic Fever) کہتے ہیں۔ اس کی نمایاں علامات میں آنکھوں کے پیچھے شدید درد، پیٹ درد اور جسم کے مختلف حصوں سے خون کا رنا نہیں۔ خون کی باریک رگوں سے خون رسنے لگتا ہے۔ خون میں پلیٹلیٹس (Platelet) خلیوں کی مقدار خطرناک حد تک کم ہو سکتی ہے۔ خون کی رگوں سے رسنے کی وجہ سے ان میں موجود پانی رگوں سے باہر آنا شروع ہو جاتا ہے جس سے خون کے دباؤ میں کمی واقع ہو سکتی اور اس حالت کو ڈینگی شوک سنڈروم (Dengue shock syndrome) کہتے ہیں۔

ڈینگی بخاری تشخیص دو طریقوں سے ہوتی ہے۔ ایک مریض کی علامات سے اور دوسرا لیبارٹری ٹیسٹ کے ذریعے۔ شرعیاتی مراحل میں اس مرض کے ٹیسٹوں کا انحصار علامات پر ہوتا ہے۔ جیسے بخار، جلد پر سرخ دھبے، بنا، جسم میں درد اور آنکھوں کے پیچھے درد وغیرہ۔ خون کے ٹیسٹ میں Platelets کی تعداد میں کمی ہوتی ہے۔ ایک صحت مند انسان کے خون میں 150000 سے 450000 Platelets فی مائیکرو لیٹر ہوتے ہیں۔ کسی وائرس کے حملہ ہونے کی صورت میں ان Platelets کی

تعداد 90000 سے 100000 تک گر جاتی ہے جبکہ ڈینگی فیوری حالت میں بھی تعداد صرف 20000 تک یا اس سے بھی کم رہ جاتی ہے۔ لیکن مکمل صحت پانے کے بعد یہ تعداد واپس نارمل پر آ جاتی ہے۔ دوسرے قسم کے ٹیسٹ میں ڈینگی کے خلاف خون میں اینٹی باڈیز (Antibodies) کی شناخت کرنا ہے۔ سب سے زیادہ کیا جانے والا ٹیسٹ ڈینگی امینو گلوبن ایم (Dengue IgM) کہلاتا ہے۔ یہ ٹیسٹ اگر ابتدائی علامات کو بروقت جانچ کر کروالیا جائے تو منفی (Negative) بھی ہو سکتا ہے کیونکہ عام طور پر ان اینٹی باڈیز کو جسم میں بننے اور شناخت کرنے میں چار سے پانچ دن لگ جاتے ہیں۔ اس بیماری کے علاج کے لیے مریض کو سپورٹو تھیراپی (Supportive therapy) دی جاتی ہے۔ اس لیے حفظ ماقدم کے طور پر کہا جاتا ہے کہ پانی اور دوسرے مشروبات کا استعمال زیادہ سے زیادہ کریں۔

اگر Platelets بہت کم ہو جائیں جس سے خون جاری ہونے کا احتمال ہو تو اس صورت میں Platelets کی ڈرپ لگانا ضروری ہو جاتا ہے۔ مریض کو مسلسل زیر نگرانی رکھ کر اس کے خون کے دباؤ، درج حرارت اور خون کے نظام کو نارمل رکھنے کی کوشش کی جاتی ہے۔

اس بیماری پر قابو پانے کے لیے چھجروں کا خاتمہ کرنا نہایت ضروری ہے۔ چھجروں کی افزائش زیادہ تر گھروں میں پانی جمع کرنے کے برتنوں، پودوں کے گلوں، پانی کی ٹینکیوں، وائٹلروں، استعمال شدہ نائزوں اور ایسی جگہوں پر جہاں بارشوں کا پانی جمع ہو رہا ہو جاتی ہے۔ ان تمام جگہوں سے پانی کو ختم کریں یا اسے ڈھانچ کر رکھیں۔ گھروں سے چھجروں کو بھگانے کے لیے چھجرا مارا سپرے اور جسم پر چھجروں کو دور رکھنے کے لیے لوشن یا کوئی مٹلوس استعمال کریں۔ پوری آستین کے کپڑے پہنیں اور رات کے وقت چھجرا مارنے

