

PM Imran Khan wants wheat flour available at an affordable rate

AVN Report
ISLAMABAD - Prime Minister Imran Khan recently directed that all required administrative measures be ensured to make wheat flour available at affordable rates. It is an essential commodity, and an increase in its price affects poor people. The government is entirely focusing on providing relief to the ordinary person, the prime minister said while presiding over a meeting held here to review the measures being taken to bring down

essential items' prices. Ministers for finance and economic affairs, the State Bank of Pakistan's governor, and senior officers attended the meeting.

The meeting was told that the business community and traders were encouraged by the government's economic policies, which, despite the COVID-19 pandemic, provided them conducive and business-friendly environment. Various suggestions for bringing down the prices of essential commodities were presented during the meeting, including administrative

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Rs300 bn agri programme all set to curtail farmer's production cost

AVN Report
LAHORE - The Prime Minister's Agriculture Emergency Programme worth Rs300 billion is being implemented to curtail farmers' production cost, Provincial Agriculture Minister Hussain Jehanian Gardezi told a press conference here recently. Special Adviser to the CM on Information Dr Firdous Awan was also present. Under the programme, 10,000 watercourses

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IWMB links rise in leopard population to the healthy ecosystem

AVN Report
ISLAMABAD - The Islamabad Wildlife Management Board (IWMB) recently linked the increase in the population of leopards dwelling in Margalla Hills National Park (MHNP) to 'plenty of game.' "Unlike Ayubia, no case of attacks on livestock has been reported there. This is because there is a significant wild boar and monkey population along with barking deer," said IWMB Chairperson Rina Saeed Khan. Ms Khan said there were five leopards in the hills, which was a testament to the fact that the national park had a healthy eco-system; however, it must be noted that the animals inhabit the hills permanently. "This is in no way an invitation that visitors should come and see the leopards. The public is being informed to trek and hike in groups and return before sundown when trekking on trails 4 and 6," Ms Khan said. According to IWMB, the leopards roam between trails 4 and 6. They sleep through the day and come out after dark. With the opening of trail 4, trekkers need to keep in mind that it is human beings encroaching the animals' home, adding that it will take a while

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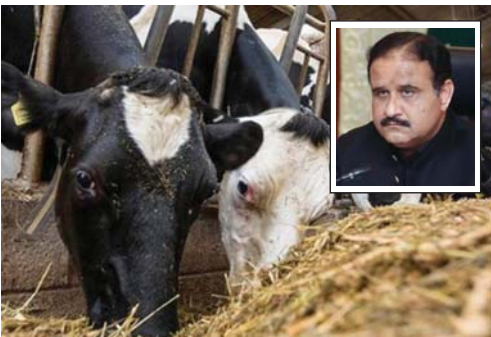
Animal Health Division



Livestock policy to be presented before the cabinet soon: CM

AVN Report

LAHORE - The province's first-ever livestock policy has been prepared and will soon be presented before the cabinet for approval to ensure the livestock and dairy development sector's growth and progress on modern lines. Chief Minister Usman Buzdar said this a meeting on livestock and dairy development department here recently. The CM directed the officials to collect accurate livestock data for perfect planning and disclosed that the Punjab Veterinary Healthcare Commission would monitor veterinary clinics. He referred to revive the departmental helpline 9211 for livestock farms and said the livestock sector's development would strengthen the economy. He also approved to upgrade veterinary hospitals in Okara, Mianwali, Attock, Lahore, Sialkot, Faisalabad, Multan, Rajanpur, and Rahim Yar Khan to provide house jobs to the DVMs. Meanwhile, a model dairy farm would also be established in DG Khan, he added. The CM directed the livestock department to adopt a strategy for non-functional institutions, and resources should be utilised for modern training while curtailing



unnecessary expenditure. He directed to arrange modern training for small-scale livestock breeders to apprise them of the latest livestock techniques. Livestock Minister Sardar Husnain Bahadur Dreshak, SACM Dr Firdous Ashig Awan, and others attended the meeting. Meanwhile, parliamentarians including federal minister Sahibzada Mehboob Sultan, MNA Sahibzada Amir Sultan, and MPAs Rana Shahbaz Ahmed, Mian Muhammad Asif, Raja Yawar Kamal Khan, Nazir Ahmed Chohan, Muhammad Ameen Zulgarnain, Muhammad Raza Hussain Bukhari, and Saeed Ahmed held meetings with the CM to apprise him of the problems of their constituencies. The CM issued instructions for the early resolution of the problems.

Rising prices: CCP raids two poultry feed mills

AVN Report

ISLAMABAD - In the wake of poultry feed prices, the Competition Commission of Pakistan (CCP) recently raided two poultry feed mills located in Rawalpindi and Lahore to collect evidence of their alleged involvement in collusive fixing of prices. The CCP teams raided the SB Feed located in Rawalpindi and owned by one influential politician. National Feeds Lahore for collecting evidence to establish anti-competitive practices, such as collusive practices to fleece consumers. The CCP had received complaints from multiple quarters regarding the continuous and simultaneous increase in the poultry feed prices, which experienced a rising trend from August 2019 to date (except downward revisions in June and July 2020). Upon receipt of the complaints, an informal survey of the poultry sheds was carried out. It is noted that feed is sold in 50 kg bags and several varieties

depend on the type of poultry. It is observed that from August 2019 to December 2020, prices of broiler feed have increased on an average by Rs584 per 50 kg bag. Similarly, for layer feed, the average increase for companies reviewed is Rs538 per 50 kg bag. Most of the feed mills cited similar and generic reasons for an increased price, such as increased raw material prices, currency devaluation, improvement in nutritional profiles, general inflation, rise in electricity tariffs, and increase in KIBOR rate and increase in wages of the skilled labour force. Exercising its powers under Section 34 of the Competition Act 2010, the Competition Commission of Pakistan (CCP) carried out a search and inspection of two major poultry feed mills.



