

### SUGAR PROBE REPORT

## Centre approached SC to nullify high court's order

#### AVN Report

**ISLAMABAD** - The federal government has recently approached the Supreme Court to challenge the Sindh High Court's (SHC) order which has prevented it from taking action against sugar mill owners in light of recommendations of the sugar inquiry commission.

According to reports, a petition filed by the government argues that the government cannot be stopped from taking action on the sugar

inquiry report. The government has asked the apex court to declare the SHC order null and void.



The SHC had in its order stopped the federal government from taking action against the sugar mill owners

who according to an inquiry commission report had allegedly minted billions of rupees by whipping up a sugar crisis in January this year.

The Islamabad High Court had on June 20 allowed government agencies to take action against the sugar barons responsible for shortage of the commodity earlier

this year and dismissed a petition requesting the court to stop a crackdown started on

**Continued on Page 15**

## 'Pakistan and India are working together in fight against locust menace'

#### AVN Report

**KARACHI** - Pakistan's foreign office recently told that Pakistani and Indian authorities were working together to combat the worst invasion of desert



locusts in decades in the region, which was threatening crops in both countries. The two countries - also bitter regional rivals - have been coordinating through the United Nations Food and Agriculture

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## Poultry body rejects 'propaganda' of coronavirus in chicken

#### AVN Report

**LAHORE** - The Pakistan Poultry Association has expressed concerns over the rumours of chicken carrying coronavirus, and termed them false and baseless. It condemned the 'baseless propaganda,' stating that people should continue consuming chicken and other poultry products without any fear.



"Coronavirus has not been reported in any chicken product in any part of the country. Besides, poultry has not been reported to be linked with transmission of the virus to humans in any part of the world." "All the rumours being spread or circulated on social media in this regard are wrong and baseless," the association's northern region vice chairman, Chaudhry Fargham, told journalists during a press conference here recently.

Flanked by the association's office-bearers, Mr Fargham said the Ministry of National Food Security and Research (Livestock Wing) and Poultry Research

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# Cattle keepers get assistance to boost meat production

## AVN Report

**LAKKI MARWAT:** The livestock department recently distributed cheques among the cattle keepers and farmers to help save premature slaughtering of calves and increase meat production.

Additional assistant commissioner Aminullah Khan handed over the cheques under the government's 'save the calf and calf fattening projects' in Naurang town recently. He appreciated the farmers for taking interest in implementation of the projects aiming to alleviate poverty and increase the production of meat. District director livestock Dr Mubarak and in-charge officer of local veterinary hospital, Dr Ikramullah



Khan were also present.

"Under the projects the livestock department has registered the cattle keepers and farmers to sensitise them to save calves from premature slaughtering and play an effective role in increasing the production of meat," said Dr Mubarak.

He said the livestock growers registered with the department were now

avoiding slaughtering calves of cows, buffalos and other animals at an early age.

"The department's experts visit the cattle enclosures regularly to examine animals and provide the keepers with free medicines and facilitation," he maintained, saying the calves would be saved up to the age of three months under the projects.

# Punjab aims for online sacrificial animal sales

## AVN Report

**LAHORE** - The Punjab government is considering a proposal to allow online sale/purchase of sacrificial animals, impose ban on home slaughter, curtail gathering in major cattle markets and other measures to avert spread of coronavirus.

The government also plans to develop certain apps and websites of Lahore Division Cattle Market Management Company (LDCMMC) and other divisional companies in association with the Punjab Information Technology Board (PITB), according to sources. In a recent meeting with the Lahore Commissioner, who heads the LDCMMC's board of directors (BOD), various proposals were discussed. "The participants were of the view that sacrificial animal markets may emerge as Covid-19 hot spots causing spread of infection," an official source told.

Lahore hosts a major sale point in Shahpur Kanjran which attracts a large number of animal farmers and traders from Punjab, Sindh and Balochistan. This is also considered to be a major source of animal supply to Khyber Pakhtunkhwa and Kabul (Afghanistan).

Besides this, Lahore also hosts other sale points of sacrificial animals at Saggian, LDA Avenue-1, Punjab Society (near Wapda Town), DHA/Cantt and Harbanspura where animal sales remain at peak till Eid. Cattle markets for sacrificial animals are also organised each year at Faisalabad, Gujranwala, Rawalpindi, Multan, Sahiwal, Sargodha, Bahawalpur, DG Khan and other cities under respective cattle market management companies and district administrations.

"As Covid-19 is spreading fast, we are considering a proposal to either not set up



animal markets or at least work out a strategy to at least reduce gathering of people for sale/purchase purposes. It will only be possible when we encourage online sales of sacrificial animals," the official.

"It is being planned to develop apps and websites through which traders can market their animals through photos and videos and make them available at various small designated spots/farms out or inside the city," he added.

By doing so, according to him, public gatherings can be reduced at Shahpur and other sale points in Lahore and rest of the province.

He said another proposal to restrict sacrificial animals' slaughter at homes by butchers is also under consideration. "The government is afraid that butchers, who generally don't take care of their health, especially in context with Coronavirus due to lack of awareness, may become a source of infecting others."

"The government wants them (butchers) do this work at designated spots (parks, grounds) under Covid-19 SOPs and precautionary measures," the official said. He said a final decision is expected before July 2.

# Poultry traders postpone strike as Govt agrees to resolve price issue

## AVN Report

**LAHORE** - Poultry traders deferred their plan of starting another round of strike recently after the provincial government constituted a high-level committee to look into the chicken wholesalers and retailers' concerns, primarily related to the price mechanism.

On the other hand, the chicken meat price has been ranging from Rs300 to Rs350 per kilogram for the last many days due to a decrease in supply from the farms to wholesalers.



"We had a plan to go for the second round of strike from today (Monday). But the government on Sunday constituted a committee headed by the livestock department secretary to review our demands and settle the issue for evolving a smooth chicken market mechanism. The meeting of the committee, which also includes representatives of the Lahore Poultry Association, will also be held very soon," the association's president Tariq Javed told.

"Therefore, the poultry traders' representatives have unanimously decided to defer the strike plan until the outcome of the committee meeting," he added.

*Continued on Page 15*

# Veterinary dispensaries facing closure in Chitral

## AVN Report

**CHITRAL** - The livestock and dairy development department is going to close down veterinary dispensaries in four far-flung areas of Chitral over the shortage of funds.

An official of the department told that veterinary centres were established in Bang Yarkhoon, Kalas Sheshi Koh, Shabronz Oveer and Jinjiret Koh areas from the discretionary development funds of the former MNA and MPAs during the last government initially for three years.

He said all those four centres faced closure on June 30 as no funds were available in the next fiscal to manage them.

The official said such temporary facilities were usually granted permanent status after their integration into the livestock department.

Meanwhile, former kissan councilor in district council Rahmat Elahi said veterinary centres in

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# COVID-19: Impact on dairy farmers

By Hamza Jawad

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## Introduction

The COVID-19 pandemic appeared as a global threat as this virus has affected almost all the countries and infected human in an unexpectedly rapid rate. Pakistan is also facing this situation. Pakistan is the 4th largest milk-producing country in the world. Approximately 80% of milk is produced at a small scale in rural areas, 15% peri-urban and 5% in the urban areas. Pakistan Government has been taking the highest level of precautions and investing all possible options for safeguarding its people. Dairy sector of Pakistan is a promising sector which has been contributing to economic growth. Proper attention should be given to this sector to trade off the financial loss of the dairy sector due to coronavirus outbreak. In winter milk production was in excess but hot summer milk production decline.

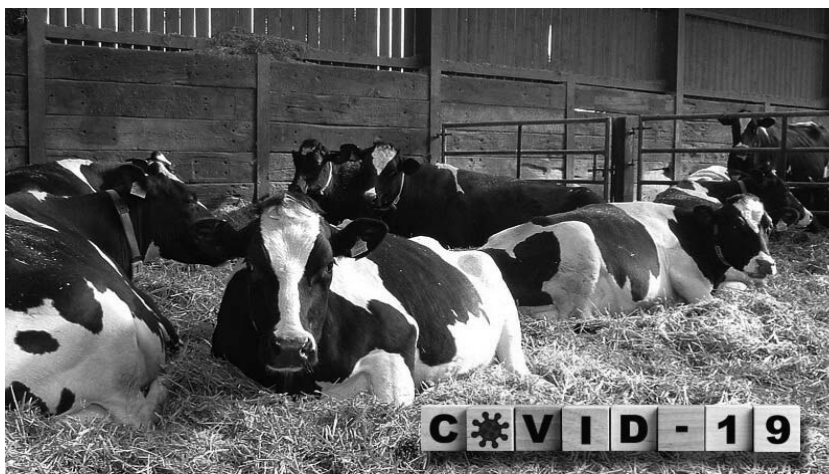
## Can COVID-19 effect dairy animals?

The answer is "no" which is pleasant news for the dairy farmers as they might feel relaxed to handle their cows during this crisis. The coronavirus, which is a modified strain of the SARS virus - a virus that had strong zoonotic potential as the first patient of SARS-COV had contact with the animal. The Wuhan strain of coronavirus in humans is a relatively new challenge. Utilising the expert opinion from the North Carolina University of the USA, it is argued that there is no chance for dairy cattle to be affected with the one that has been affecting humans. At the same time, veterinary epidemiologist of Texas A&M University of the USA has reported that coronavirus is not new to livestock and poultry. This poses as a positive message for the dairy industry in Pakistan.

The World Health Organization has reported that while the coronavirus MERS-CoV is known to be transmitted from camel to humans, other coronaviruses circulating in domestic animals have not yet infected humans. The outbreak of coronavirus (COVID-19) has added as a threat which might have an impact on the overall economics of the dairy industry. This needs to be considered for reducing the economic loss in the subsequent time (during and after corona stress).

Impact on milk production and milk price

There is increased demand for products as consumers stock up



shelves for potential quarantines or to limit their trips to the grocery store. Nowadays the temperature is rising, and in the hot summer season, the milk production is decreasing day by day. Therefore the milk demand is increasing day by day, and production is declining. In contrast, some experts say, due to the limited movement of the people for the next few weeks as lockdown is extending, there could be short term effect on milk marketing and price might be lowered. The production could be decreased as well if the sufficient measures are not taken in due time. The immediate actions could include as below.

- As a short term, dairy farmers have to continue their regular management practices but with great care.
- Cows and other herds should be provided with sufficient drinking water and also green grass to maintain milk production and supply.
- On large farms where milk is produced in large amount, and milk selling and delivery to the processor is not possible, the farmers can reduce the cash costs by lowering the purchased feeds (e.g. concentrates). This will decrease milk production for a short-term but maintenance of the animal will not be hampered. As a result, when the reasonable condition will come, the cows can get back to the original potential for milk production.
- At the same time, the government should declare the liquid milk supply chain similar to the other food items (as emergency goods).

## Milk role in protection from COVID-19

- It is quite interesting that liquid milk can contribute to increasing the immune homeostasis of the humans (especially with oropharynx and upper respiratory tract). The review research article published in "Frontier in Immunology (Volume 9, article 143; year: 2018)" clearly revealed that cow's milk has immunoglobulin (IgG) which is helpful against the bacteria, virus and allergens. The function of IgG is enhanced with vitamin A and D3

- both are present in milk; therefore, it can be speculated that cow's liquid milk may influence the development of the immune system in the upper respiratory tract.

- More emphasis should be placed on the awareness or campaign to the people to drink milk which should improve the immune system against coronavirus.

- Finally, the government, at this stage, has taken right decision to make all efforts for ensuring the safety of humans first but in the long run, it needs to make timely decisions targeting the ways to overcome the current and anticipated future loss.

## Here are some additional farm management considerations specific to dairy farm operations

### 1. Basic hygiene practices should be practised at work.

Workers should be washing hands frequently using soap and hand sanitiser. Management should communicate the importance of good hygiene practices through signage at various locations throughout the farm.

### 2. Soap and hand sanitisers should be made available around the farm. This should include areas where there are essential off-farm visitors, such as the front office and scale office.

**3. Limit close interactions** between co-workers. The milking parlour is a work area that often necessitates close communication among workers. This is the work area that is of most concern for virus transmission between workers. Other areas that can involve close interactions include maternity and hospital operations. Workers who show signs or report symptoms of COVID-19 should not be allowed to work or be on the farm.

**4. Encourage workers to stay 6 to 10 feet apart** and communicate via radios or cell phones. Work meetings should be limited when possible. Meetings should be held in a well-ventilated area or outside space. When group meetings do take place, workers should be adequately spaced apart

a minimum of 6 feet to mitigate possible virus transmission.

### 5. Workers should avoid handshaking.

Employ other greeting methods like elbow and foot taps or distance waves. Food and beverage sharing between workers should be discouraged.