والے کوائل کا استعمال کریں۔ جالی یا نیٹ (چھجروں) کے اندر سوئیں اور گھر کے ارد گرد کے ماحول کو صاف رکھیں۔ دروازوں، کھڑکیوں اور روشن دانوں میں جالی کا استعمال کریں۔ گھروں کے پردوں پر بھی چھجرا مارا ادویات کا سپرے کریں۔ سورج نکلنے اور غروب ہونے کے وقت بچوں کو ڈینگی چھجرا سے بچائیں اور گردن و نواح میں ڈینگی سے بچاؤ کے متعلق آگاہی پھیلائیں۔ خاص طور پر دفنوں، سکولوں اور دیگر اداروں میں بھی حفاظتی اقدامات اپنائیں۔ اگر ڈینگی علامات محسوس ہوں تو فوری طور پر ڈاکٹر سے رجوع

کریں تاکہ جلد از جلد مرض کی تشخیص اور علاج کیا جاسکے۔ ان تمام ترقیاتی اقدامات کے باوجود اگر چھجروں کی تعداد میں کمی نہ ہو تو مقامی انتظامیہ سے درخواست کر کے علاقے میں چھجرا مارا سپرے کروائیں۔ اس سلسلے میں بین الاقوامی ادارہ برائے صحت اور وزارت صحت ملکی سطح پر پاکستان میں ڈینگی چھجرا اور اس سے پھیلنے والی بیماریوں کے تدارک کے لیے ہمدردی کوشاں ہے۔ مزید براں پیشہ تعلیمی اور تحقیقی ادارے بھی اس بیماری کے کنٹرول اور بچاؤ کے لیے اپنا کردار ادا کر رہے ہیں۔

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**اے. وی. این**

ایگزیکٹو وٹرنری نیوز

کچھ عرصہ بعد غائب ہو جاتے ہیں۔ مریض کو پسینہ آتا ہے اور مریض نازل محسوس کرنے لگتا ہے مگر بہتری کی یہ حالت ایک دن ہی رہتی ہے۔ جس کے بعد بخار زیادہ تیزی سے چڑھ جاتا ہے اور اس کے ساتھ ہی جسم پر باریک دانے نمودار ہو جاتے ہیں اور اس بار چہرہ محفوظ رہتا ہے۔ البتہ تھیلیاں اور مسوڑھے سوخ کر سرخ ہو جاتے ہیں۔

ڈینگی بخاری کی شدید شکل جو بہت خطرناک اور (بقیہ صفحہ نمبر 23)

اختیار کرتا ہے۔

مچھر کے کاٹنے کے چار سے سات روز کے اندر ڈینگی کی علامات ظاہر ہو سکتی ہیں اور ان علامات میں تیز بخار، سردی کا لگنا، جسم میں شدید درد اور کمزوری، بیماری کے ابتدائی گھنٹوں کے دوران ناگوں اور جوڑوں میں شدید درد، سرد درد اور بعض مریضوں کی آنکھوں کے پیچھے شدید درد، منہ کا ذائقہ کڑوا ہو جانا، رقرار قلب میں کمی، چہرے کا سرخ ہو جانا یا ہلکے گلابی رنگ کے دانوں سے بھر جانا جو کہ



ہے اور 99 فیصد مریض اس عارضے سے مکمل طور پر صحت یاب ہو جاتے ہیں، یعنی ایک فیصد سے بھی کم لوگوں میں یہ مہلک شکل

## بے قابو ڈینگی مچھر پر کیسے قابو پایا جائے؟

تحریر: سیما ظہور، ڈاکٹر میاں محمد اویس، ڈاکٹر مسعود اختر، احسن فیاض

فیکلٹی آف ویٹرنری سائنسز بہاؤ الدین زکریا یونیورسٹی ملتان

انسانوں میں ڈینگی کا باعث بنتے ہیں۔ ایک قسم کے وائرس کا حملہ صرف ایک باری ہو سکتا ہے، دوسری مرتبہ ڈینگی بخار دوسری قسم کے وائرس سے ہو سکتا ہے۔