the inspections and successfully impounded the relevant record, including computer-stored information. During inspections, both companies fully cooperated with the CCP teams and handed over the required information. It was observed that the prices of Chicken Farm Broiler increased by more than 100pc (from Rs103/kg to Rs 225/kg -- figures obtained from PBS website) during the same period, which can be linked with the increase in prices of broiler feed.

CONDOLENCE

Distinguished botanist Prof. Irtafaq Ali passes away

Noted botanist, researcher, and former vice-chancellor of Karachi University (KU) Prof Emeritus Syed Irtafaq Ali passed away recently after a brief illness. He was 91.



The Publisher, Editor, and the staff of AVN Pakistan express their heartfelt condolences on the sad demise of Prof Irtafaq and pray that Almighty Allah give courage and fortitude o the bereaved family and enough courage to bear this irreplaceable loss. With prayers that he is granted a place in Heaven, Amen.

30 cows die after being fed 'poisonous fodder'

AVN Report

BAHAWALPUR - As many as 30 precious cows worth hundreds of thousands of rupees died after eating fodder that contained poisonous sugar mills waste at a Cholistan village near Fort Abbas the other day. According to local sources, the cows belonged to one Lal Khan Toore of 251/L-H village who had a herd comprising over 100 cattle heads. Cholistan Livestock Deputy Director Dr Sohail Azmat told the sugar mills waste was deliberately mixed by many owners in the fodder they fed to their cattle in the area. Dr Sohail regretted that the farmers mostly did not heed livestock officials who warn them against mixing any fungus-infested material in the cattle fodder. He said despite the warning, the practice had been going on unabated in the rural and urban area dairy farms. He said that on receipt of the information of the death of 30 cows late on January 30, a livestock team was dispatched to the village, where they provide treatment to the remaining herd and saved

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1,200 birds distributed under PM's 'Backyard Poultry' initiative

AVN Report

ISLAMABAD - The Islamabad Capital Territory (ICT) administration's Agriculture Department recently distributed around 1,200 poultry birds among deserving women under the Backyard Poultry initiative.



The initiative aimed to address stunted growth in poor households, provide nourishment, supplement family incomes through the sale of organic eggs, create a job, and make women participate in poverty alleviation; Director Agriculture Waqar Anwar told media persons.

Addressing the ceremony at Tarlai Civil Veterinary Hospital, he said birds were being distributed on 30pc subsidised rates.

The ICT Livestock Department and Livestock and Dairy Development Board provide training to women to gain maximum benefit from the scheme. He said the birds were 90 days old, vaccinated, and would start laying eggs in a week or two.

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The campaign against stray dogs launched in Hazro

AVN Report

TAXILA - The local administration in Hazro recently launched a campaign against stray dogs after one of them bit a seven-year-old boy.

The victim's father told reporters that his son would buy some food items when a stray dog attacked him and bit him. Resultantly he received multiple injuries on his face, ear, and eye.

Later, passersby came to his rescue and shifted him to Hazro tehsil headquarters hospital for medical treatment.

Later the boy was shifted to his house after receiving the rabies vaccine. However, when the issue came to the district administration's notice, deputy commissioner Attock Ali Annan Qammar directed the Hazro municipal and local administration to clear the

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Canine Transmissible Venereal Tumors (CTVT)

By Dr Abdul Mateen and Syed Balaj Hussain Rizvi

College of Veterinary and Animal Sciences, University of Veterinary and Animal Sciences, Jhang

"It is a histiocytic tumor of the external genitalia of the dog and other canines, and is transmitted from animal to animal during mating".

Other Names include Transmissible Venereal Tumours (TVTs), canine transmissible venereal sarcoma (CTVS), infectious or venereal granuloma, Sticker tumour, transmissible sarcoma, and



contagious venereal tumour and infectious sarcoma.

History: CTVT first emerged in a dog that lived about 11,000 years ago. All CTVT tumours carry the DNA belonging to this "founder dog". By counting and analysing the mutations acquired by CTVT tumours worldwide, we can piece together how and when CTVT emerged and spread. CTVT is thus the oldest cancer known in nature.

Epidemiology: CTVT is a common disease in dogs around the world. Its global distribution is associated with the presence of free-roaming dogs. In the United Kingdom, CTVT



Figure 1: Map with estimated CTVT prevalence in different countries. CTVT prevalence was estimated via responses to a survey; locations of survey respondents are indicated with black dots.

disappeared during the twentieth century as an unintentional result of the introduction of dog control laws.

Aetiology: A virus or virus-like organism does not cause it. The canine transmissible venereal tumour's infectious agent is the cancer cell itself, and the tumour is clonal in origin.

