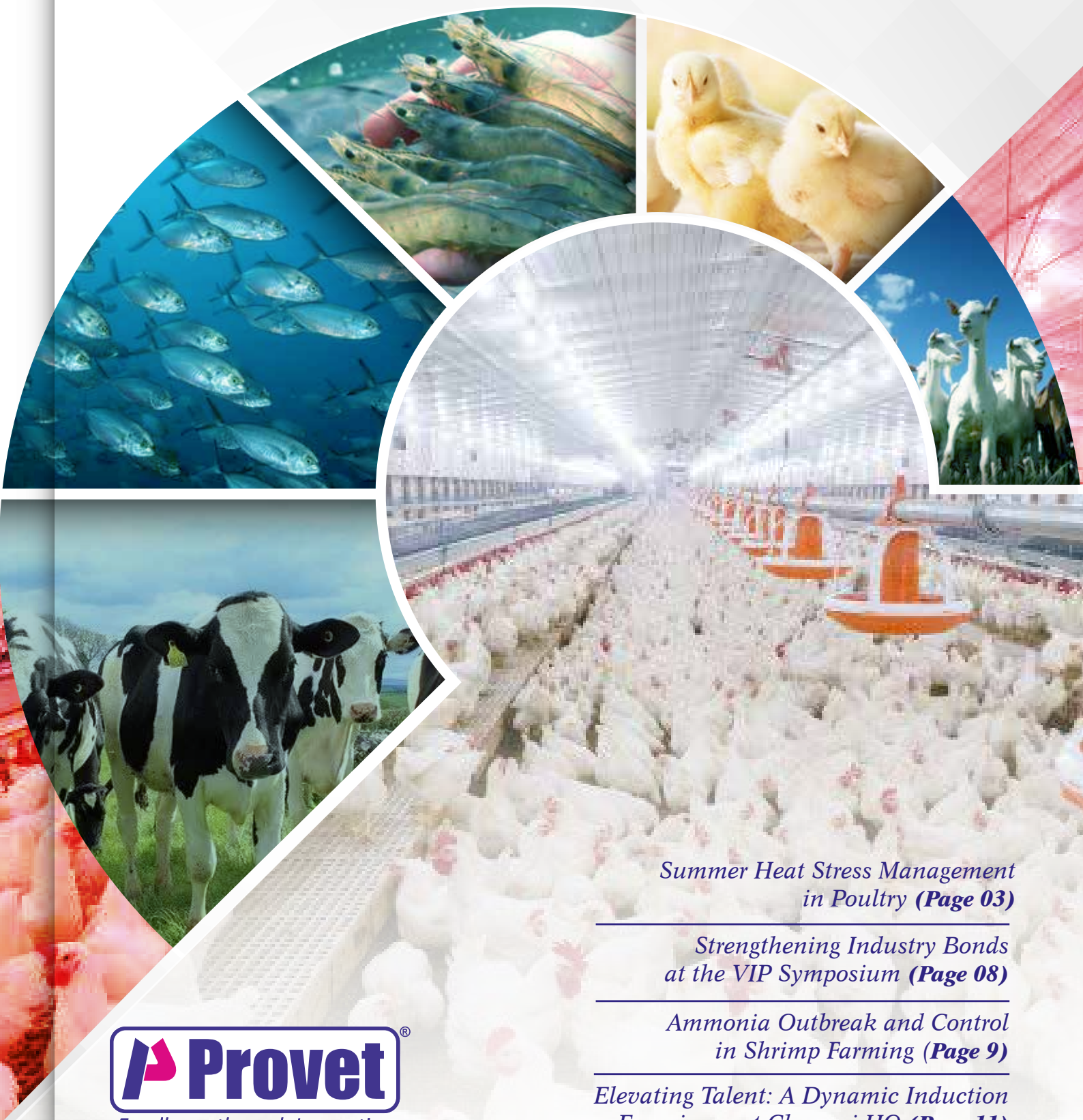
PROPULSE

JUNE 2025



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Summer Heat Stress Management in Poultry

Dr B C Dutta, Poultry Consultant
www.drbcdutta.com

What is Heat Stress?

- A situation when chicken faces difficulty in achieving balance between body heat production & body heat loss
- Genetics, feather cover, age, body weight, egg production stage & flock maintenance all affect a chicken's heat tolerance
- Chickens are homeotherms & regulate their body temperature across a wide range of external temperature
- But continuous high climate temp overwhelm the thermoregulatory mechanisms, resulting imbalance between the amount of metabolic heat produced & their capacity to dissipate body heat in the environment

Key Environmental Factors Contributing to Heat Stress in Poultry

- Consistent global warming induced temperature elevation
- Uprooting trees & deforestation in the name of urbanization
- Filling of waterbodies
- Indiscriminate mining & urbanization in hills