### 6. All hard surfaces should be disinfected regularly.

Recent studies have reported that active COVID-19 can remain airborne from 30 minutes up to three hours; on cardboard materials up to 24 hours, on stainless steel up to two days, and on plastic up to three days. A critical analysis of all work and product surfaces should be undertaken to identify which materials should undergo some form of a sanitisation or cleansing. This includes two-way radios, cell phones, machinery cabs, office areas and desks, restrooms, break room surfaces, lockers, door handles, switches, time clocks, and any other surface that might provide an opportunity for virus transmission. Items should be disinfected at least twice a day using Environmental Protection Agency (EPA) registered antimicrobial products for use against COVID-19 found here. Workers or teams on each shift should be assigned the responsibility to disinfect regularly used areas and surfaces.

### 7. All worker uniforms should be cleaned or laundered daily.

**8. Workers should be cross-trained** to allow them to perform different job tasks on the farm in the event of limited staffing.

### 9. Nonessential off-farm visitors should not be allowed on the farm.

When off-farm vendors come on the dairy site, their visit should be recorded with visitor name, purpose, and time. Only essential personnel should be allowed in the tank room. Food delivery vendors should be organised on a pre-order basis, with currency exchange and delivery of orders taking place away from farm operations. Social visits by family members of workers should not be allowed on the farm.

**10. A single entry/exit to the farm** should be maintained continuously to control nonessential workers or visitors from gaining access to the farm.

**11. Inquire if there are family or friends** of workers that would be interested in filling roles in case of a shortage due to COVID-19. Students on extended break or completing online courses the balance of the school year may be an option in this situation.

*-The essay has been considered as a winner at the International Veterinary Students' Association, Bangladesh and is published by permission of authors.*



# Protein nutrition for cattle

By Muhammad Shahbaz Zafar<sup>1</sup>, Azhar Rasool<sup>2</sup>  
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Feedstuffs contain several sources of pure protein and non-protein nitrogen compounds. Proteins are large molecules that differ in size, shape, function, solubility, and amino acid composition. It is essential to keep in mind that amino acids and not protein are the nutrients required by ruminants. Absorbed amino acids are vital nutrients for maintenance, growth, health, reproduction, and lactation. They are used mainly as building blocks for protein synthesis and precursors for glucose and fatty acids synthesis. More specifically, amino acids are involved in tissue growth and repair, enzymatic activity, transport of molecules, genetic storage, immune function, and cell differentiation. Therefore, supplying adequate amounts of amino acids is necessary to maintain basal metabolism in ruminants. The goals of protein nutrition in ruminants are to provide minimum amounts of dietary crude protein (CP), and adequate amounts of rumen degraded protein (RDP) for optimal ruminal efficiency and microbial CP production. This extension article will provide some basic concepts associated with protein nutrition in cattle, aiming to help beef producers on detecting and designing nutritional strategies to enhance cattle performance and, consequently, productivity and profitability of beef operations.

### Measures of Protein:

In contrast to energy, which cannot be quantified in absolute values, feed content, and cattle requirements for protein can be quantified in weight scales. Protein requirements for cattle are generally shown as grams per day (i.e. g. of CP/d), whereas protein concentration in the diet is described as % of food Dry Matter (DM).

**1. Crude Protein (CP)** - Generally, CP concentration in feedstuffs is calculated using the nitrogen. This definition assumes that the average N concentration of a protein molecule is 16 %. Crude protein can be divided into rumen undegraded protein (RUP) and RDP, including the non-protein N.

**2. Natural (or True) Protein**-Protein constituted by amino acids. It differs from non-protein nitrogen, which does not have an amino acid profile but can be used as a nitrogen source by ruminal microorganisms.

**3. Non-protein N (NPN)** - Generally, this group is represented by nucleic acids and ammonia. The most well-known NPN compound used for cattle nutrition is urea. These compounds (NPN) are quickly degraded and converted into microbial protein by the rumen microorganisms.

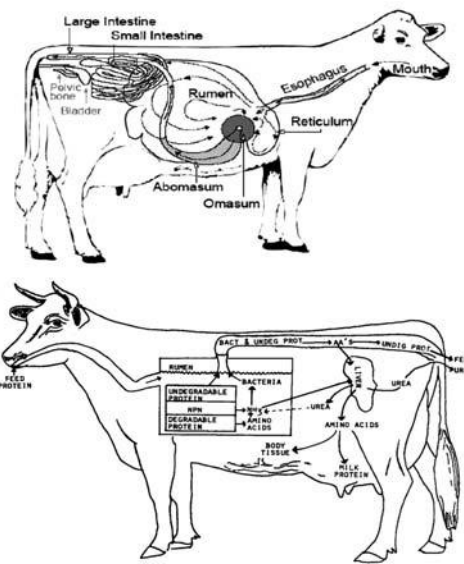
### Two main factors support the use of NPN in cattle diets:

1. Nutritionally, it adjusts the RDP amount in the diet
2. Economically, NPN is less expensive compared with natural protein sources.

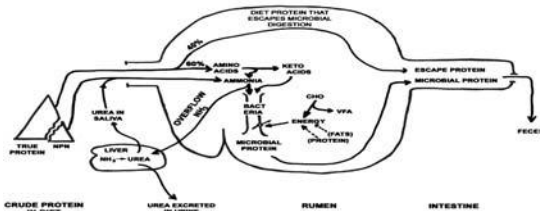
**Rumen Degraded Protein (RDP)** - After entering the rumen, this fraction provides a mixture of peptides, free amino acids, and ammonia that are used by microorganisms for growth and synthesis of microbial protein, which is the essential protein source for the ruminant and supplies the majority of amino acids entering the small intestine.

**Rumen Undegraded Protein (RUP)** - It is the second most important source of absorbable amino acids to the animal. It represents the protein that enters the intestine without any

### The digestive system of a cow



### Protein (nitrogen) utilization by the ruminant



Sr.No.	Item	Significance	Unit	Example
1)	CP	Total N x 6.25	% of DM	16% of DM
2)	RDP	Rumen degraded protein	% of CP	64% of CP
3)	RUP	Rumen undegradable protein	% of CP	36% of CP
4)	MP	Metabolizable protein/protein digested in the small intestine	g/d	1934 g/d
5)	NPN	Non-protein nitrogen		
6)	Sol.Prot.	Soluble protein	% of CP	34% of CP

### Naturally Protected Proteins (NRC, 1985; Dutta et. al., 1997)

Sr.No.	Feed	RUP%
1.	Maize (grain)	65
2.	Barley	21 ( 11-27)
3.	Sorghum	52
4.	Bajra	68
5.	Oat grain	14-20
6.	Wheat grain	20-36
7.	Cotton seed meal	41-50
8.	Linseed meal	11-45
9.	Ground nut meal	30
10.	Rapeseed meal	23
11.	Soybean meal	28 ( 15-45)
12.	Sunflower meal	24
13.	Subabul	51 - 70
14.	Blood meal	76 - 82
15.	Fish meal	71 - 80
16.	Meat meal	53 - 76
17.	Brewers dried	53
18.	Corn gluten	53
19.	Wheat bread	29
20.	Corn silage	27
21.	Rice straw	63
22.	Para grass	52
23.	Cow pea	32 - 45
24.	Berseem	37 - 52
25.	Alfa-Alfa	28
26.	Wheat straw	45

previous modification in the rumen and then can be absorbed or not by the animal's gut. Feeds containing high RUP concentrations include heat-treated soybean meal and cottonseed meal.

**Endogenous CP** - Comprised of salivary and digestive secretions of ruminants, as well as sloughed epithelial cells.

**Metabolizable Protein (MP)** - It represents the total amount of protein absorbed by the animal, and it is supplied by the diet (RDP and RUP), microbial CP (MCP), and to a much less extent, endogenous CP.

**Microbial Crude Protein (MCP)** - The most important protein source for cattle, supplying from 50 to 100% of the daily MP required by the animal. Microbial crude protein, which is mainly originated from bacterial source (about 90%), is the protein content of ruminal microorganisms that pass and are absorbed by the small intestine. Previously, CP was the standard measure for protein analysis, but since 1989 MP is being used as standard protein measure mainly because of 2 factors:

- 1) More information is becoming available about the MP system (MCP and RUP), which allows more accurate predictions of these factors,
- 2) The CP system is based on an invalid assumption that all feedstuffs have an equal extent of protein degradation in the rumen, with CP converted to MP with the same efficiency in all diets.

### Importance of Protein for Cattle Production

Protein is essential for many functions in the animal's body. With inadequate protein intake, vital organs, and systems, including mammary gland activity, reproductive and immune functions do not operate properly. More specifically, for the ruminant, adequate-protein level (> 7% CP) in the diet is required for maximal growth and activity of ruminal microorganisms, thus producing desired MCP amounts and maximizing ruminal fermentation. In contrast, feeding diets with protein content < 7% CP may result in impaired growth of ruminal microorganisms, fermentative functions, ruminal synthesis of MCP, and amount of MCP absorbed in the small intestine. This is extremely important because MCP is the primary protein source for ruminants, and inadequate protein levels may negatively impact the animal's ruminal function, performance, and subsequent productivity. Moreover, the protein amount and the type of protein (RDP vs. RUP) in the diet are significant for the rumen microorganisms, given that RDP is used by rumen microorganisms for MCP synthesis. In contrast, RUP is absorbed in the small intestine without ruminal modification. The balance between these two types of protein is critical, and in diets where protein is not limiting microbial growth and ruminal functions, feeding RDP in excess may not further benefit may harm the ruminal environment and the animal.

**1. Maintenance** - Adequate protein nutrition is required for maintenance of homeostasis, given that protein is needed for several functions of the body. The maintenance requirements for protein are estimated in MP, the number of amino acids available for absorption in the small intestine and comprises MCP, RUP, and endogenous CP.

**2. Growth** - The amount of amino acids required for growth depends on factors, including breed, sex, nutritional management, body condition score (BCS), production level, and animal age. Protein is required for adequate tissue accretion

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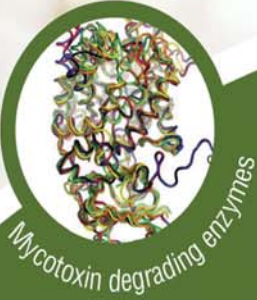


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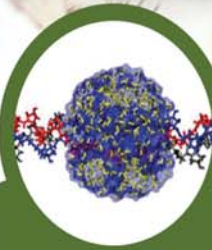
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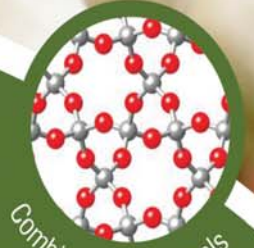
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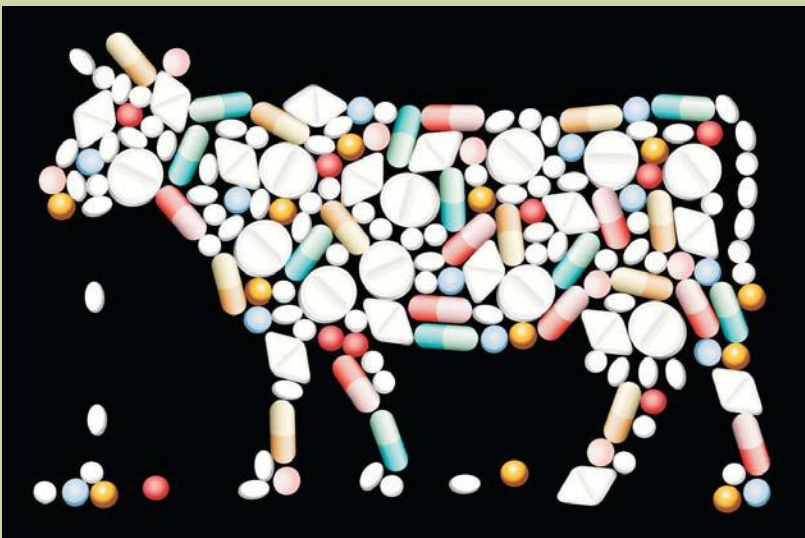


# Antibiotic resistance and veterinary practice in Pakistan

**By Bilal Haider**  
*College of Veterinary & Animal Sciences (UVAS Campus), Narowal*

Antibiotics are substances or drugs that are used for preventing and treating infections. This can be caused by certain bacteria or pathogens in people, animals, and crops. The first antibiotic, 'penicillin,' was discovered by Alexander Fleming in 1928. Since then, antibiotics have altered modern medicine and salvaged millions of peoples. Types of antibiotics include penicillins, tetracyclines, cephalosporins, quinolones, lincomycins, macrolides, sulfonamides, glycopeptides, aminoglycosides, and carbapenems. Some are highly specific and are only effective against particular bacteria. Broad-spectrum antibiotics affect a wide range of bacteria. They affect bacteria by retarding the reproduction of bacteria, or they cause the death of bacteria. Antibiotic resistance occurs due to changes or mutation or in the DNA of bacteria or the acquisition of antibiotic resistance from other bacterial species through horizontal gene transfer. Following are the leading causes:

1. Blind use of antibiotics and also misuse of antibiotics leads to the evolution of mutated genes. Lack of awareness and the use of old syringes and expired medicines.
2. Poor quality of drugs and the presence of antibiotic residues in milk of high producing animals and their spread to the environment is also a cause. The development of new antibiotics has played a more significant role in resistance.
3. Doctors do not work in the field as there is a lot of burden on them in the hospital. The government also has no law and order to control quacks, and they are using the wrong antibiotics. They even do not know about the dose rate and do the only symptomatic treatment. Moreover, there are fewer veterinary hospitals and few doctors. They also use antibiotics in viral diseases. They do not perform a blood test and others to confirm the condition. Now we talk about the impacts of antibiotic resistance. It has economic effects on the public, patients, ecosystem, food chain, healthcare providers, and pharmaceutical industries. It increases the duration of treatment, the dosage of medication, and, more importantly, rendering otherwise effective antibiotics



ineffective. Standard medical procedures would become extremely risky, and even a simple cut could kill. In many cases, antibiotic-resistant infections lead to prolonged and costlier medical treatments, extended hospital or rehabilitation stays, additional doctor visits, and death. Now we talk about the solutions. Only use antibiotics when prescribed by a certified health professional. Never demand antibiotics if your health worker says you don't need them. Always follow your health worker's advice when using medicines. Never share or use leftover antibiotics.