CTVT cycle: CTVT undergoes a predictable cycle:

1. The initial growth phase of 4-6 months (P phase)

Higher mast cell counts, High microvessel counts & P?phase tumours consist of round cells with microvilli

1. Stable phase (S phase)

It consists of cells undergoing the transition from round cells to spindle?shaped fibroblasts

1. Regression phase (R phase)

Although not all tumours will regress. Regressing tumours contain higher numbers of lymphocytes, most of which are T cells

Transmission: Transmission can occur through one of the following methods.

- Horizontal transmission from one dog to another dog
- Direct contact with tumour cells
- Sexual intercourse with diseased animal
- By oral contact with diseased part (i.e. sniffing and licking of the affected area)

• Transmission from the dam to the pup during social interactions such as grooming and other maternal behaviour

Sites of Infection: The most common primary sites of involvement are the external genitalia. Other locations can be affected on occasion, including the nasal and oral cavities, subcutaneous tissues, and the eyes.

Sign and Symptoms: Sign & symptoms of CTVT includes

- In male dogs, the tumour affects the penis and foreskin
- In female dogs, it affects the vulva
- Rarely, the mouth or nose are affected
- The tumour often has a cauliflower-like appearance
- A red, tumorous mass was bulging out of the surface membrane of the vagina or on the penis.
- Blood drops may also be observed dripping from the vagina or penile foreskin.

The dog will usually lick the affected area with frequency.



- **Signs of genital TVT include**
- A discharge from the prepuce



- In some cases urinary retention, from blockage of the urethra.
- Signs of a nasal TVT include
- Nasal fistulae
- Nose bleeds
- Other nasal discharge
- Facial swelling
- Enlargement of the sub-mandibular lymph nodes



Diagnosis: A complete health history, with as much information as possible regarding when the symptoms began, how much freedom your dog has to roam freely or whether other dogs roam the area if you have been attempting to breed your dog, etc. The physical examination will focus primarily on your dog's genital organs. A tissue sample of the mass will need to be taken for *biopsy*, and fluid samples will be taken for the standard laboratory tests, including the complete blood count, biochemistry profile and *urinalysis*. These tests are usually within normal ranges, but in some cases, blood cells or abnormal cancer cells may be found in the urine sample. This type of tumour rarely spreads to other locations, but your doctor will need to visually confirm that it is not a *malignant* form of cancer. Visual diagnostics will include chest and abdominal X-rays to determine if there has been *metastasis* and its stage if cancer is present. Your veterinarian will also palpate the affected area's lymph nodes to

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SARS-CoV-2 variants and their implications on vaccine-induced immunity

by **Khalid Munir** (PhD, DVM), PetLife Veterinary Professional Corporation, NJ, USA. **Isra Munir** (BS, DMD Program), University of Pennsylvania, PA, USA.

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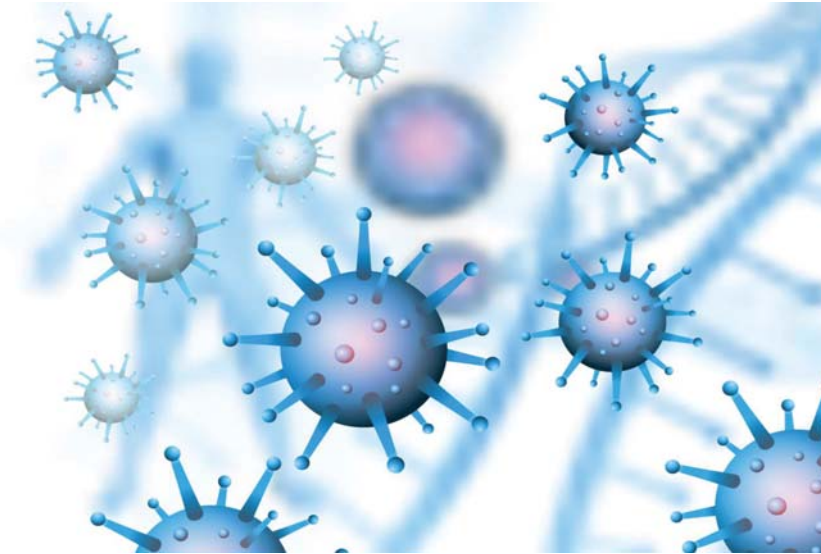
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A new Coronavirus disease referred to as COVID-19 is caused by Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2). This highly infectious disease was first reported to the World Health Organization (WHO) on December 31 2019. Since then, this virus has spread to almost all the countries worldwide, getting the status of a pandemic from WHO on March 11, 2020. SARS-CoV-2 continues to be a severe threat to the global economy and public health since its emergence from Wuhan, China, in early December 2019. Coronaviruses contain large RNA genomes with proof-reading ability; however, like other RNA viruses, they also acquire random mutations over time. As the virus goes through various evolutionary pathways, the new genotypes of the virus are emerging with multiple mutations in genes encoding the Spike (S) proteins, RNA polymerase, RNA primase, and nucleoprotein. The new SARS-CoV-2 genotypes (and the consequent change in the viral phenotypes) may have important implications not only for the molecular epidemiology and re-infections with variants but also for the vaccine development, immunization campaigns and whether or not the current available COVID-19 vaccines would hold and confer cross-protective immunity against these viral variants. All RNA viruses naturally mutate over time, and SARS-CoV-2 is no exception. The vast majority of mutations in various viral genes are "passengers" and will have little impact, i.e., they do not change the virus's biological behaviour and are just carried along. But every once in a while, a virus strain strikes lucky by mutating in a way that helps it survive and replicate more efficiently. Virus strain carrying these mutations can increase in frequency due to natural selection, given the right epidemiological settings. This is what seems to be happening with at least one or two SARS-CoV-2 variants identified so far. Scientists and researchers are working on sequencing the genomes (genetic material) of SARS-CoV-2 isolates from millions of cases. Since its first identification about a year ago, several hundreds of mutations have been detected in the genomes of SARS-CoV-2