Physiological Changes and Production Impact of Heat Stress

- Chickens lack sweat glands to facilitate latent heat loss by evaporation (perspiration), and have limited un-feathered body surface areas for loss of sensible heat through conduction, radiation, & convection
- With increase in climate temp, the thermal gradient between the body surface & the surrounding environment lessens with dissipation of heat decreasing, resulting chicken suffering from environment-induced hyperthermia.
- This increases respiratory rate (thermal polypnea or panting) to increase latent heat loss via evaporation of water from the respiratory tract
- Dehydration is the most harmful effect of panting, which causes respiratory alkalosis, acid base imbalance leading to permanent physiological damage
- Alkalosis reduces blood ionized calcium and ultimately eggshell mineralization resulting reduced egg production, pale egg, soft shell eggs, thin shell egg, increased broken egg % in layer & breeder
- Panting causes oxidative stress leading to immunosuppression, ultimately inviting diseases
- Panting causes loss of energy leading to poor productivity in chicken
- Heat stress impact the expression of gene related to growth, production performance & resistance to disease

Key Signs Of Heat Stress In Poultry

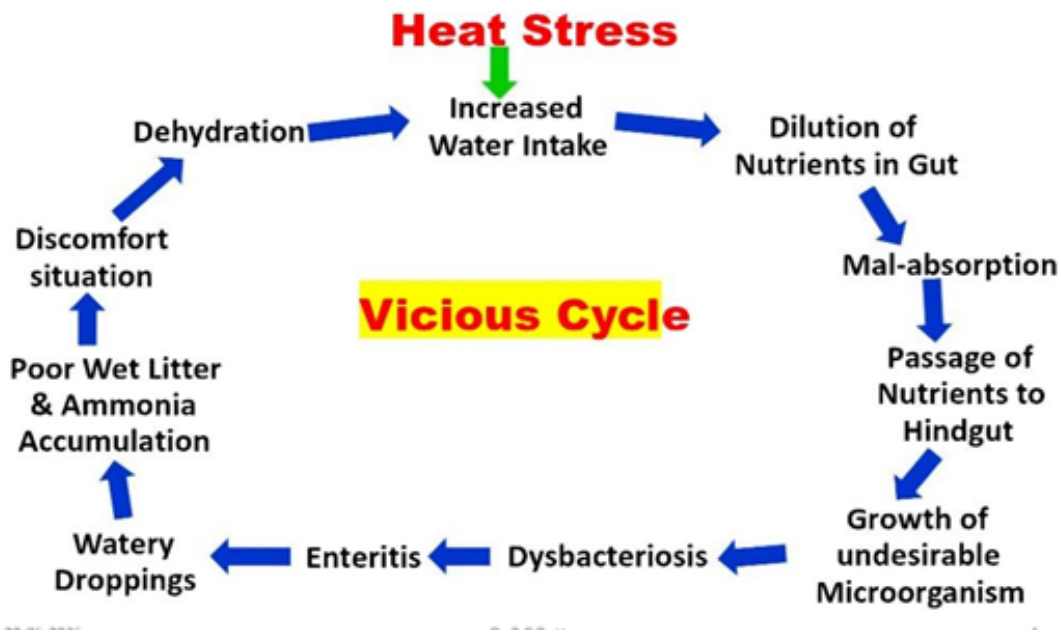
- Panting
- Sitting with wings spread to dissipate body heat by convection
- Poor feed intake
- Increased water intake
- Enteritis
- Poor body wt gain, reduced egg production & poor egg shell quality
- Heat stroke mortality

Economic Impact And Productivity Losses Associated With Heat Stress

- Reduced feed intake
- Reduced egg production
- Reduced egg weight
- Poor shell quality
- Reduced albumin height in egg
- Reduced male fertility
- Reduced hatchability
- Poor growth
- Cannibalism
- Respiratory distress leading to respiratory infections like Colibacillosis, CRD, Coryza, ND, IB & Avian Influenza
- Immunosuppression resulting increased disease incident from existing microbes, especially the respiratory diseases like ND, Avian Influenza, IB, CRD, *E coli*, etc
- Heat stress has permanent damaging effect; damages the muscles affecting meat quality and lowering breast muscle yield
- Reduces protein content of the muscles, reduction of muscle ph & water holding capacity and ultimately affecting juiciness of chicken meat
- Disturbs lipid metabolism by affecting enzyme function in lipid breakdown causing excess fat deposition instead of converting to meat

Major Health Risks Of Chicken During Summer

- Immunosuppression and increased incidence of diseases from existing microbes, especially the respiratory diseases like ND, AI, IB, CRD, *E coli*, etc
- Oxidative stress causes gut health problem, reduced digestion with reduced productivity
- Under heat stress, water intake increases leading to dilution of nutrients inside intestinal lumen resulting mal-absorption and passage of nutrients into the hind gut
- This favours growth of undesirable microorganism, loss of microbial equilibrium in the gut, dysbacteriosis, enteritis, watery dropping, wet litter condition, ammonia accumulation resulting further increase in humidity at the bird's level leading to increase discomfort level & dehydration. The chicken will consume more water and the condition aggravates in a cyclic manner (vicious cycle)
- In closed EC house, with increase in climate temperature, control system is failing, especially with high humidity outside. evaporative cooling & tunnel ventilation failed to maintain comfort environment inside with rising climate temperature outside creating many blank spot in the middle of EC house causing breathing problem leading to panting