کسی بھی متاثرہ شخص کو کاٹنے سے DEN-Virus اس مچھر میں آ جاتا ہے اور اس کے بعد اگر یہ مچھر کسی دوسرے صحت مند شخص کو کاٹ لے تو یہ وائرس اس میں منتقل ہو جاتا ہے۔ ڈینگی بخار عموماً ان لوگوں میں زیادہ ہوتا ہے جن کی قوتِ مدافعت کمزور ہوتی ہے۔ یہ بیماری براہ راست ایک شخص سے دوسرے شخص میں منتقل نہیں ہوتی۔

ڈینگی بخار کی فوری علامات میں تیز بخار، شدید سرد درد اور علامات زیادہ خراب ہونے کی صورت میں جسم سے خون کا رساؤ شدت اختیار کر جاتا ہے حتیٰ کہ موت واقع ہو جاتی ہے۔

ڈینگی بخار کو بریک بون فیور (Break Bone Fever) کہا جاتا ہے کیونکہ اس بخار کے دوران ہڈیوں اور پٹھوں میں اتنا شدید درد ہوتا ہے کہ ہڈیاں ٹوٹی ہوئی محسوس ہوتی ہیں اور یہ مرحلہ کافی تکلیف دہ ہوتا ہے۔ یہ بیماری گرم اور نیم گرم علاقوں میں پائی جاتی ہے اور دنیا بھر میں دس کروڑ سے زائد افراد ہر سال اس سے متاثر ہوتے ہیں۔ تاہم بروقت علاج سے اس بخار سے صحت یابی کا تناسب کافی زیادہ

ڈینگی بخار ایک خاص وائرس کی وجہ سے ہوتا ہے۔ اس وائرس کا تعلق Flaviviridae فیملی سے ہے۔ یہ وائرس کالے رنگ کے دھاری دار Aedes aegypti مادہ مچھر کے کاٹنے سے انسانوں میں منتقل ہوتا ہے۔ ایڈیز (Aedes genus) جنس کی 700 سے زیادہ اقسام ہیں جو کہ مختلف نوعیت کی شدید اور ہلکی بیماریاں پھیلاتا ہے۔ ان بیماریوں میں ڈینگی کا بخار، yellow fever، ویسٹ نائل فیور اور ذکا وائرس قابل ذکر ہیں۔ ڈینگی بخار کی وبا کی پاکستان میں سب سے پہلی رپورٹ جولائی 2019 میں خیبر پختونخواہ کے شہر پشاور سے حاصل کی گئی۔ اس کے بعد یہ وبا پھیلی پھیلی ملک کے باقی صوبوں میں میں شدت اختیار کر گئی۔

سال 2019 میں جولائی تا نومبر کے دوران گل 47120 کیس دیکھنے میں آئے جن میں سے 175 افراد اس مرض کی وجہ سے زندگی کی دوڑ ہار گئے۔ Aedes aegypti مچھر کی ٹانگیں دیگر مچھروں سے لمبی ہوتی ہیں اور اس کے جسم اور ناگوں پر سفید رنگ کے دھبے ہوتے ہیں۔ یہ مچھر گرم اور نیم گرم علاقوں میں پائے جاتے ہیں۔ یہ مچھر صبح طلوع آفتاب اور شام غروب آفتاب کے وقت نکلنے اور لوگوں کو کاٹتے ہیں۔ دیگر مچھروں کے برعکس یہ مچھر بڑا صفائی پسند ہے۔ گندے تالابوں اور جوڑوں کی بجائے یہ مچھر گھریلو وائٹرولر، صاف پانی سے بھرے برتنوں، پودوں کے گلوں، غسل خانوں اور بارش کے صاف پانی میں تقریباً سارا سال ہی پلٹا رہتا ہے۔ تاہم برسات کے موسم میں تیزی سے افزائش نسل کرتا ہے۔

چار مختلف اقسام کے وائرس DENV-1، DENV-2، DENV-3 اور DENV-4



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