isolates sequenced so far. Although the mutation rate in SARS-CoV-2 is less than that of influenza A viruses, this virus is acquiring approximately one to two mutations in its genome every month. Many mutations are silent and do not affect the function and structure of viral proteins. Some, however, may be non-silent and impact the structure and function of the viral protein(s). The critical concept among "corona-virologists" is that human coronaviruses are non-pathogenic in their natural reservoir hosts but become pathogenic after their transmission to a new host species. With further evolution, the viruses adapt to the new host and become more transmissible and less pathogenic or virulent. Virulence is the disease-producing power of the virus, whereas pathogenicity is the virus's potential ability to produce disease in the susceptible host population. Therefore, it is possible that a progenitor of SARS-CoV-2 jumped from bats through pangolins and perhaps another unknown intermediate host into humans and adapted from the more virulent and pathogenic strain to a more transmissible viral strain responsible for the current pandemic. This is an essential strategy for viruses to keep increasing their copy number. It is interesting to note that SARS-CoV-2 shows less pathogenicity than SARS-CoV-1 (the cause of Severe Acute Respiratory Syndrome, SARS) and MERS-CoV (responsible for causing Middle Eastern Respiratory Syndrome, MERS). Viruses such as SARS-CoV-2 aim to attain a point of equilibrium with their host(s) and

become endemic without causing high mortality in the susceptible host population. SARS-CoV-2 in humans is likely to continue evolving on these lines and become adapted further to humans to become less pathogenic or virulent. The UK variant, known as VOC 202012/01 of lineage B.1.1.7, has been spreading rapidly in London and the UK's southeastern region since September of 2020. The UK variant has accounted for more than 60% of the London area's recent infections, and its presence has been reported in more than 50 countries of the world, including the US, Canada and Pakistan. The presence of a similar but new variant, 20H/501Y.V2 of lineage B.1.351, has also been confirmed in South Africa. The UK and South African virus variants have changes in the spike gene consistent with the possibility that they are more infectious. There is a particular concern about the South African variant, which has several S protein changes, and scientists do not know their ramifications. Early epidemiological data and calculated R0 value (the primary reproductive number) connect the UK variant with higher transmission rates, i.e., spreading more quickly among humans than the South African variant and other previously identified strain(s). However, there have been no links between this new variant and enhanced virulence/pathogenicity in humans. An important point to note is how might the B.1.1.7 lineage variant have evolved? Scientists believe it acquired its mutations in a single immunocompromised patient. In such patients, the virus remains

mutating for months, and when the patients are treated with convalescent plasma, it may put selection pressure on the mutating strains. They may escape the attack quickly, hence, spreading the infectious virus to other people. The current knowledge provides some insight into the mutational spectrum of the UK variant. The projections based on computational structural modelling, considering the mutations associated with the viral S protein and its receptor-binding domain (RBD), have several important implications:

1. The mutation at 501 amino acid of asparagine to tyrosine (N501Y) in the UK variant may lead to more effective RBD binding of the S protein angiotensin-converting enzyme (ACE2) receptor on host cells.
2. The mutation near the furin cleavage site of the Spike protein may lead to a conformational change in the Spike protein leading to higher infectivity of the virus. These mutation-induced enhanced functions may increase the transmissibility of SARS-COV-2 variants, i.e., increased and rapid capacity to spread among humans. They may also change the virus's ability to cause disease among humans either positively or negatively, i.e., may result in a silent infection, a milder or more severe disease.
3. These mutations may give the variant the ability to evade vaccine-induced immune responses. The consequence of such immune evasion could be potentially devastating as the population starts to get vaccinated and builds immunity, which the emergence of "escape mutants could theoretically destroy". However, mutations in the S protein of the UK variant account for about one per cent of amino acid sequence change; hence viral evasion of the vaccine-induced immunity is less likely because antibody-mediated immunity produced by the COVID-19 vaccines approved so far would be polyclonal. Polyclonal antibodies are a heterogeneous mixture, which is usually made by different B lymphocyte-clones in the body. They can recognize and bind to many different epitopes (part of an antigen molecule to which an antibody attaches) present on a

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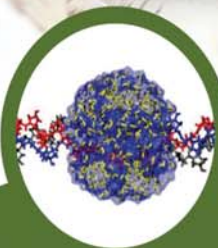
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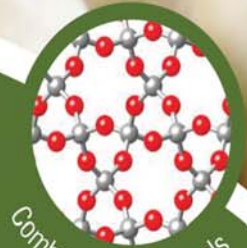
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CAMPYLOBACTERIOSIS

A challenging food-borne zoonosis

by Tyyba Arshad, Usman Waheed, Syed Ehtisham UI Haque, Muhammad Adnan Saeed, Abdur Rahman University of Veterinary & Animal Sciences, Lahore (Jhang Campus)