Improve surveillance of antibiotic-resistant infections. Strengthen policies, programs, and implementation of infection prevention and control measures. Regulate and promote the appropriate use and disposal of quality medicines. Make information available on the impact of antibiotic resistance. In short, resistance against frequently used antibiotics is increasing day by day. The government should take action against quacks and make more hospitals and appreciate doctors. By taking above all steps, we can control antibiotic resistance.

## General anesthesia

**By Maryam Korejo**  
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General anaesthesia is a state of controlled oblivious; it is a combination of medications that put you in a sleep-like state before surgery or other medical procedure. Under general anaesthesia, you don't feel pain because you were utterly unconscious. It is essential for some surgical procedures where it may be safer or more comfortable for you to be unconscious. It's usually used for extended operations are those that would otherwise be very painful. The purpose of general anaesthesia is to allow the patient to operate in without suffering pain, utilizing the administration of anaesthetic drugs intravenously and by inhalation, thus attaining maximum, safety, comfort and monitoring during surgery.

**Composition:**

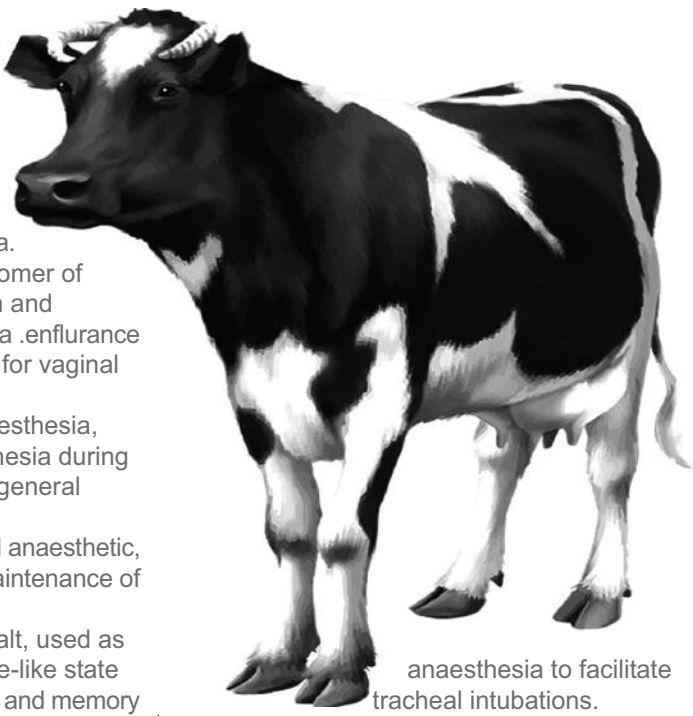
The most common modern general anaesthetic are mixtures of inhalable gases, which include nitrous oxide (laughing gas) and various derivatives of ether, such as isoflurane, sevoflurane, and desflurane.

**Drugs for general anaesthesia:**

- **Atracurium besylate:** is a medication used in addition to other Medication to provide skeleton muscle relaxation during surgery or mechanical ventilation.
- **Cisatracurium Besylate:** It is a non-depolarising skeleton neuromuscular blocker for intravenous administration compared to other

neuromuscular blocker s, it is intermediate on its onset and duration of action.it is a neurovascular blocking agent, used as an adjunct to general anaesthesia.

- **Enflurane:** It is a structural isomer of isoflurane, prescribed for induction and maintenance of general anaesthesia .enflurane may be used to provide analgesia for vaginal delivery.
- **Desflurane:** It is general anaesthesia, prescribed for induction of anaesthesia during surgery. Used for maintenance of general anaesthesia.
- **Halothane:** It is an inhalational anaesthetic, prescribed for the induction and maintenance of general anaesthesia.
- **Ketamine:** Its a hydrochloride salt, used as an anaesthetic. It induces- a trance-like state while providing pain relief, sedation, and memory loss.
- **Hyoscyamine:** It's an anticholinergic agent, used as a pain killer (belladonna alkaloid ), it blocks cardio-vagal inhibitory reflexes during anaesthesia induction and intubation, used to relax muscles.
- **Methohexital:** It's a barbiturate anaesthetic, prescribed for inducing anaesthesia before surgery.
- **Propofol:** it is a general anaesthetic, prescribed for induction and maintenance of general anaesthesia.
- **Rapacuronium:** it's a neuromuscular blocker, specified as an adjunct to general



- anaesthesia to facilitate tracheal intubations.
- **Rocuronium:** it is a neuromuscular blocker, prescribed as an adjunct to general anaesthesia for muscle relaxation and to provide skeletal muscle relaxation during surgery or external breathing.
- **Sevoflurane:** it is a halogenated hydrocarbon, acts as a general anaesthetic during surgery either alone or combined with other medications. It is given by inhalation. This helps to produce more effective anaesthesia in some patients.
- **Succinylcholine:** it is a depolarizing muscle relaxant, used for induction and maintenance of general anaesthesia.



# Unemployment: Causes, outcomes and solutions in Pakistan

By **Khalid Mehmood**  
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Unemployment is a vital indicator of the economy of any country. It is a topic that depicts all the developmental and destructive stages of that country. A country with a maximum rate of unemployment means that the country's goods production level is low from the standard requirement because unemployed persons consume more things to survive their life without doing work. When persons remain free for a long time, then their potential to act also declines. Therefore pressure increases in that country, and investors don't take the risk to invest money. While on the other hand, a country with a low rate of unemployment means their people have more opportunities to work, and they produce maximum things for their country to export all over the world. This country becomes a developed country, and people enjoy their lives with a little bit of stress. According to economists, unemployment can be defined as "a situation in which the workers who are capable of working and willing to work do not get employment."

There are two broadest categories of unemployment:

**1. Voluntary unemployment:**

It is a type of unemployment in which persons resigned their jobs to make a better position in replacement of the previous one, which is known as voluntary unemployment. Their ratio in Pakistan is not more than involuntary unemployment.

**2. Involuntary unemployment:** There are two broadest categories of unemployment:

1. Voluntary unemployment: It is a type of unemployment in which persons resigned their jobs to make a better position in replacement of the previous one, which is known as voluntary unemployment. Their ratio in Pakistan is not more than involuntary unemployment.

2. Involuntary unemployment: It is a type of unemployment in which a person has been fired or laid off. This is known as involuntary unemployment. Involuntary unemployment more in Pakistan as compared to voluntary unemployment. On the other hand, in the USA, more than 2 lakh workers are fired from their job during coronavirus outbreak.

**Causes of unemployment**

Pakistan lacks good governers qualities, a governers that talks for the youth welfare and provide



maximum job opportunities. Corruption is the main factor that can break the backbone of the economy of any country. In 2008, Pakistan was ranked as the 46th most corrupt country out of the world's 180 countries. In Pakistan political issue is at its peak level. Political instabilities are the main obstacle for investors to invest their capital. The economic cause is a leading cause behind unemployment in Pakistan because there are a low industrial growth rate and fewer job



system is also a significant cause of unemployment. I am very depressed by saying that our education system is not according to the standard level. Our education sectors are producing a circus bear

too essential for life in this era. Recession is defined as a temporary decline in the economy, trade, industrial products, and GDP of a country. In Pakistan, during 2019-2020, there is a decline in GDP from 2.2% to 1.3%. This is all due to the closeness of industries in Pakistan and also due to unemployment. This is a very critical situation for Pakistan as it was before the 68 years ago. Pakistan took a massive loan from the IMF this year. Public debt is high in certain countries like Pakistan and Sri Lanka. These two countries are on the vulnerable list of the IMF who got massive loans from the last year.

In the past, Pakistan was one of the countries from the world where tax revenue system was in the worst condition; only 0.57% of Pakistanis or 768,000 people out of the 190 million pay income taxes, in a routine. Not even a single case arose in our country in which we put a man into jail due to not paying taxes. But when the unemployment rate increases in a country, then the tax collection system further declined. Therefore the tax revenue system in Pakistan badly affected with unemployment

An action or omissions which constitute an offense and are punishable by the law.

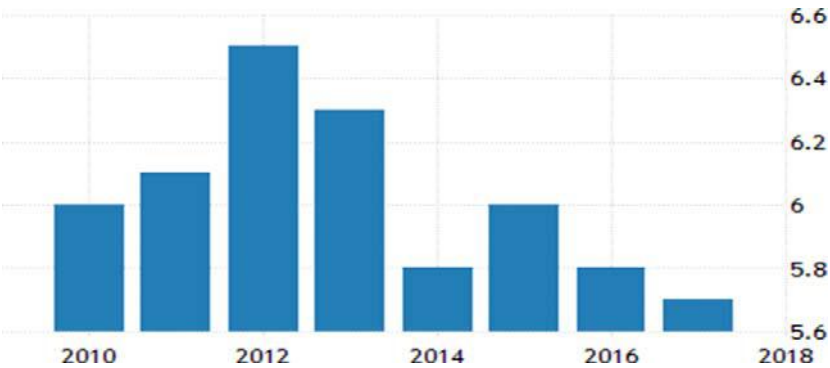
Unemployment is a leading force towards the crime. A person who has no work to do but his family demands money to buy foods, to buy clothes to wear, to buy household accessories and to pay education expenditures, then this person fulfills his family desires by getting money from any source either it is from the crime or by killing someone. The crime rate in Pakistan is fluctuating from the day of independence to till 2020. Unemployment was at its peak level at the time of 2008 to 2012. The crime rate during these days was also in the worst position, which 12.12%. While with time, this percentage declined. There are different crimes, like drug movement, money laundering, political violence, and terrorism. Pakistan's name comes in top list opium-producing country of Asia. Abuse can be defined as behavior involving physical force intended to hurt, damage, or kill someone or something. Good practice comes in a person having a relaxed mind

Continued on Page D

Unemployment rate in Pakistan

Sr. No#	YEAR	PERCENTAGE%
1	2000	6.3
2	2005	8.3
3	2010	15
4	2015	3.57
5	2019	3.02

Graph shows that how much unemployment rate is in Pakistan



opportunities for youth to avail. There were 34 industries on Independence Day of Pakistan in 1947 out of 921 sectors of the subcontinent. These 34 industries were outdated. Finally, we can say that a low industrial growth rate is a significant cause of unemployment.

The population growth rate in Pakistan is a maximum that is greater than 2.1%, and the important thing is that every year more than 2 million people increased for labor work. Karachi is the largest city of Pakistan, but people of Karachi violate government roles, due to this violence investors hesitate to invest their capital in Karachi city. The financial cause is a primary cause behind unemployment. Pakistanis face a shortage of wealth; they cannot develop their own business. Hence, a lack of credit facilities is a hurdle in their path.

We don't plan before we invest our capital in our business due to this flaw our all capital waste within month or year. The European people make a feasibility report before they start any work. Without a plan, work is like a car moving without fuel, which can stop at any time. The defective education

that is well trained but not well educated. Our boards tell us how to get marks but not focus on the skills that our study's primary preference.

**Outcomes of unemployment**

Unemployment is often devastating psychologically and financially on the persons who experienced it and for those who are dependent on it. It has a negative impact not only on the unemployed person but also to their family. There are many outcomes of the unemployment that relates to the individual level, economic, and social level.

The onset of unemployment causes a decrease in the spending power of the citizens. In 2019 statistics showed that Pakistan's household income per capita was 1,357USD. This amount in Pakistani currency was almost 221,835.57 rupees annually, and monthly it was about 18000 rupees. Due to unemployment, the pressure would be increased in the economy and also on the nation. Therefore, the people's spending power decreases, and they only consume their money on food items rather than on other things like cosmetics, house repairing, and other accessories, which are



# Pandemics (Introduction, origin and prevention)

**By Dr. Muhammad Talha Talib**  
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## Pandemics

- Define: Pandemics.
- Differentiate pandemic diseases from epidemic diseases.
- Reference from recent pandemic disease.
- Origin of pandemic diseases.
- Phases of Pandemic Alert System.
- Steps to limit the emergence pandemics.
- Prevention or management of future pandemics.

