Cold Wave/ Frost

Do's and Don'ts for common people

Before

- Follow all media outlets like radio/TV/ newspapers for local weather forecast to know if a cold wave is likely to occur in next few days.
- Stock adequate winter clothing. Multiple layers of clothing are more helpful.
- Keep emergency supplies – like food, water, fuel, battery, chargers, emergency light, and basic medicines ready.
- Ensure proper closure of door and windows so that cold winds do not get in the home.
- An increased likelihood of various illnesses like flu, running/ stuffy nose or nosebleed, which usually set in or get aggravated due to prolonged exposure to cold. Consult the local health workers or doctor for symptoms like this.

During

- Follow weather information and emergency procedure information closely and act as advised by government agencies
- Stay indoors as much as possible and minimize travel to prevent exposure to cold wind, rain, snow
- Wear multiple layers of loose fitting, lightweight; windproof nylon/cottons outside and warm woolen clothing inside rather than one layer of heavy clothing. Tight clothing reduces blood circulation – avoid them
- Keep yourself dry. If wet then cover your head, neck, hands and toes adequately as majority of heat loss occurs through these body parts. Change wet clothes immediately
- Prefer mittens (without fingers) over gloves with fingers. Mittens provide more warmth and insulation from cold, as fingers share their warmth and expose less surface area to the cold. Cover your mouth& nose to protect your lungs. Wear mask when going out to protect from COVID–19 and other respiratory infections
- Use cap/hats and mufflers to prevent heat loss, wear insulated / waterproof shoes. Cover your head as most body heat is lost through the top of the head
- Eat healthy food
- Eat fruits and vegetables rich in Vitamin C to maintain adequate immunity
- Drink hot fluids regularly, as this will maintain body heat to fight cold

- Moisturize your skin regularly with oil, petroleum jelly or body cream
- Take care of elderly people, newborns and children and check neighbors who live alone, especially the elderly about their wellbeing
- Store essential supply as per requirement. Store adequate water as pipes may freeze
- Conserve energy. Restrict the use of room heater to heat rooms only when necessary
- Do heating appliances such as room heater is used, ensure adequate ventilation
- Do not burn coal indoors for generating heat – if you have to burn coal or wood have proper chimney so that smoke goes out. Coal burning in closed spaces could be dangerous as it can produce carbon monoxide which is very poisonous and can kill persons in the room
- Follow the guide on heat insulation for non-industrial buildings and take necessary preparedness measures to prevent heat loss
- Move pet-animals indoors. Likewise, protect livestock or domestic animals from cold weather by moving them inside – or cover them with blankets
- Avoid prolonged exposure to cold
- Don't drink alcohol. It reduces your body temperature, it actually narrows your blood vessels, particularly those in the hands, which can increase the risk of hypothermia
- Do not massage the frostbitten area. This can cause more damage to skin
- Do not ignore shivering. It is the first sign that the body is losing heat - get indoors
- Do not give the affected person any fluids unless he or she is fully alert
- Watch out for symptoms of frostbite like numbness, white or pale appearance on fingers, toes, ear lobes and the tip of the nose, while exposed to cold wave
- Prolonged exposure to cold can turn skin to pale, hard and numb, and red blisters on exposed body parts such as fingers, toes, nose and/ or earlobes. Red colour of the skin may change to black when the part becomes dead. This is very dangerous and called gangrene – it is irreversible. So on first signs of frost bite immediately consult the Doctor. Even before that try to immediately warm the part with heat source taking care not to over-heat or the part may get burns
- Treat the areas affected by frostbite in warm (not hot) water (the temperature should be comfortable to touch for unaffected parts of the body)
- Do not ignore shivering. It is an important first sign that the body is losing heat and is a signal to need for quickly returning to indoors for warmth
- Get the person into a warm place and change clothes if wet or very cold

- Warm the person's body with skin-to-skin contact, dry layers of blankets, clothes, towels, or sheets. Keep him near a heater or fire place
- Give warm drinks to help increase body temperature. Do not give alcohol as it will reduce the body temperature
- Exposure to cold wave can lead to Hypothermia – a decrease in body temperature which can cause shivering, difficulty in speaking, sleepiness, stiff muscles, heavy breathing, weakness and/or loss of consciousness. Hypothermia is a medical emergency that needs immediate medical attention
- Seek medical attention as soon as possible for someone suffering from Frostbite / Hypothermia.
- Consult doctor or heath worker for symptoms like running/ stuffy nose particularly during the period COVID -19.
- Follow NDMA App on FAST for basic First Aid.

Agriculture

Cold wave and frost damages crops by causing physical injury to cells, there by pest and disease are likely to invade the crop. Cold wave also causes variety of physiological disruptions, mostly when the crop is in seedling stage or reproductive stage. Prolonged cold may affect germination, growth, flowering and yield.

Do's

- Undertake curative measures to avoid disease invasion due to cold injury by spraying Bordeaux mixture or Copper Oxi-chloride. Application of phosphorus (P) and potassium (K) fertilizers post cold wave will activate better root growth and help crop to recover fast from cold injury
- Provide light and frequent surface irrigations during the cold wave. Due to high specific heat of water irrigation protects plant from cold injury
- Sprinkler irrigation will also help reduce cold injury to plants as the condensation of water droplets release heat into the surrounding
- Cultivate of cold/frost resistant plants/crops/varieties
- Grow intercropping in perennial orchards
- Mixed cropping of vegetables, viz., tomato, brinjal with tall crop like mustard / pigeon pea will provide necessary shelter against cold winds
- Mulching nursery beds of soil near main trunk with black or silver plastic sheets increase radiation absorption and provide warmer thermal regime during winter. In

case plastic mulch is not available, making thatches (*jhuggies*) of straw or *sarkanda* grass or organic mulching will also protect crops from cold.

- Planting wind breaks/shelter belts around field reduce wind speed, there by minimize cold injury
- Providing smoke also gives protection to orchard crops against cold injury

Animal Husbandry/Livestock

During Cold waves animals and livestock require more food for sustenance as the energy requirement goes up. Extreme variations in temperature may affect the fertility rate animals, during the optimum breeding season for buffaloes /cattle.

Do's

- Cover the animal habitat from all sides during night in order to avoid direct exposure of animals to cold winds
- Cover the animals especially smaller ones during cold days
- Protect livestock and poultry from cold weather by keeping them inside
- Improving livestock feeding practice and dietary additives
- Use of high-quality forage or pastures
- Provide fat supplements - concentrate ratio on feed intake, feeding, and chewing behavior
- Construction of Climate smart sheds which allow maximum sunlight during winters and low radiation during summers.
- Selecting animal breeds especially fit for these conditions
- Apply some bedding materials such as dry straw under animals during winters.

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