Campylobacteriosis is a significant food-borne zoonotic disease throughout the world. Since the last decade, the number of cases of Campylobacteriosis is on the rise in human beings. Humans' infection is mainly associated with consumption of undercooked chicken, improperly cooked red meat, raw milk, and untreated water. Many animals carry *Campylobacter* spp. asymptotically and shed the organism in their faeces. Poultry, particularly broiler chickens, is a significant bacterium source, though they usually do not become ill. According to the World Health Organization (WHO), *Campylobacter* is 1 of 4 fundamental global causes of diarrheal diseases worldwide. *Campylobacter* infections are generally mild but can be fatal among very young children, the elderly, and immunosuppressed individuals. There are 17 species and six subspecies assigned to the genus *Campylobacter*, of which the most frequently reported in human diseases are *C. jejuni* and *C. coli*. Other species such as *C. lari* and *C. upsaliensis* have also been isolated from patients with diarrheal illness but are reported less frequently. The condition is generally self-limiting; however, treatment is provided as supportive

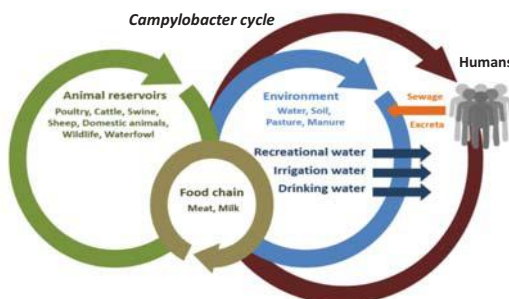
therapy mainly, and specific antibiotic therapy is done in certain complicated cases. Some preventive measures may help control the disease, i.e. the

adaptation of hygienic standards in cooking and eating food items. In poultry sheds, the implementation of strict biosecurity measures is recommended to prevent the transmission of *Campylobacter*.

Causative Agent: Campylobacteriosis is caused by a gram negative bacteria called as *Campylobacter*. There are many species of *Campylobacter* but two most important species, *Campylobacter jejuni* and *Campylobacter coli* are involved in food-borne zoonosis. *Campylobacter* is a fastidious bacterium in nature and require microaerophilic conditions to grow. They appear as curve shaped microorganism under microscope.

Epidemiology and Transmission

The *Campylobacter* organism remains in the bird's intestine throughout its life span. The organism is the normal reservoir of poultry birds and do not cause disease in poultry. But if the load of microorganism is more than normal, it may cause diarrhea in poultry birds. In poultry birds, infection occurs mainly in immune- compromised birds or as a secondary infection. It is transmitted to humans through consumption of contaminated poultry meat with intestinal contents or when undercooked meat is used. The route of transmission of



Campylobacter infection is fecal-oral route. It may be transmitted by contaminated fomites, direct contact or consumption of contaminated water. In poultry birds, the transmission of *Campylobacter* is horizontal (direct contact of healthy birds with infected birds). The non-chlorinated water (raw or contaminated water) is also considered as a vehicle of infection followed by intra-flock dissemination. The vertical route of transmission from parents to offspring's is uncommon.

Clinical Signs: In most cases, *Campylobacteriosis* is self-limiting, but in some cases, it may cause gastroenteritis, severe diarrhoea, pancreatitis, cholecystitis, peritonitis Guillain barre syndrome and may cause death in immune-compromised children. The incubation period of the *Campylobacteriosis* is 1-7 days. The body temperature may rise to 104 °F. Diarrhoea may recover within 3-4 days, but the abdominal pain and cramps may become persistent. The infection may subside within seven days. Initial symptoms may include fever, headache, and abdominal pain with diarrhoea or loose bowel movement. *Campylobacteriosis* is not a clinical disease in the case of poultry birds. These organisms typically reside in the intestine of the birds, but these are nonpathogenic. It has been reported that some strains of *Campylobacter*, e.g. *Campylobacter jejuni*, involve in the enteritis of the newly hatched chickens. A new strain of *Campylobacter* known as *C.hepaticus* has been identified as a causative agent of the spotty liver syndrome in layer birds. The poultry itself is not infected with the pathogen, but

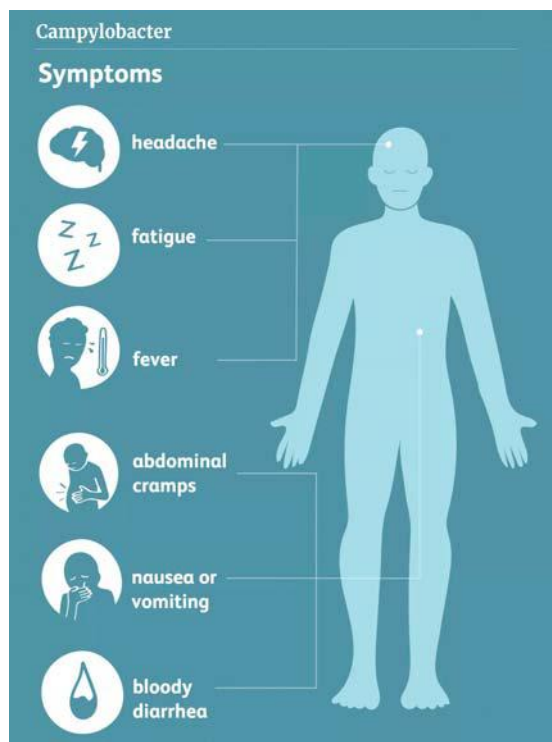
contaminated meat is the transmission source to the human population.