## Pandemics:

- ✓ Pandemic literally means "pertaining to all people."
- ✓ According to WHO, the widespread of a new disease is called Pandemics.
- ✓ Actually, the pandemic diseases occur worldwide crossing the international boundaries and affect a large number of people in the world.
- ✓ In short, a pandemic is an epidemic on a global level.

## Affects of Pandemics:

- ✓ Affects a wider geographical area, often worldwide.
- ✓ Infects a larger number of people.
- ✓ Often caused by a new virus or a new strain of virus that has not circulated within people for a long time.
- ✓ Humans have little to no immunity against the virus and it spreads quickly.
- ✓ Causes more deaths.
- ✓ Often creates social disruption and economic loss.

## The number of lives lost in a pandemic depends on:

- ✓ How many people are infected
- ✓ How severe of an illness the virus causes (its virulence)
- ✓ How vulnerable certain groups of people are
- ✓ Prevention efforts and how effective they are

## EPIDEMICS VS PANDEMICS

Epidemics	Pandemics
✓ Epidemic comes from the Greek word <i>epidemi</i> which literally means "prevalent within the country."	✓ Pandemic comes from the Greek word <i>pandemos</i> which literally means "pertaining to all people."
✓ An epidemic is defined as "An outbreak of disease that spreads quickly and affects many individuals at the same time."	✓ A pandemic is defined as "An outbreak of a disease that occurs over a wide geographic area and affects an exceptionally high proportion of the population."
✓ The World Health Organization (WHO) further specifies <i>epidemic</i> as occurring at the level of a region or community.	✓ The World Health Organization (WHO) further specifies <i>pandemic</i> as occurring at the world wide level.

## Reference from recent pandemic disease:

### ANTONINE PLAGUE (165 AD)

- Death Toll: 5 million
- Cause: Also known as the Plague of Galen. The Antonine Plague is thought to have been either Smallpox or Measles, though the true cause is still unknown.

### PLAGUE OF JUSTINIAN (541-542)

- Death Toll: 25 - 40 million
- Cause: Bubonic Plague (Bacterium *Yersinia Pestis*)

### THE BLACK DEATH (1346-1353)

- Death Toll: 75 - 200 million

- Cause: Bubonic Plague (Bacterium *Yersinia Pestis*)

### THIRD CHOLERA PANDEMIC (1852-1860)

- Death Toll: 1 million
- Cause: Cholera

### FLU PANDEMIC (1889-1890)

- Death Toll: 1 million
- Cause: Influenza (Influenza A virus subtype H3N8)

### SIXTH CHOLERA PANDEMIC (1910-1911)

- Death Toll: 1 million
- Cause: Cholera

### FLU PANDEMIC (1918)

- Death Toll: 20 - 50 million
- Cause: Influenza

### ASIAN FLU (1956-1958)

- Death Toll: 1 - 2 million
- Cause: Influenza (Influenza A H2N2 subtype)

### FLU PANDEMIC / the Hong Kong Flu (1968)

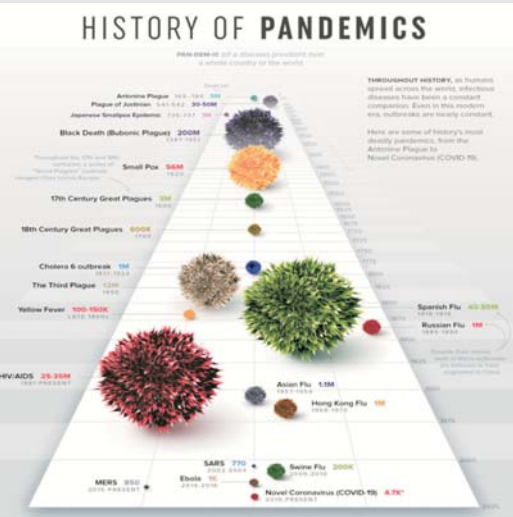
- Death Toll: 1 million
- Cause: Influenza (Influenza A virus H3N2 strain)

### HIV/AIDS PANDEMIC (1981-2012)

- Death Toll: 36 million
- Cause: HIV (Enveloped RNA Virus)

### COVID-19 (2019 - Present)

- Death Toll: Present Pandemic
- Cause: Corona Virus (RNA Virus)



## Origin of Pandemics:

- ✓ Most new pandemics have originated through the "zoonotic" transmission of pathogens from animals to humans. (Murphy 1998; Woolhouse and Gowtage-Sequeria 2005)
- ✓ Many historically significant zoonoses were introduced through increased human-animal interaction following domestication, and potentially high-risk zoonoses (including avian influenzas) continue to emerge from livestock production systems. (Van Boeckel and others 2012; Wolfe, Dunavan, and Diamond 2007).
- ✓ Some pathogens (including Ebola) have emerged from wildlife reservoirs and entered into human populations through the hunting

and consumption of wild species (such as bushmeat), the wild animal trade, and other contact with wildlife. (Pike and others 2010; Wolfe, Dunavan, and Diamond 2007).

- ✓ Most zoonotic pathogens are not well adapted to humans (stages 2-3), emerge sporadically through spillover events, and may lead to localized outbreaks, called stuttering chains. (Pike and others 2010; Wolfe and others 2005).

## Phases of Pandemic Alert System:

- The WHO's pandemic alert system ranges from Phase 1 (a low risk) to Phase 6 (a full pandemic):
- Phase 1:**  
A virus in animals has caused no known infections in humans.
- Phase 2:**  
An animal virus has caused infection in humans.
- Phase 3:**  
There are scattered cases or small clusters of disease in humans. If the illness is spreading from human to human, it's not broad enough to cause community-level outbreaks.
- Phase 4:**  
The disease is spreading from person to person with confirmed outbreaks at the community level.
- Phase 5:**  
The disease is spreading between humans in more than one country of one of the WHO regions.
- Phase 6:**  
At least one more country, in a different region from Phase 5, has community-level outbreaks.

## Steps to limit the emergence of pandemics:

- We cannot stop the emergence of any pandemics but we can reduce the chance of pandemics by following three steps.
- ✓ Stop Wildlife trade.
  - ✓ Stop Wildlife consumption.
  - ✓ Stop destroying nature.

## Prevention or management of future pandemics:

- If we want to successfully prevent or manage future outbreaks, we must invest in primary healthcare.
- I firmly believe that we should work on following points.
- ✓ The expansion of public-private partnerships (PPPs).
  - ✓ The adoption of new technologies.
  - ✓ The training of healthcare workers.

## For Further Information:

### Follow the books:

- **Pandemics: A Very Short Introduction**
- by Christian W. McMillen
- **Faith Reason and the Plague Paperback** by Carlo Cipolla
- **Clearing the Plains New Edition: Disease, Politics of Starvation, and the Loss of Indigenous Life 2nd ed. Edition** by James Daschuk





# Some food toxic to cats & dogs

By Inam Ullah Yasir<sup>1</sup>, Kamran Sajid<sup>1</sup>,  
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According to world statistics, dogs and cats are the species that owners most frequently seek assistance with potential poisonings, accounting 95-98% of all reported animal cases. It has been reported that majority of animal's cases are acute in nature and accidental, these animal poisonings cases occur at animal owner's house or near the animal owner's house. There are many types of foods which are edible for humans even for other species but giving those foods to cats and dogs can be the potential source of poisoning because of their different metabolism e.g. chocolate, caffeine and other methylxanthines, raisins, grapes, garlic, onion, nuts, avocado, alcohol etc. Animal poisoning depends upon potential for the animal to be exposed to the agent, what is available in the animal's environment, amount of agent to which the animal to be exposed and the individual sensitivity of the animal to the effects of the agent. Dogs and cats are snooping by nature, particularly when it comes to food. However, there is a difference of occurrence of poisoning in cats and dogs due to their different behavior. There are more number of food toxicity in dogs than cats.

## Chocolate Toxicity:

Chocolate is one of the famous household item especially found around certain holidays. Pet owner and pet both may love chocolate but it should be kept in mind that chocolate can be harmful for pet even it is potentially fatal for pets especially for smaller dogs. Chocolate is produced from the theobroma cacao beans. First of all theobroma cacao beans are fermented, after fermentation they dried and at the end they roasted. Removal of its shell is performed after roasting, after this cocoa mass is formed from the remaining nibs which are grounded. Liquefaction of the cocoa mass produce chocolate liquor then it is processed to form cocoa butter and cocoa solids. There are different types of chocolate available in market i.e. white chocolate, brown chocolate and dark brown chocolate etc. Percentage of cocoa solids in chocolate define its type. Methylxanthine alkaloid theobromine is major toxic component in chocolate and it is present in chocolate 3-10 times higher as compared to caffeine present in chocolate. Sweet foods including cake and biscuits also contains chocolate. Sweet foods are considered the most common source of chocolate toxicity in companion animals. Foods coated with chocolate such as

nuts, raisins and coffee beans also show additional hazards. Restaurant and processing waste containing cocoa is also a potential source of toxicity in other animals. Cocoa mulch which is used in gardening is made of cocoa shells, is also source of toxicity because it is a potential source of theobromine. Some toiletries and cosmetics contains cocoa butter. They are not much like to cause theobromine toxicity because they contain very little amount of it. Chocolate ingestion is very common in dogs but it has also been reported in red fox (*Vulpes vulpes*), cattle, cats, rodents, birds, a European badger (*Meles meles*) and rabbits.

## Toxic Dose:

Chocolate toxicity in pet animals depend upon various factors like sensitivity of pet to chocolate, ingestion of chocolate on an empty stomach, size of the pet and type of species, amount of chocolate ingested and the type of chocolate. Ingestion of dark chocolate cause more toxicity as compared to white chocolate. If white chocolate is consumed by dog in larger quantity than it can cause serious problem. Obviously, smaller dog needs less to eat. However, Letahl dose (LD50) of theobromine and caffeine is 250-500mg/kg for dogs and LD50 of theobromine for cat is about 200mg/kg ([www.actionagainstopoisoning.com](http://www.actionagainstopoisoning.com)). A dog having bodyweight 10 kilogram can be seriously affected if it eats 125 gram of cooking chocolate or about 63 gram of cocoa powder because these types of chocolate contains higher amount of theobromine as compared to milk chocolate. If dog eat >250 gram of milk chocolate than it will be affected. A typical dog having bodyweight 20 kilogram will express intestinal distress if it eats < 240 gram of dark chocolate and to express tachyarrhythmia or bradycardia it needs to ingest about 500 gram of milk chocolate (Kovalkovi?ová et al. 2014). According to Merck Veterinary manual (1998), baker's chocolate @ 1.3 gram/ kg bodyweight is enough to show the symptoms of toxicity.

## Preventive Measures:

There is no single laboratory analysis aid to diagnose a toxicity in an emergency condition. So, preventive measures are the best tools to avoid chocolate toxicity in pets. Keep chocolate out of the range of the pet, if you have chocolate or any product containing chocolate in your house. If you suspect that pet has eaten the chocolate, identify the amount that pet has eaten (i.e. it can be estimated by the empty wrappers) and the type of the chocolate. It will be useful to treat the pet. Pet can die if treatment is delayed, if you suspect that your pet has eaten the potentially equivalent to toxic dose, take it to your veterinarian for supportive treatment straight away.

## Onion Toxicity:

Scientific name of onion is *Allium cepa*. Onion,

leek, garlic, chives and shallots etc are included in genus *Allium*. Plants included in genus *Allium* release strong odour when they are crushed. People thought that this odour is linked to allicin and other oil soluble Sulphur containing compounds. This strong odour help people to distinguish these plants from other poisonous plants which are morphologically similar to them. People use these plants in many dishes worldwide. All forms of onion including dehydrated, cooked or raw onions and table scraps containing cooked onions can cause danger to the health of cats and dogs. These plants are also used traditionally for various health purposes. These plants are rich basically in two chemicals, one is flavonoids and other is alkyl (contain double bond) cysteine sulfoxides. Onion has antidiabetic, antiasthmatic, anticarcinogenic, antithrombotic, hypocholesterolemic, fibrinolytic, antibiotic and antiplatelet characteristics. All *Allium* spp and their derivatives can be toxic to cats and dogs. However, few *Allium* spp are considered more toxic to cats and dogs. Onion, leek, garlic and chives are more commonly involve in toxicity cases in cats and dogs. Onion contains toxic component which may break RBCs (Red Blood Cells) and cause hemolytic anemia in cats and dogs and including other animals such as sheep, horses and water buffaloes. Dogs have low catalytic antioxidant activity and in cats normal hemoglobin is 2-3 times more vulnerable to oxidative damage as compared to other species. That's why cats are more vulnerable to onion toxicity than dogs. Although dogs are one of the most susceptible spp but there are few cases reported in scientific literature concerning accidental canine poisoning linked with onion ingestion. During a research study in 1930, onion toxicity was recognized in dogs. Onion, leek, garlic and chives are commonly available at homes and they are easily accessible to cats and dogs. So, they can easily create clinical problems. *Allium* spp contains various organosulfoxides compounds. Di-propyl-disulfide and allylpropylisulfide present in onion can induce hemolytic anemia. N-propylthiosulfate and N-propyl disulfide are most toxic components that are present in onions. Recently, a more active oxidizing sulfur containing compound have been reported in both onion and garlic toxicity. In another research, researcher proved that sodium n-propylthiosulfate (Obtained from boiled onion) has the potential to cause hemolytic anemia in dogs by increasing Heinz-body formation in RBCs.