Diagnosis: Preliminary Diagnosis is based on clinical signs, history and postmortem findings. A pure culture is required for confirmatory tests, but an immediate confirmation can be obtained by direct microscopic examination of the suspected colony. A presumptive diagnosis can be made by observing the characteristic darting motility of *Campylobacter* spp. In darkfield or phase contrast preparations. Gram-negative, curved or spiral rods are seen in Gram-stained preparations. The material from a suspect colony is suspended in saline and evaluated, preferably by a phase-contrast microscope, for characteristic, spiral or curved, slender rods with corkscrew-like motility. Older cultures show less motile coccoid forms. Detection of oxidase can be performed by taking material from a suspected colony and steaking it on to a filter paper moistened with oxidase reagent. The appearance of violet or deep blue coloured streak line within 10 seconds indicates a positive reaction. If a commercially available oxidase test kit is used, follow the manufacturer's instructions-the *Latex agglutination* tests to confirm pure cultures of *C. jejuni/C. Coli* is commercially available.

Treatment: As the disease is self-limiting in humans, there is no need for specific therapy to cure the infection. In worse cases, antibiotics may be used to overcome the bacterial load. These influential antibiotic groups may include macrolides, aminoglycosides, quinolones, fluoroquinolones and tetracycline. The frequent and unjudicial use of these antibiotics is leading to the development of resistance against antibiotics. This has become another emerging threat to both the poultry and medical fields. There are no vaccines specifically developed for *C. jejuni* or *C. coli* in animals or birds.

Prevention methods: Several strategies can be used to prevent the disease from *Campylobacter*:

- *Campylobacter* and other harmful germs can survive on your hands. Wash your hands thoroughly with soap and water many times, i.e. before and after the meal, after using the toilet, after touching dirty things.
- Control measures should be taken at all stages of the food chain (from Farm to Fork).
- In countries without adequate sewage disposal systems, faeces and articles soiled with faeces may need to be disinfected before disposal.
- Good hygienic slaughtering practices reduce the contamination of carcasses by faeces.
- Prevention methods should be taken in domestic kitchens against foodborne bacterial diseases. Keep raw poultry away from other foods. Use separate cutting boards and clean them properly.
- Heat treatment (for example, cooking or pasteurization) or irradiation of the contaminated foods is the only effective method of eliminating foodborne Pathogen.
- Use chlorinated or filtered water for drinking.
- Don't use raw or unpasteurized milk.
- Avoid eating undercooked food items





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PM Imran Khan wants ...

Continued from front page
measures and technology utilisation to ensure transparency in the system and eliminate farmers' exploitation. The prime minister ordered the early finalisation of these proposals so that their implementation could be ensured. Presiding over another meeting to review the measures taken for reforms in priority sectors and increasing the number of Pakistani workforce in various countries, the prime minister said that strengthening the relationship with the masses and their empowerment was the foremost priority of his government. He said reforms in the governance system aimed to create ease for the people and ensure justice to them in every sector. The meeting was briefed on the steps being taken to improve the governance system, amendment to, and imposition of, the existing laws, provision of justice to ordinary citizens, and improvement in the police system and the measures for increasing the number Pakistani workforce abroad. The chief secretaries of Punjab and Khyber Pakhtunkhwa, and Islamabad chief commissioner briefed the prime minister on the measures to improve the governance system.

ARs300 bn agri ...

Continued from front page
are being lined at the cost of Rs28.59 billion. He said adding 1,200 laser land levelers has been provided to the cultivators on subsidised rates to improve farm water management. He stated that approximately 400,000 bags of approved seed of wheat, weedicide, and the latest farm machinery are being provided to the farmers at a cost of Rs12.54 billion.

"Under the scheme, the sales tax rate on harvesting machinery and service providers is being brought to two per cent from 16 per cent," he said. The department has approved 102 seeds of various crops as the DNA, fingerprinting, and variety registration have been made mandatory to ensure the seed's purity, the minister said. A crop insurance facility (Takaful) is being provided to the cultivators of 27 districts under which farm produce of 539,439 farmers against climate change, natural calamities, and locust have been insured as the department paid Rs3 billion as a premium to the insurance companies, he claimed. The minister claimed that 0.834 million farmers benefited from the e-voucher smart subsidy scheme on seeds and fertilisers as the government distributed a sum of Rs4.86 billion among them. Mr Gardezi said the present government had increased the e-credit scheme limit from Rs25,000 to Rs30,000 per acre for the Rabi crop and from Rs40,000 to Rs50,000 per acre for the Kharif crop as a sum of Rs61 billion has been distributed as an interest-free loan so far. He maintained that more than 78,000 barren land was turned into the fertile ground during the last two years, which increased the cultivators' income by approximately Rs2.5 billion.

IWMB links rise in ...

Continued from front page
before leopards get used to the presence of humans on their turf. "In case hikers do come face to face with a leopard, running is not an option; instead, one should freeze and show no signs of fear," she added. Recently, the IWMB released images of a female common leopard named Shezadi found to be a

permanent resident of the territory between trails 4 and 6 inside MHNP. Shezadi was caught on camera after traps were set up by IWMB staff for several evenings in a late January row. Leopards patrol and control 50 square km of the territory, Ms Khan said. The areas wherein IWMB has been setting camera traps since 2019 are inhabited by at least five individual common leopards. "Shezadi is now familiar with the trails that humans take and avoids them during the day. Most attacks by leopards on humans are in self defense intentional attacks are rare," she specified. The common leopard is a critically endangered species and top predator of the park and is also very territorial by nature. The IWMB, with assistance from the Capital Development Authority (CDA) is installing fences and gates around trail 4, which will be shut after sunset. Trail 4 was opened earlier in January to control overcrowding on other trails and monitor illegal woodcutting.

30 cows die after ...

Continued from page 04
the cattle of Lal Khan Toore. He added that after the incident, the department launched a vigorous campaign to persuade the farming community and dairy farmers to discourage sugar mills waste in the cattle fodder. He claimed that the department's team was still in the affected village to monitor the situation. He said the waste was being openly sold in the market and suited the cattle owners because of its low price compared to green or dry fodder. He warned that the practice could result in food poisoning of the cattle and cause death. He suggested that legislation must be done to prohibit the sale of the

sugar mill's waste to the contractors by the mill owners, who earned millions of rupees profit by selling its containers.

1,200 birds distributed ...

Continued from page 06
Anwar said that a total of 100,000 poultry birds would be distributed among deserving individuals in four years under the initiative. The directorate, he said, had set a target to distribute some 18,000 poultry birds during the current financial year. He expressed the hope that people would get the maximum benefit from the scheme. The prime minister had announced the National Agriculture Emergency Programme for reformation and rehabilitation of farming community; several interventions like the construction of watercourses, the building of farm ponds, wells, and subsidy on enhancing wheat productivity were introduced. `Backyard Poultry` is one of the interventions, and its target is especially women and rural areas.

The campaign against ...

Continued from page 06
own of stray dogs. Assistant commissioner Shagufta Jabeen visited the victim's house and assured his family that the local administration had borne all the medical expenses. Talking to reporters, assistant commissioner Shagufta Jabeen said that soon after the incident, the public health department, municipal and local administration launched stray dogs' culling. She said various teams had been constituted in rural and urban areas to clear the stray dogs.

Canine transmissible ...

Continued from page 06
determine how much the lymph nodes are reacting to the abnormality, an important distinguishing factor when cancerous cells are present. A sample of lymph fluid will be sent to a laboratory for further evaluation to determine if cancerous cells are in the sample. The presence of cancerous cells in the lymph nodes is often a strong indication that the tumour is not benign. Treatment will be based on the results of these tests. **Treatment:** Transmissible venereal tumours are usually progressive and are treated with a combination of: **Surgical technique:** Removal of the tumour through an en-bloc technique **Chemotherapy:** Intravenous administration of vincristine sulphate at the dose of 0.025 mg kg-1 of body weight, once a week, for four weeks or Doxorubicin HCL can also be used 30mg per m2of the lesion with the maximum cumulative dose of 240mg/m2.

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SARS-CoV-2 variants ...

Continued from page 08

single antigen. In other words, antibodies target various epitopes on the S protein of SARS-CoV-2.

Additionally, the local (mucosal) immunity and the cell-mediated component of the adaptive immune responses would also play a role in conferring protective immunity to individuals vaccinated against SARS-CoV-2. Fourth, mutations may make the variant less prone to therapy with specific monoclonal antibodies. Finally, the variant strain may not be accurately detectable by the diagnostic tests developed explicitly for the parental or original SARS-CoV-2 strain. According to the US Food and Drug Administration, the deletions at 69-70 amino acids in B117 lineage may appear to affect the molecular detection of SARS-CoV-2 by a few diagnostic kits. Presently, it is not conclusively known how significantly these mutations affect the clinical or epidemiological manifestations of COVID-19. The projections based on structural modelling require confirmation through further studies in humans or animal models.

The South African variant contains multiple S protein mutations, including K417T, E484K, N501. According to a recent report, E484K may affect virus neutralization by some polyclonal or monoclonal antibodies. However, further confirmation is required through in-vivo experiments in humans and animal models. In Brazil, another variant of SARS-CoV-2, known as P1, has emerged; this variant was identified in individuals travelling from Brazil to Tokyo, Japan. This variant has 17 unique mutations, including three in the RBD of the S protein. The three mutations in the S protein RBD are K417T,

E484K, and N501Y. A piece of limited evidence suggests that some of these mutations in the P.1 variant may affect its transmissibility and antigenic nature, which in turn may affect the ability of pre-existing or vaccine-induced antibodies to recognize and neutralize this variant virus. This variant's emergence raises concerns for a potential increase in transmissibility or susceptibility of recovered individuals to re-infection with a new variant of SARS-CoV-2. Very recently (on January 18, 2021), the presence of yet another SARS-CoV-2 variant, known as L452R, was reported by the California Department of Public Health in the US; this variant carries three mutations, including the ones in the spike protein. Identifying these SARS-CoV-2 variants in different countries of the world has raised the concern that they may be vaccine-resistant. In the immediate future, with the vaccine drive in place and more vaccine approvals on the way, it is essential to achieve immunity quickly in 70% of the population (herd immunity) to help control the escape mutants. With immunization on the way and the complex, healthy body immune mechanisms, no matter how the virus twists and weaves, given the diversity and enormously different antibody specificities, and not to mention the other innate and adaptive immune responses of the host population, it is not easy for SARS-CoV-2 to escape the body's defence mechanisms, despite the many variations it may adopt. The optimistic outcome would be that the mRNA vaccines would generate not only the humoral immune responses but also cytotoxic T-cells activation and differentiation, and these massive immune responses together, all of which are typically not activated with the conventional vaccines, would

be able to fight SARS-CoV-2 and its "mild" variants.