## Toxic dose:

Ingestion of 15-30 gram/kg of onions in dogs and about 5gram/kg in cats cause clinically important hematologic changes (Cope, 2005). Onion toxicosis can be steadily noted if dogs ingest

*Continued on Page D*



Unemployment: Causes ...

Continued from page A

without any worries. Unemployment puts pressure on the brain and attitude of a person changes, so, he violates all the laws of the government.

Suicide cases due to unemployment in Pakistan was reported, which showed that 136 person suicide because they were unemployed, 193 disputes within families, 74 rejection of marriage, and 97 because of poverty. The health issue is a fundamental issue that cannot be replaced with anything. Unemployment is a front line factor for the poor health of Pakistanis people because they cannot afford a balanced diet; they face problems of unhygienic conditions and polluted environment. In Pakistan, 25% of studies conducted that showed that >70% prevalence of goiter disease in Pakistan is due to the iodine deficiency in children. All these problems, like malnutrition, a balanced diet, unhygienic conditions, and medical facilities, aggravate unemployment's primary outcomes. In Pakistan, most of the people don't have considerable savings in their bank account. On the government level, most workers' wages are almost on an average of 15000 rupees monthly. In this income, they have to pay their bills, food expenditures, and to buy miscellaneous things. In 2015 news revealed that 24% of people spent their lives in poverty. Some of them were living in rural areas while some in urban areas. As the unemployment rate increases, then little savings of Pakistanis will be finished, and poverty will ultimately be extended. Tension is an outcome that is produced when a person mentally disrupted, and this mental disruption comes when a person has no work to do. In the past 85 people passed away due to job tension in their homes in Pakistan

Unemployment hurts the physical and mental health of the people. They like to live in isolation and loss of social network and support. Employment makes our brain stimulation and social connection broadened because of this, but on the other hand, unemployment causes losing a sense of being in control of their destiny. Unemployment provides a path to decline in confidence and courage to do anything. Long term unemployment causes loss of skills over time. Skills come with practice and determination, but unemployment spoils all these qualities of a person experienced in it.

**Solutions of unemployment for Pakistan**

All plans and strategies which can change unemployment into employment, these plans, and procedures are known as remedies or solutions of unemployment. .Social and economic measures are required to solve this issue. I think a single individual cannot change this country's fate. It is teamwork in which the government sector, the private sector, and the public sector, make a triangle that can be fruitful for our country to solve unemployment problems. There are the following ways that can reduce unemployment in our country.

It is a dire need of our country to do adequate planning regarding the resources of Pakistan. We should search for natural resources, build more industries, and follow the modernization in the agriculture sector. Modernization in the agriculture field can stop the movement of people from rural areas to the urban areas, and pressure on cities will be decreased. Self- employment is a pivotal remedial factor to control unemployment in Pakistan. The government should provide loans to jobless persons so that they can build up mini industries. Cottage and agro-based industries should construct because these industries are profitable in Pakistan. The education system of our country is not up to the mark. The following measures should adopt to promote the education system:

1. Updated and authentic curriculum
2. Coordinated study & group discussion
3. Collaborative planning and professional development
4. Performance assessment based marks
5. Knowledgeable and skilled teachers
6. Anti-racist teaching method

The good governess is a word that only uses in talks of our leaders, but practically it is far away from our country boundaries. Our governess system should be,

1. Accountable
2. Transparent
3. Responsive
4. Effective
5. Efficient
6. Equitable
7. Inclusive
8. Follow the rules of law

Our country must be in a list of those countries where good governess prevails so that people maintained their lives in the fluctuating environment of Pakistan. Our country leaders

should work in a coordinated way because due to political instabilities, investors leave those countries and the unemployment rate increases. The population growth rate in Pakistan is higher than 2.1%, as discussed. As the population increases, then pressure on the state also increases. This is a long term process, and much time is required to solve this issue. Hence, family planning is a vital factor to control unemployment. The employment exchange program is essential to reduce frictional unemployment. In this case, the government should provide individual seats for the women in an organized sector. By doing this act, national income enhanced, which would be favorable in the future.

**Conclusion**

Unemployment creates adverse effects for unemployed workers as they are jobless and employed as they are less secure in keeping their jobs. In Pakistan, its rate is increasing day by day. Many people are unemployed and just spending their time on leisure activities. It is a dire need that the government should create mini-jobs opportunities for the people. There should be proper career counseling before the selection of specific fields. On the government level, particular agencies for career counseling should be organized. We should be an exemplary nation that must be worked in an integrated or collaborative form. Let's join all sectors, government, private, and public sectors for the development and progress of our beloved country.

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**Some food toxic to ...**

*Continued from page C*

onion >0.5% of their bodyweight. Dosage about 590-800gram can cause hemolytic anemia (Robertson et al., 1998). In affected dogs, concentration of oxidized glutathione in RBCs increase 10 folds after the administration of the compound, whereas in normal dogs there is almost no change.

**Preventive Measures:**

Sometimes, people give baby food to cats to increase their hunger, if cats are not eating. It has been seen that various baby food manufacturers add onions or onion powder to increase deliciousness. Try to avoid the supply of baby food to cats. There is concern that onion powder can cause hemolytic anemia. Avoid exposure of any kind of Allium spp and it is considered the best preventive health strategy. Avoid to feed cats and dogs with allium containing food.

**Garlic Toxicity:**

It has been reported in the case that garlic induced hemolytic anemia can produce hypertension in dogs. Scientific name of garlic is allium sativum. Garlic is less toxic than onion and it is considered safe for dogs if used in balance.

Pharmacologically active agents in garlic are ajoene and allicin. Ajoene and allicin have vasodilators, hypotensive and potent smooth muscle and cardiac muscle relaxants characteristics. In one research study, Lee et al. (2000) to know that can garlic induce hemolytic anemia. Dogs were provided with garlic extracts @ 1.25ml/kg of bodyweight and whole garlic @ 5gram/kg of bodyweight once in day for seven days. Concentration of hematocrit, erythrocyte count and hemoglobin decreased to a minimum value on days 9-11 as compared with initial values. However, no dog developed hemolytic anemia. Garlic induced hemolysis in dogs can be easily diagnosed by Eccentrocytosis. Ajoene and other organosulfur compounds derived from onion and garlic show antithrombotic properties. Thus, antithrombotic and hypotensive properties can impair oxygen transportation and physiological effects of anemia. Unmature garlic preparations can cause direct damage to ileal and gastric mucosa, as a result diarrhea and pain occur.

**Grape Toxicity:**

Grapes are one of the largest fruit crops in the world. Vitis vinifera is the main spp cultivated. In 2001, canine grape toxicity was reported in America and in 2003 was reported in Europe. Many cases of acute renal failure due to ingestion of grape or raisin have been reported in dogs regardless of their sex, age and breed. It has been expected that about 50% dogs develop kidney failure after the ingestion of grapes or raisins. Once the kidneys failure occur, prognosis is poor. In these reported cases, there was no difference in toxicity by grape color or type (raisin, sultana, raw, crushed, fermented and currant). It means each types of grape can cause toxicity. There is a risk of accidental exposure of grape to cats and dogs. Both pet owners and veterinarian should clearly understand this. Early detection is always important to

facilitate clinical recovery. Dogs have usually low capability to metabolize natural plants than humans and other omnivores. It is unclear that problem of kidney failure is new or old in dogs. Grape toxicity cause illness or death in dogs affected by grape toxicity.

**Toxic dose:**

There is no specific peer-reviewed or scientific published toxic dose. Raisins are more concentrated than grapes, it is the reason that raisins are more toxic than grapes. Small amount of raisins is enough to cause toxicity in dogs. Some recent studies shows that animals were reported asymptomatic after the ingestion of up to 1kg of raisins while others die following the ingestion of just a handful. Some published case reports have identified renal failure in dogs following the ingestion of estimated doses of raisins as low as 2.8mg/kg and as little as 4 to 5 grapes in dog weighing 8.2kg.

**Preventive Measures:**

If you suspect that your dog has ingested grape or its any type, immediately contact your veterinarian or pet poison helpline if your city has this type of service. We know that its toxic mechanism is still unknown, however, it is better not to take any chance when it comes to your pet's life. Sooner the toxicity is diagnosed, sooner it will be treated. Recovery of affected dog depends on many factors including:

- How soon the treatment was initiated
- How soon the patient was decontaminated
- Whether or not the patient has already developed kidney failure
- Whether the clinical signs improved once treatment was started

Do not share any food that contains grape or any other type, especially never use grape as treat for your dog.

**Avocado Toxicity:**

Avocado's leaves and fruit contain a fungicidal toxin called as Persin. It has been recently isolated. Persin has the potential to damage the cancerous cells of breast and it has ability to increase the effect of tamoxifen (drug used in breast cancer). Persin present in avocado has the ability to reduce the essential dosage of drugs required to treat cancer. However, persin is highly insoluble and more research is required to convert it into a soluble tablet form. There are various varieties of avocado including its seeds, fruit and leaves which are reported toxic to cats and dogs. Avocado seeds have the ability to cause the blockage of intestine in dogs and it will require surgery to remove them. Avocado can also show toxicity to other spp i.e. goats, cattle, rabbits, rodents, birds, horses and fish etc. Birds and rodents are more sensitive to avocado toxicity. Fluid accumulation around heart and difficulty in breathing are associated with avocado toxicity. Some ingestion may be even fatal. Goats and sheep can develop cardiac-failure syndrome if they are poisoned with its Fuerte strain. According to (putative avocado toxicity in two dogs) two dogs presented with ingestion of Fuerte variety of avocado had developed a syndrome identical to cardiac-failure syndrome in goats and sheep. Necropsy of both dogs showed that cardiac muscle were implicated.

**Preventive Measures:**

It is recommended that feeding avocados should be completely avoided to any animal.

**Toxic Dose:**

LD50 is still not known. However, its toxic effects varies according to spp.

**Macadamia nuts Toxicity:**

These nuts originate from the trees Macadamia tetraphylla and Macadamia integrifolia. Exact mechanism of Macadamia toxicity is not known because we do not know the toxic agent which cause toxicity. Both raw and roasted form of these nuts can cause toxicity. However, Macadamia nuts toxicity may involve mycotoxins or processing contaminants. According to Hansen et al. (2000) toxic dose of Macadamia nuts to dogs range from 2.4-62.4 gram per kg of bodyweight. It means in some dogs ingestion of small amount of Macadamia nuts can cause toxicity, while other dogs need its large amount. Dogs are the only species in which signs have been reported. Macadamia nuts toxicity in dogs affects nervous system, digestive system and muscles. However, its toxicity can also cause weakness, tremors, swollen limbs and locomotory difficulties in dogs. Mortality due to Macadamia nuts has not been reported. They are commonly present in cookies, so pet owners should be careful what they feed to their dog.





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# Desert locust scourge in Pakistan: From Beijing duck to Okara chicken feed

By Dr. Tasneem Ahmad

Former Director General DPP

*"Diclofenac, cow aspirin, given to cattle as a muscle relaxant, to ease pain and increase the production of milk, works-worked-like nerve gas on white-backed vultures. Each chemically relaxed, milk-producing cow or buffalo that died became poisoned vulture bait."*

**- Arundhati Roy,**  
The Ministry of Utmost Happiness

**I**t was 2001-02 when we first time visited P R China in relation to a training course related to plant quarantine and phytosanitary measures with assistance extended by Chinese government. We were a team of three delegates and stayed there for about three weeks. Many cities and seaports were shown by the hosts with the help an interpreter, a kind lady fluent in English translation. During stay in Beijing we heard about well-known Beijing duck a special cuisine dish and we wished to taste the historical specialty of Chinese friends. With some struggle, a Muslim restaurant was searched and with some difficulty, we were able to get them understand, the food we wanted to eat. We waited very anxiously for cooking and serving of the Beijing duck, however when tasted the meat was found too oily to eat and moreover it was duck and not desi chicken. Even then we cannot object on eating habit of any nation, it is their tastes in cuisine specialties.

The above Beijing duck cuisine was reminded me during February 2020, when a news appeared in national press and similarly, it was highlighted by BBC too, who reported on 27/02/2020 that China could deploy 100,000 ducks to neighbouring Pakistan to help tackle swarms of crop-eating locusts. The report added that an agricultural expert behind the scheme told that a single duck can eat more than 200 locusts a day and can be more effective than pesticides. However, another researcher questioned whether the ducks would be effective. Later on, the Chinese government dispatched a team of experts to Pakistan to assess and develop focused program against the invading locusts. The experts informed that ducks army can be handled easily due to their habit to stay in a group so they are easier to manage and drive. He added that a trial involving the ducks would take place in China's western Xinjiang province and after that they would be transported to Pakistan's worst-affected areas of Sindh, Balochistan and Punjab provinces.