Several other genotypes, antigenic variants and pathotypes of SARS-CoV-2 may be circulating in the field. The characterization of mutations in various viral genes is essential not only for revealing the predominant mutant in an epidemic (molecular epidemiology) but also for monitoring and tracking the outbreak of infectious pathogens as well as understanding the viral drug resistance, immune evasion, and disease development mechanisms, effective vaccine development, antiviral drugs, and diagnostic assays. Thus, more research is needed to decisively link the genetic makeup of different strains/ variants of the virus with the severity and presentation of disease in patients infected with SARS-CoV-2 and fathom differences in transmissibility virulence caused by mutations in various SARS-CoV-2 genes. The type of modifications in SARS-CoV-2 that allow for human infection and transmission and the impact of these viral mutations on specific vaccines' long-term efficacy requires further investigations. Moreover, the virus's relatively rapid changing genetic makeup may limit the effectiveness of newly developed vaccines over time. As more mutations emerge in SARS-CoV-2 over time, the COVID-19 vaccines may need to be updated to match them with the circulating field strain. This also happens with seasonal flu or influenza virus in the UK and USA, and some other countries; this virus accumulates mutations throughout the year. The antigen in the flu vaccine is adjusted accordingly every year or so. It is also possible polyvalent vaccines containing two or more antigenic variants of SARS-CoV-2 may need to be developed in the long term.







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اے وی این

پاکستان کا پہلا آزاد ویڈیو رسالہ

ایگزیکٹو ویڈیو نیوز

گندم کی امدادی قیمت میں اضافہ؛ 20 کلو آٹے کے تھیلے کی قیمت بڑھنے کا امکان

لاہور: وزیراعظم عمران خان کی جانب سے گندم کی امدادی قیمت بڑھا کر 1800 روپے مقرر کرنے کی منظوری سے پنجاب حکومت گندم خریداری کے بڑے بحران سے بچ گئی تاہم گزشتہ برس کے مقابلے میں سال کسانوں کو گندم کی قیمت 400 روپے فی من زیادہ ملے گی۔

آئندہ چند روز میں محکمہ خوراک کی جانب سے فلور ملز کو فروخت کی جانے والی گندم کی قیمت میں متوقع اضافے اور گندم سے آٹا نکالنے کی شرح میں تبدیلی کی وجہ سے 20 کلو آٹا تھیلا کی قیمت میں نمایاں اضافہ ہونے کا امکان ہے، وزیراعظم کے حکم پر 100 کلو گندم میں سے 80 کلو آٹا کی تیاری سے سفید آٹا کی ہول ویٹ آٹا میں تبدیلی سے شہری صارفین کو روٹی کے ذائقہ اور غذائیت میں تبدیلی سے مشکلات پیش آسکتی ہیں۔

چیمبرمین فلور ملز ایسوسی ایشن نے آٹا غذائیت بارے وزیراعظم کے بیان کا خیر مقدم کرتے ہوئے کہا کہ عوام 75 تا 80 روپے فی کلو میں بچکی والا آٹا (ہول ویٹ) خرید رہے ہیں لیکن اب فلور ملز 50 روپے فی کلو میں بھی آٹا عوام کو مہیا کرنے کو تیار ہیں لیکن اس کیلئے حکومت بڑے پیمانے پر عوامی آگاہی مہم چلائے۔

چند ماہ قبل جب سندھ کی جانب سے قیمت 2 ہزار روپے کے اعلان کے بعد وفاقی حکومت پنجاب اور خیبر پختونخوا کیلئے گندم کی امدادی قیمت خرید 1400 سے بڑھا کر 1650 روپے مقرر کی تھی تب ہی صوبائی حکومت اور کسان حلقوں نے اسے مسترد کرتے ہوئے



کے بعد مل کیلئے موجودہ قیمت پر آٹا سپلائی کرنا ممکن نہیں ہوگا اور خدشہ ہے کہ حکومت نے درمیانی راستہ نہ نکالا تو آٹا قلت کا بحران پیدا ہو سکتا ہے۔

چیمبرمین پنجاب فلور ملز ایسوسی ایشن عاصم رضا نے کہا ہے کہ وزیراعظم نے آٹا غذائیت

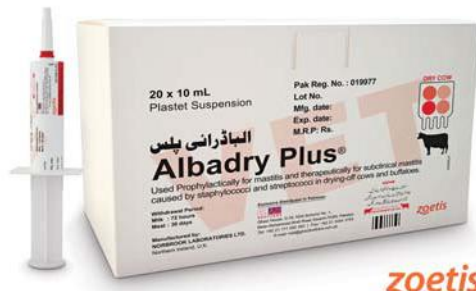
بارے جو بیان دیا ہے ہم اس کا خیر مقدم کرتے ہیں ہم تو طویل عرصہ سے حکومت کو یہ پیشکش کر رہے تھے کہ ہم عوام کو 50 روپے کلو قیمت پر ہول ویٹ (دلی آٹا) فروخت کرنے کو تیار ہیں جو چکی مالکان 80 روپے میں فروخت کر رہے ہیں، سفید آٹا ہم اس لئے بناتے ہیں کہ عوام کی ڈیمانڈ ہے اب اگر حکومت ہول ویٹ آٹا کی آگاہی مہم شروع کرنا چاہتی ہے تو فلور ملز انڈسٹری ان کے ساتھ ہے۔



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