However, a professor from the China Agriculture University, who was a member of the delegation to ascertain desert locust situation in Pakistan, questioned whether the ducks would be suited to the mainly arid conditions where the locusts were a plague. He assessed that ducks rely on water, but the desert areas, where temperature is very high and coupling with dearth of water, making the control strategy impossible in Pakistan. Hence, locust eating ducks famous for control of locusts and who were a source of biological control, could not

visit Pakistan. Similarly, we Pakistani, who have not seen them how they eliminate the locust, missed the show.

Now come to Pakistan and especially capital city Islamabad, where a brilliant and genius mind in MNFSR moved an idea of catching locust and using this in poultry feed to fatten the chickens for eating or perhaps increasing egg laying with starting a project from Okara district of Punjab. Later it was reported by the daily Dawn on 3 June 2020 that, the Prime Minister Imran Khan, while chairing a meeting of the federal cabinet on Tuesday (2 June 29), endorsed an out-of-the-box proposal for dealing with the locust threat in the country under which people would be given financial incentives for catching locusts and encouraged to sell these insects to poultry feed millers who could use them in the feed at a rate of Rs15 per kilogram. Hence to benefit at large, the scope of project was enhanced throughout the country. It appears that by painting a rosy picture, bureaucracy involved in line succeeded in getting approval of a plan of locust capture and selling the same to poultry feed makers without application of sane mind and seeking experts' opinion / views from the relevant persons or that might be ignored. I don't know whether it was debated anywhere at scientific and administrative fora or not.

It is still ambiguous that the cabinet has approved a price of Rs.15 / kg of locust live or dead which is to be purchased by poultry feed mills to make ingredient in poultry feed. However, there exists possibility of some repercussions of the initiative, which may arise in the field. Firstly, it may result in hindrance of control measures against desert locust, as the public or farmers or collectors of locust will not allow to carryout control measure as they have to capture it healthy and robust with greater weight for better earnings. It may result in a law and order situation too. Secondly when control operation will not be conducted, the locust will play havoc with crops and agriculture wealth. Habitually locust eat and fly in the day time and settle in night. Meaning thereby, it would be captured at night after allowing it to eat green crops whole day. Thirdly the most serious aspect as that, our "talented" public will collect all the dead locust killed as a result of chemical sprays which would be severely contaminated and that will be sold to poultry mills, who will prepare a hazardous feed for chicken, either chicken may die, or hazardous poison may also accumulate in birds fats, that will be eaten by meat consumers. Similar situation is applicable for eggs consumed by public can result in carcinogenic, this phenomenon in food web is called biomagnification. Public already going under multiple cancer disease can develop a new disease similar to COVID 19, and Pakistan may not be able to handle the situation. Hence it is requested to review such decision and



undo the potential threat to the public health at large.

My above random thoughts may be wrong and I also intend so but to add here my perceptions were endorsed by Dr. Waseem Ahmad DVM and expert in veterinary medicines as below; "Locust contaminated with insecticides and with their residues if allowed to use in poultry feed as source of protein may cause toxicity to birds which may result in various diseases in poultry because of compromised immunity due to toxic effects of insecticides. Similarly, there are chances that these toxic effects of insecticides may be transferred to poultry meat and harm human health, there's need of a study to measure the residual effects of pesticides in locust and then its further effects on poultry health and ultimately on poultry meat consumer's health before its approval for use in poultry feed."

I tried to get information from the field, about ground realities of the catching and selling of locust by farmers in the relevant areas and could not succeed so far. However my better half told me that she watched a clip on social media perhaps prepared by BBC, she searched the same for me and I too watched that video clip in which poor a farmer was telling a reporter that catching of desert locust and its earning by selling to feed mills is not a profitable opportunity rather they faced loss in the form of destruction of all crop, labour employed including that of his son and wife to catch the locust and its netting by using big improvised nets designed for locusts, its bagging and transportation expenditures. Farmer was not satisfied as he earned Rs.5000/- only but loss of crops and cost of labour involved was more Rs.175000/-. Hence the predicted benefit of the project seems abortive.

Yet to conclude that desert locust is halal and rich in protein as the same is confirmed by Feed Analysis Laboratory of UVAS, Lahore, who has reported that dry sample wet chemistry of desert locust contains, Dry Matter 42.1%, Crude Protein 76% and Ash 4.61%. even then it is recommended that before eating make sure desert locust must be free from insecticidal contamination.



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# Digitalization: A way forward to transform Livestock Industry in Pakistan



Livestock production, a subsector of agriculture, plays an especially important role in accounting for over 58 percent of the country's agriculture sector. Pakistan's primary natural resources of arable land and water have enabled agriculture to become the mainstay of its economy.

Supporting nearly 10 million families who earn more than 40 percent of their income from livestock production activities, the livestock sector contributes to over 11 percent of Pakistan's Gross Domestic Product (GDP). But despite the scale and scope of livestock production within the country, Pakistan represents less than one percent of the international livestock export market. This is mainly due to a lack of commercial back grounding and feedlot fattening farms, a limited number of abattoirs equipped with proper machinery and equipment, improper control of foot and mouth disease (FMD), and the absence of breeds capable of providing a higher feed conversion ratio (FCR). Additionally, livestock producers in Pakistan face constraints in accessing top import markets such as China, Japan, Malaysia, Hong Kong, and Europe, primarily because of their inability to provide a diversified range of livestock products at competitive prices while complying with international food safety and traceability standards. To address this issue, the USAID-funded U.S. Pakistan Partnership for Agricultural Market Development (AMD) project, implemented by Cultivating New Frontiers in Agriculture (CNFA), introduced digital technologies such as feed ration balancing, herd management, and traceability software to commercial feedlots and export abattoirs to support the development of Pakistan's industrial agriculture and livestock sectors.

## Ration Balancing and Farm Management Software

Livestock feed is the highest cost for Pakistan's livestock farmers because meeting the international requirements for livestock nutrition is complex and requires proper technologies to balance feed formulation rations with maximum accuracy. Utilizing a specialized feed software called "FRB," a "feed ration balancing" product created by a global agribusiness, AMD was able to improve feed management processes and help modernize integrated feedlot operations for ten Pakistani commercial feedlots. The "FRB" software collects nutritional information from its

databases as well as a locally developed feedstuff library by analyzing more than 40 different feed ingredients collected from 40 districts in Sindh and Punjab provinces.

It also uses Radio-Frequency Identification (RFID) and E-Tag tools synced with an electronic scale to measure and record live animals' body weight. The system then tracks the data collected from each tagged animal - weight, health, and feed bunk records - to calculate the animal's feed conversion ratio (FCR), ideal medicine intake, and movement. Together, this technology helps commercial feedlots prepare balanced and nutritious feed at the lowest cost by comparing feed market prices with dietary needs to provide a variety of feed ration options, allowing farmers to make informed decisions about which feed ingredient combinations yield maximum returns for their feedlot farms in competitive markets.

## ZulMeat™ Traceability Software

Another major export obstacle in Pakistan is the traceability of agricultural produce and livestock. ZulMeat™, a locally developed and trade-marked software system, ensures product traceability at meat processing abattoirs by allocating a unique identity code to each animal that enters the abattoir facility. With the ability to capture the transfer of animal carcasses through various stages of production, processing, and distribution, ZulMeat™ generates accurate information about the origin and movement of an animal. This tracking method also helps to monitor and prevent the spread of animal diseases and enhance overall biosecurity. From facility to plate, ZulMeat™ ensures the proper traceability of products across the meat processing cycle, paves the way for food safety certifications such as ISO 22000, and improves the credibility of meats marketed through its users' abattoirs.

So far, these 10 AMD-supported feedlots have improved their organizational capacity to manage more than 4,000 market-ready cattle efficiently. Additionally, the three abattoirs supported with ZulMeat™ were able to export more than 18,000 metric tons of traceable meat to different Gulf Cooperating Council countries. Throughout the four-year project, AMD tailored digital technology training and grants to livestock farmers, commercial feedlots and export abattoirs to help them modernize their operations to meet international standards, make informed management decisions, better respond to market needs, increase competitiveness, and strengthen Pakistan's meat export capability in new and existing markets.

## Top five digital agricultural apps in Pakistan

Pakistan is an agrarian economy where farming and agriculture make up almost 19% of the GDP. Furthermore, 40% of the labor force in the country works in the agriculture sector. Emerging technology has been disrupting the traditional farming sector to ensure that there are more productivity and efficiency. The top 5 apps which are playing their part in transforming the agricultural industry of Pakistan for the farmer include:

### 1) Bakhtiar Kissan:

Jazz Bakhbar Kissan is a dedicated app that helps farmers to increase their crop yield with updated information and technology. The information provided by this app covers everything from soil preparation to post-harvest, along with livestock and weather updates with audio, video, and pictorial presentations. This app indicates how private organizations such as Jazz can contribute to revolutionizing the concept of agriculture in Pakistan.

### 2) Ricult Pakistan:

Ricult Pakistan is another digital app that is working to increase the productivity & profitability of small

farmers in the country by providing them agricultural information, solutions for their problems, and access to credit and the marketplace. Through the easy application process, farmers can get access not only to free agricultural information but also to market for purchases and credit at flexible terms.

### 3) Kisan Zar Zameen:

Kisan Zar Zameen is a health analysis app that provides multiple services to farmers, including the use of multi-spectral imagery from satellites. Soil conditions, crop health analysis, and weather updates are all provided through this app, making it a one-stop digital solution for farmers. Using this app, the user can detect crop stress at an early stage, benchmark crop performance, and monitor crop growth. They can also request drone spraying and mapping service, which digitalizes the agriculture sector and helps the farmer to increase yield.

### 4) Kissan Bazaar:

Kissan Bazaar is an online market place where a farmer can buy and sell agriculture items. The app includes separate sections for fruit, vegetable, poultry, and livestock. It provides an e-commerce facility to the farmer, making it easy for the rural farmer to get access to the market directly through his smartphone.

### 5) Agri Smart:

The Punjab Public Management Reform Program (PPMRP) launched an 'Agri Smart' app for extension workers with a wide range of services including farmer training sessions, pest warnings, monitoring agricultural inputs, soil sampling, and receiving complaints. This app will digitalize the work of extension workers, which means more easily accessible and fast service for the farmers in Punjab.

## Veterinary Telemedicine

Telemedicine is the use of telecommunication and information technology to provide clinical health care from a distance. It helps eliminate distance barriers and can improve access to medical services that would often not be consistently available in distant rural communities. It is also used to save lives in critical care and emergencies. University of veterinary and animal sciences Lahore Pakistan started its telemedicine services during COVID 19 case to relieve the pet animals and livestock farmers. That is one of the significant prototype shift from traditional treatment to digitalization.

## Animal nexuses

This is another app that leads to digital livestock. This app provides different facilities to livestock

*Continued on Page 17*

SUGAR Probe Report

Continued from front page

the basis of the inquiry report. While disposing of petitions of the Pakistan Sugar Mills Association and sugar mill owners, the IHC declared the constitution of the inquiry commission to probe the cartelisation and price hike of sugar lawful and also validated its proceedings and report. In its order, the IHC declared, "The constitution of the commission vide notification, dated 16.03.2020, read with notification, dated 25.03.2020 and pursuant thereto its proceedings and report, dated 21.05.2020 have not been found to be ultra vires of the Pakistan Commission of Inquiry Act, 2017 nor in violation of the fundamental rights of the petitioners. The report, dated 21.05.2020 was, therefore, lawfully considered by the federal cabinet in its meeting held on 21.05.2020."

Pakistan and India are ...

Continued from front page

Organisation (FAO), on controlling the locust activity, sharing data and attending weekly meetings. During a weekly briefing, spokesman from Pakistan's foreign office said a decision to work together was made at a ministerial-level meeting of Pakistan, India, Afghanistan and Iran in March. The participants decided to revive communication between the regional countries through the FAO's Commission for Controlling the Desert Locust in South-West Asia (SWAC). Each country, helped by the SWAC, agreed to establish a technical and

operational coordination (ToC) team to exchange information, enhance coordination at the border areas and increase synchronisation to combat the desert locust outbreak in the region, said the spokesperson. Pakistan's foreign office said the country has been participating in SWAC meetings weekly, which are fruitful in exchanging information in the bordering areas of Pakistan and India. "On its part, the government of Pakistan remains committed to cooperating with all SWAC member states, including India, in combating the desert locust outbreak," the spokesman said. Pakistan is facing its worst locust infestation in two decades, prompting authorities to declare a national emergency. Millions of locusts have also engulfed India's seven heartland states, including the western desert of Rajasthan, and threaten vegetable and pulse crops such as lentils and beans. The last major locust surge was in 1993, when heavy rains created favourable breeding conditions for the insects along the India-Pakistan border. Fresh swarms have arrived as governments in both countries are trying to contain the spread of the coronavirus and reeling from economic fallout associated with pandemic restrictions. The insects have caused extensive damage to pastures and crops and threatened food security in East African countries including Somalia, Ethiopia, Kenya, Eritrea and Djibouti this year.

Locust swarms can fly up to 150km (90 miles) a day, and the adult insects can consume roughly their own weight in fresh food each day. A small swarm can eat enough food to feed 35,000 people in one day, according to the FAO.

Poultry body rejects ...

Continued from front page

Institute Punjab had also refuted this 'baseless propaganda' through official notifications, which have been published in the media. He pointed out that the poultry sector was one of the most organised areas of the agro-based industry. The poultry sector has been serving the nation since 1962 and providing affordable poultry products to the people to fulfil the requirements of animal protein. It contributes 40 per cent of the total meat consumption and generates employment and income for thousands. "Therefore, chicken meat is healthy, nutritious and safe for consumers," he assured. Meanwhile, the Lahore Poultry Traders Association president, Tariq Javaid, recently asked the chicken wholesalers and retailers to prepare for another round of strike in the next couple of days after Chief Minister Usman Buzdar sought the sale of chicken meat at Rs260 per kilogramme. "A day before, in a meeting with Lahore Commissioner, Rs300 per kg rate was agreed mutually. But now after the CM's announcement, it seems that we will have no option but to observe a strike in case we don't get relief from the court on

Thursday. You all must be ready for another round of strike since we cannot follow the government rates due to capping of the prices and arrests of wholesalers and retailers," Javaid said in a statement.

Poultry traders postpone ...

Continued from page 04

Earlier, in a meeting, a majority of the poultry association office-bearers from Lahore, Rawalpindi, Sargodha, Chakwal, Multan, Wah Cantt and other cities were of the view that a strike should to observed in protest against what they called the government apathy towards them. Still, they deferred the plan hoping the committee would consider their demands. "We have told the government clearly that regulating the prices by forcing the traders and retailers is not acceptable, as it is causing financial losses to us," the officials said.

Veterinary dispensaries ...

Continued from page 04

Bang, Kalas and Shabronz areas were the only facilities in the union councils of Yarkhoon, and Oveer respectively so their closure would create problems for the people. He said the people of those union councils depended on cattle farming for sustenance and the outbreak of any disease would cost them cattle. "Closure of facilities is utterly against the slogan of the ruling PTI, which has advocated the idea of providing livelihood to the people across the country by giving them poultry and cattle," he said.

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## Protein nutrition for ...

Continued from page 07

in ruminants, dependent on the quantity and balance of amino acids absorbed.

**3. Lactation** - The cells within the mammary gland absorb amino acids to synthesize milk protein. Diets lacking adequate protein content may result in reduced milk protein yield. Also, adequate-protein supply in the diet is positively correlated with increased concentrations of milk lactose and fatty acids, and proper mammary gland activity.

**4. Reproduction** - Protein intake must be inadequate level to optimize reproductive performance. Insufficient protein intake may cause estrus suppression, reduced conception rates, and weak new-born calves.

**5. Health** - Immunoglobulins are proteins and defence molecules produced by the body after it encounters a foreign organism, such as a pathogen. Inadequate immunoglobulin production may cause defects in eliminating the alien plant from the body, resulting in additional health issues.

**6. Gestation** - Protein is required for adequate fetal formation. Also, as previously mentioned, protein is necessary for the proper production of immunoglobulins, which protect the new-born calf against diseases. Given that the calf does not have a preformed immune system, the immunoglobulins obtained upon colostrum consumption are the primary defence mechanism for the new-born calf.

### Feeding Protein to Cattle

Even though energy and protein are measured separately, maximum performance is obtained when requirements for both of these nutrients are met. However, many herds consume low-quality forage (< 7% CP), which does not meet these beef animals' protein requirements. Consequently, protein supplementation is required to achieve

optimal productivity levels. The most common protein sources available are meals and hay. Although significant and needed, a general setback regarding protein supplementation is the cost associated with feed, labour, fuel, and equipment types. Based on this rationale, one strategy adopted by many beef producers to reduce production costs is the infrequent protein supplementation. With rare supplementation, the total weekly supplement is provided less frequently (for example, once every six days or three times weekly). Animal growth performance (growing steers and pregnant mature cows), forage intake, BCS, and ruminal parameters (nutrient digestibility, pH, volatile fatty acid, and ammonia production), are not impaired when cattle were supplemented once every six days compared with animals provided supplements daily or once every three days. This fact may be attributed to 2 features:

1. Physiology: the unique N recycling pathway and ruminal function characteristics of ruminants,
2. Management: reduced bunk and feed competition by providing a higher supplement to the herd in a single time. Conversely, decreasing the frequency of energy supplementation (grain [corn] and fibrous based [citrus pulp] supplements) impairs forage digestibility and intake, as well as performance and reproductive function.

Another alternative to reduce the costs associated with protein supplementation is NPN utilization. As previously mentioned, NPN sources (i.e., urea) are cheaper on a CP basis when compared with right protein sources (i.e., soybean meal). However, caution must be adopted when feeding NPN to cattle:

1. Using the correct dosage and making sure it is well-mixed with concentrate or forage
2. Adequate energy sources (such as carbohydrates) available to the rumen microorganisms to maximize MCP.

## Conclusion

Protein is required for the vital body and productive functions, whereas inadequate protein nutrition leads to impaired growth, milk production, and health. Strategies to maintain cattle at optimal productivity levels and reduce supplementation costs include infrequent protein supplementation and proper NPN utilization.

## Digitalization: A way forward...

Continued from page 14

farmers, veterinary doctors, and animal lovers in the form of various services, including getting an appointment from the veterinary doctor and buy an animal or bird of your interest by downloading this app. Moreover, veterinary doctors, livestock farmers can be registered on this app, and people can access them and take their services and animals/birds of their interest.

### Going digital for Eid: E-services make buying sacrificial animals easy

Considered tedious for adults but the singular most significant experience amongst kids could soon be lost to technology with a host of digital services, whether on dedicated websites, social media groups or even mobile applications sites are now offering sacrificial cows and goats at the touch of a button, complete with home delivery and post-delivery payment.

Online cattle markets seem to be taking over social media networking sites ahead of Eidul Azha.

**Conclusion:** In the bottom line, Digitalization in livestock and agriculture is the need of the hour in Pakistan, as the world has already taken a step forward towards digitalization. In this respect, there should be frequent workshops to educate livestock /agriculture farmers on how to use this digital technology for fruitful results. We can hope that this digitalization will bring new horizons for the livestock industry in Pakistan shortly.






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Strain 2512 (Intermediate Plus)





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**لیواویٹو-15**



# LEVAVETo-15



**GASTRO-INTESTINAL NEMATODES:**

- ✓ *Trichostrongylus* spp
- ✓ *Bunostomum* spp
- ✓ *Oesophagostomum* spp

**PULMONARY STRONGYLES:**

- ✓ *Dictyocaulus viviparus*



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**SB TYLAN 10%**  
(WATER SOLUBLE POWDER)

**SB NEOXY**  
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**SB ADLEK**  
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**SB CIPRIN 20**  
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(ORAL POWDER)

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**SB LEVONEX**  
(ORAL SOLUTION)

**SB TIAMULIN 45% O/P**  
TIAMULIN HYDROGEN FUMARATE

**SB AMOXYTIN O/P**  
AMOXICILLIN TRIHYDRATE  
COLOSITINE SULPHATE

**SB EXITIL**  
ALBENDAZOLE 12.5%

**SB PIPRAZINE**  
(POWDER)

**SB HELMIN**  
(SUSPENSION)

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(WATER SOLUBLE POWDER)

**SB COXI NIP**  
(WATER SOLUBLE POWDER)

**SB RENAL**  
(WATER SOLUBLE POWDER)

**SB VITA POWER**  
(WATER SOLUBLE POWDER)

**SBC 20**  
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**SB TIACLOR O/P**  
TIAMULIN HYDROGEN  
CHLORTETRACYCLINE HCL

**SB TIAMULIN 12.5% O/P**  
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### VETY AMPRO PLUS

POWDER

**COMPOSITION:** Per kg contains:

Amprolium	200 gm
Furaltadone	200 gm
Vitamin A	4000000 iu
Vitamin D3	2000000 iu
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:**

100gm, 500gm & 1 kg

### COLA-MOXIN<sup>23%</sup>

Water Soluble Powder

**COMPOSITION:**

Each 100 gm powder contain:

Amoxicillin Trihydrate . . 23 gm

Colistin Sulphate . . . . . 100 miu

**INDICATION:**

Highly effective in Enteritis, E.Coli, Coryza, Fowl Typhoid and pasteurellosis in poultry. It is indicated in GIT infections, respiratory tract infections, urogenital infection secondary bacterial infections during viral disease in calves, sheep, goats and poultry.

**DOSAGE AND ADMINISTRATION:**

**Poultry:** 1gm 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



#### POULTRY PRODUCTS

Cola Moxin - Powder  
PolyQuin - Liquid  
Vety Ampro Plus - Powder  
Vety Dek - Powder  
Spelinamox - Powder  
Vety Strescheck - Powder  
Penprol Solution - Liquid  
Grow-Mix - Liquid  
Waltak - Injection  
Vacci Drops - Dropper  
Super Premix - Premix  
Bio Unibiotic - Liquid  
E.C. Adek - Liquid  
Livamin - Liquid  
Liso Hen - Powder  
Gumbo Hen - Powder  
Asper Tox - Liquid  
Mentho Hen - Liquid  
Mico Ton - Liquid  
Uni Renal Target - Liquid  
Mune E Plus - Liquid  
Askrolyte - Powder

#### LIVESTOCK PRODUCTS

Tridin Bolus - Bolus  
Bio Oxfend Plus - Suspension  
Fenfoxamide - Drunch  
Bio ECT - Powder 98%  
C.S. Minerals  
Multigest Plus  
Dressing Oil  
Vision Shrrien Feed Block  
Linspec - Injection  
Red Mido - Injection  
Tri Zone - Injection  
Meloxa - Injection  
Gentex B-10 - Injection  
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# COVID-19

## DISINFECTION & CLEANING

Virucidal activity:  
En 14675:2015

Type	Micro-organism	Disease	Dilution
Coronaviridae	Coronavirus	Infectious bronchitis, MERS	1:200



POWERFUL BROAD SPECTRUM DISINFECTANT



# اے وی این

پاکستان کا پہلا آزاد ویڈیو رسالہ

ایگزیکٹو ڈائریکٹر نیوز

بیماری کو شکست دہی جاسکے۔ نیز ترقی پزیر ممالک میں بڑھتے ہوئے مسائل میں بیماری کے خلاف بہتر اور کارگر طریقے تلاش کیے جاسکیں۔

پاکستان کا شمار بھی ترقی پزیر ممالک میں ہوتا ہے۔ پاکستان میں بیماری کنٹرول پروگرام 1960 میں شروع کیا گیا۔ یہ پروگرام انجینئرز اور طبیوں جیسا کہ WHO UNICEF اور USAID کی مدد سے ہر صوبے میں کام کر رہا ہے۔ اس پروگرام کا مقصد پاکستان کو بیماری سے پاک کرنا ہے اور اس پروگرام کے نتیجے میں 1960 سے 1961 کے دوران بیماری کے کمزور میں خاطر خواہ کمی آئی۔ لیکن 70 دہائی میں بیماری نے ایک بار پھر موزی کی شکل اختیار کی۔ ایک اندازہ کے مطابق 1979 میں بیماری نے 23 ملین افراد کو متاثر کیا۔ پاکستان میں بیماری کی ایک بڑی وجہ پاکستان کے معاشی مسائل ہیں۔ اس کے ساتھ ساتھ متاثرہ سلاسل اور سرحد پار مہاجرین کی آمد و رفت ہے۔ لہذا بیماری پر مکمل قابو پانے کے لیے ہنگامی سطح پر ایک موثر اور مضبوط حکمت عملی کی ضرورت ہے۔

## ملیریا ایک مہلک اور جان لیوا مرض

تقریباً 50 کروڑ سال، میاں محمد اویس، احسن فیاض

فیکلٹی آف ویٹرنری سائنسز، بہاول الدین ذکریا ویڈیو رسالہ

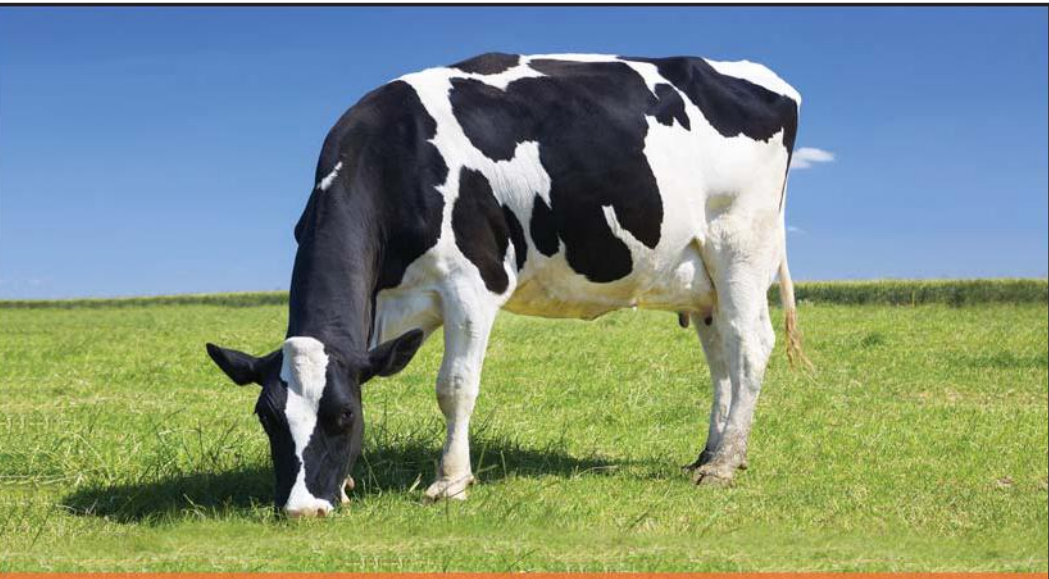
ملیریا پاکستان سمیت کئی ممالک میں پھیلی ہوئی خطرناک بیماری ہے۔ یہ بیماری تقریباً دو سو سال سے لوگوں کو متاثر کر رہی ہے۔ پرانے وقتوں میں طیبہ اسے سردی اور بخار کی بیماری کہتے تھے۔ یہ ان لوگوں میں زیادہ پائی جاتی تھی جو دلدلی علاقوں کے قریب رہتے تھے۔ یہ تو ایک سوچ بچی کہ یہ بیماری دلدل سے آئی ہے۔ دلدل کے کھڑے ہونے پانی میں سانس لینے سے لوگوں کو ملیریا ہو جاتا ہے۔ اسی مہلک سے اس بیماری کا نام ملیریا یعنی خراب ہوا پڑ گیا۔ ملیریا اعلیٰ زہاں کا لفظ ہے جس کا مطلب ہے مہلک۔

ملیریا کی دلدل سے اس بات کو ثابت کرنے کے لیے کئی لوگوں نے یہ پانی لیگیاں انہیں پلیریا نہیں ہوا۔ بلکہ اس کی اصل وجہ جاننے کیلئے انھارویں صدی میں بہت سے سائنسدانوں نے کئی تجربات کیے اور ان تجربات سے یہ ثابت ہوا کہ ملیریا کی اصل وجہ ایک جراثیم ہے جو متاثرہ مریض کے خون میں پایا جاتا ہے اور اس جراثیم کا نام پلازموڈیم رکھا گیا۔

اس جراثیم کو پینا انسان سے صحت مند انسان کے جسم میں انو فلیز (Anopheles) نسل کی مادہ پھینک پینتی ہے۔ جو مچھر اپنی افواہ نسل کیلئے خون کی ضرورت ہوتی ہے اور اس دوران وہ پلازموڈیم کو انسان کے جسم میں داخل کر دیتا ہے۔ انسانوں میں ملیریا کے پھیلاؤ کی سب سے بڑی وجہ مچھر ہے۔ اس کے علاوہ ملیریا حاملہ خواتین سے ان کے بچوں میں منتقل ہوتا ہے جسے Congenital malaria کہتے ہیں۔ اس کے علاوہ ملیریا خون کی منتقلی اور عضوی پیوندکاری اور استعمال کی ہوئی سوئی یا سرنگ سے بھی منتقل جاتا ہے۔

مچھر عموماً گندے اور کھڑے پانی کی سطح پر پائے جاتے ہیں۔ اگر ملیریا کا کسی بھی دوسری بیماری کے ساتھ موازنہ کیا جائے تو مختلف سروے سے یہ ثابت ہوتا ہے کہ ملیریا کی وجہ سے ہلاکتوں کی تعداد باقی تمام بیماریوں سے قدرے زیادہ ہوتی ہیں۔ دسمبر 2019 کی رپورٹ کے مطابق، سال 2018 میں ملیریا کے 228 کیس سامنے آئے اور سال 2018 میں ملیریا کی وجہ سے کل 405000 افراد کی موت ہوئی۔ اگر یہی رفتار برقرار رہے تو آئندہ آنے والے سالوں میں متاثرہ افراد کی تعداد 321 ملین تک جا پہنچے گی۔ اسی طرح سال 2018 میں عالمی ادارہ صحت کے سروے کے مطابق کل 27 ممالک میں ملیریا شہادے میں آج تک سال 2018-2019 کی تحقیق کے مطابق 31 ممالک ابھی بھی ملیریا کی زد میں ہیں۔ ان میں زیادہ تر متاثر ہونے والے ممالک میں افریقی خطہ شامل ہے جس میں 6 افریقی ملک شامل ہیں۔ بین الاقوامی سطح پر 228 ملین ملیریا کیسز میں سے 103 ملین کمبیراں افریقی ممالک میں دیکھنے میں آئے ہیں یعنی 47 فیصد سے زیادہ کمبیراں اس خطے میں موجود ہیں۔ ہلاکتیں ملیریا میں بچوں کی کثیر تعداد شامل ہے۔ صرف افریقی ممالک سے پانچ سال سے مچھروں کے ہلاکت ہونے کی تعداد 380000 جبکہ باقی ممالک میں کمبیراں کی تعداد تقریباً 272000 ہے۔

پاکستان کی کل آبادی 180 ملین ہے جس میں سے 177 ملین افراد کو ملیریا سے خطرہ لاحق ہے۔ پاکستان کی سالانہ ملیریا رپورٹ 2019 کے مطابق 177 ملین افراد میں سے 3 لاکھ 74 ہزار افراد میں سالانہ ملیریا کی طبیعتیں کی جا چکی ہے۔ پاکستان میں ملیریا کی وجہ سے ایک غیر طبیعتی صورتحال ہے اور اس بیماری کے پھیلنے کا موسم اگست تا نومبر یعنی مون سون کے فوراً بعد ہے۔ پاکستان میں سب سے زیادہ متاثر ہونے والے علاقوں میں بلوچستان، قندھار اور سندھ شامل ہیں۔ صوبائی سطح پر دیکھا جائے تو ملک کے تمام بڑے بڑے شہروں میں سرکاری اور پرائیویٹ صحت عامہ کے اداروں میں 2019 میں 6.5 ملین افراد کے ٹیسٹ کیے گئے اور ان میں بہترین طبی سہولیات ممبئی کی تھیں۔ صوبہ سندھ میں تقریباً 11 لاکھ 50 ہزار ملیریا کیسز رپورٹ کیے گئے جس میں سے سندھ ملیریا کنٹرول پروگرام کی جنوری تا جولائی 2019 کی رپورٹ کے مطابق 52377 کمبیراں کی تصدیق کی گئی۔ صوبہ سندھ سے



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میں بارشوں کے بعد ملیریا کا مرض بڑھ جاتا ہے تو ان علاقوں میں جانے سے پہلے احتیاطی تدابیر اختیار کریں۔

B سے مراد کٹ جانے سے بچاؤ (Bite prevention) ہے۔ اپنے آپ کو مچھر کے کاٹنے جانے سے بچائیں۔ اس کے لیے ضروری ہے کہ مچھر کے خاتے کے لیے گھروں کے ارد گرد کھڑے پانی کو ختم کریں۔ تالیوں یا کھڑے پانی کا جو بڑوں یا ان کے خیروں کو جن کو ختم کیا گیا ہو ان پر مچھر مار دوانی یا مٹی کے تیل کا چھڑکاؤ کریں۔ گھروں میں مچھر مار دوانی کا سپرے کریں۔ گھروں کے تمام دروازوں اور کھڑکیوں کی جالیوں کی مرمت کروائیں اور کوڑا کرکٹ کو گڑھا کھود کر مٹی میں اچھٹے سے دبا دیں۔ رات کو سوتے وقت مچھر دان لگائیں۔ پورے آسمانوں والے کپڑے پہنیں اور طلوع آفتاب اور غروب آفتاب کے وقت گھر سے باہر جسم کے کھلے حصوں پر مچھر بیگاؤ لوشن (chemoprophylaxis) C سے مراد بیماری کی تدابیر (chemoprophylaxis) ہے۔ اگر ملیریا سے متاثرہ کسی علاقے میں جا رہے ہوں تو

سب سے زیادہ کمبیراں مچھر سے رپورٹ ہونے جن کی تعداد 10191 رہی۔ اسی طرح لاڈاکہ سے 4121، ہندوستان سے 3994، بھارت سے 3602، مہاراشٹر سے 3523 اور مکرگٹ سے 3183 کمبیراں دیکھنے میں آئے ہیں۔

یہ تو ہمیں بتا رہے کہ ملیریا کی وجہ ایک طبیعتی پلازموڈیم ہے جو کہ بڑے مادہ پھینک پینتی جسم میں داخل ہو کر بیماری کی وجہ بنتا ہے۔ انسانوں میں پلازموڈیم کی پانچ اقسام ملیریا کا باعث بنتی ہیں۔ ان اقسام میں پلازموڈیم فاسکی ہیرم (falciparum)، پلازموڈیم ویکس (vivax)، پلازموڈیم اووے (ovale) اور پلازموڈیم نوکی (knowlesi) شامل ہیں۔ پلازموڈیم جراثیم جسم میں داخل ہونے کے بعد جگر میں جاتا ہے۔ یہاں یہ جراثیم پانچ ہفتے باقی رہتا ہے اور ادھر سے ہی خون میں شامل ہو جاتا ہے۔ خون میں داخل ہونے کے بعد یہ جراثیم خون کے سرخ خلیوں کو تباہ کر دیتا ہے جس سے سرخ خلیے پیٹ جاتے ہیں اور جراثیم دوسرے سرخ خلیوں میں داخل ہو جاتے ہیں اور 48-72 گھنٹوں کے دوران مریض میں ملیریا کی علامات ظاہر ہونا شروع ہو جاتی ہیں۔

شروع شروع میں طیبہ اسے سردی اور بخار کی بیماری کہتے تھے۔ اس کی وجہ یہ ہے کہ ملیریا میں مریض کو تھکے و تھکے سے تیز بخار ہو جاتا ہے اور ساتھ ساتھ مریض کو سردی اور کھپٹی لگی لگتی رہتی ہے۔ بخار انتہائی تیز ہوتا ہے جس میں جسم کا درجہ حرارت 104 سے 105 ڈگری فارن ہائیٹ تک چلا جاتا ہے۔ جس کی وجہ سے مریض کو بہت پسینا آتا ہے اور سر میں شدید درد محسوس ہوتا ہے۔ نیز اس کے ساتھ مٹی کی کیفیت اور تھکے جیسی صورتحال بھی پیدا ہوتی ہے اور مریض بہت زیادہ کمزوری محسوس کرنے لگ پڑتا ہے۔ مٹی اور مچھر کا بڑھ جانا اور گردوں کا پھیل جانا بھی اس بیماری کی شدید علامات میں شامل ہیں۔

حمل کے دوران ملیریا ماں کے اندر شدید مرض کا سبب بن سکتا ہے جس کی وجہ سے بچے کی پیدائش قبل از وقت ہو سکتی ہے یا پھر بچے کا وزن معمول سے کم ہو جاتا ہے۔ اس کے علاوہ خون کی کمی کی وجہ سے ماں اور بچے دونوں میں انفیلا (Anemia) بھی بن سکتا ہے۔ شدید قسم کی ملیریا ان افراد کو لاحق ہوتا ہے جن کی قوت مدافعت کم ہوتی ہے۔ ایسے افراد کے علاوہ چھوٹے بچوں اور حاملہ خواتین کے متاثر ہونے کی شرح عموماً زیادہ ہوتی ہے۔

پچھلے دس سالوں سے ملیریا کی دیکھیں (حفاظتی ٹیکوں) پر کام کیا جا رہا ہے جن میں سے کچھ کارآمد ثابت ہوئی ہیں اور کچھ تکمیل کے مراحل میں ہیں لیکن کوئی خاطر خواہ نتائج سامنے نہیں آئے۔ بنیادی طور پر ملیریا ایک جان لیوہ مرض ہے لیکن چند احتیاطی تدابیر کو اپنانے سے ہم اس مرض سے بچ سکتے ہیں۔ علاوہ احتیاط سے بہتر ہے۔ اس کو مد نظر رکھتے ہوئے عالمی ادارہ صحت (WHO) نے ملیریا سے بچاؤ کے لیے ABCD کا ایک اصول متعارف کر دیا ہے جس کے مطابق A سے مراد خطرے سے آگاہی (Awareness) (Of risk) ہے۔ یعنی کسی ملک یا کسی جگہ پر جانے سے پہلے یہ یقین کر لیں کہ وہاں پر ملیریا کی بیماری تو نہیں ہے جیسا کہ کچھ علاقوں