Impacts On Immunity, Post Vaccination Response & Disease Susceptibility

- Heat stress impairs a chicken's immune system, leading to a reduced response to vaccines, suppressing the production of antibodies and affecting the function of immune cells, particularly lymphocytes, due to the atrophy of immune organs like thymus under high temperatures. Heat stress makes it harder for chickens to fight off infections after vaccination and increases their vulnerability to disease
- Heat stress can significantly lower the levels of circulating antibodies (like IgM and IgG) produced after vaccination, resulting in a weaker immune response against pathogens
- High temp cause atrophy of thymus, leading to decreased T-cell production and impaired cell-mediated immunity
- Heat stress increases corticosteroid levels and thus the immune system.
- Heat stress disrupt the function of immune cells, macrophages & lymphocytes, affecting their ability to recognize and fight pathogens.
- Heat stress damage the intestinal lining, allowing harmful bacteria to enter the bloodstream, further compromising immune function

Monitoring Heat Stress In Poultry

- Difference in activity during cool hours & hot hours
- Posture of the birds
- Feed intake with increasing temperature
- Health status after temperature increase
- Degree of panting or respiratory distress
- Egg production & egg shell quality status with increasing temp

Poultry House Environmental Modifications To Combat Heat Stress

Poultry house environment need to made near comfort zone in terms of temperature humidity & ventilation. closed EC house is the perfect answer for chicken. Alternative actions are:

- Plantation of tress on both side
- Farm construction near forest or under coconut farming or any big trees
- Reduce stocking density
- In open house system action must be taken to REDUCE temperature at Birds level through
  - i) Elevated roof, increased centre height than standard practice
  - ii) Coated roofing materials (tin or asbestos) or thatched roof
  - iii) Extended both side roof overhang to prevent entry of direct sunlight
  - iv) Thatching of roof by agricultural waste
  - v) False ceiling by thermostat aluminium foil or agricultural waste
  - vi) Constructing side pandals (leaned roof over-hang 1 meter)
  - vii) Hanging of gunny with dipper on both side during hot hours keeping ventilation on top
  - viii) Ceiling fans in case of broiler and circulatory fans in layer or breeder
  - ix) Springler on rooftop

Nutritional Modification To Combat Heat Stress In Summer

1. **Sodium bicarbonate**
   - **pH regulation:** When birds pant heavily in hot environments, birds lose carbon dioxide due to excessive Panting, leading to a rise in blood pH (alkalosis). Sodium bicarbonate acts as a buffering agent, providing bicarbonate ions that help maintain a balanced blood pH.
   - **Improved feed and water intake:** Adding sodium bicarbonate to drinking water helps increase water consumption, which is vital for heat regulation.
   - **Enhanced growth performance:** Studies shown that supplementing sodium bicarbonate in the diet of heat-stressed poultry can improve body weight gain and FCR.
   - **Eggshell quality:** For laying hens, sodium bicarbonate helps maintaining good eggshell quality as the bicarbonate ion is involved in shell formation.
2. **Electrolytes**
   - Electrolytes help maintaining proper fluid balance and blood pH levels, which are significantly disrupted when chickens panting heavily in hot environments, leading to the loss of essential minerals like Na & K through their respiratory system
   - Supplementing electrolytes in the drinking water can help replenish these lost minerals and alleviate the negative effects of heat stress
3. **Vitamin C**
   - **Antioxidant activity:** Vitamin C scavenges free radicals generated during heat stress, protecting cells & tissues from oxidative stress induced damage
   - **Immune system support:** Vitamin C is vital for proper immune function, which can be compromised under heat stress.

- **Hormone regulation:** Vitamin C is involved in the synthesis of stress hormones, helping to manage their levels during heat stress.
- **Improved performance:** Supplementation with Vitamin C can lead to better growth rates, feed efficiency, and egg production & egg shell quality in heat-stressed chickens. Vit C helps maintaining sperm production in breeder male during summer stress
- **Reduced oxidative damage:** Heat stress can cause oxidative damage to the liver and other organs, which Vitamin C helps to mitigate.
- **Blood pH regulation:** Studies suggest that Vitamin C can help maintain proper blood pH levels, which can be disrupted under heat stress

4. Ginger, turmeric few other herbs can help by reducing mortality, improving nutrient digestion, and stimulating the immune system
5. Vit A, D, E & Vit B Complex help reduces heat stress mortality
6. Vitamin E, Zn & Se can help mitigating heat stress with antioxidant parameter
7. Betaine help with reducing metabolic heat production thus helps reducing heat stress
8. **Chromium**
   - Chromium enhances insulin sensitivity, allowing better utilization of glucose, crucial for energy production during heat stress when energy demands are high
   - Chromium addition can lead to decreased levels of corticosterone, a stress hormone released in response to heat stress, thereby promoting a calmer physiological state
   - Chromium as antioxidant, helps to combat oxidative stress caused by heat stress damaging cells and tissues
   - Performance Improvement: by mitigating the negative impacts of heat stress on metabolism & stress response, supplementing chromium can positively influence growth rate, feed efficiency, and egg production in chicken

Drinking Water Management

Cold drinking water supply 24 hours; the key of combating heat stress, can be ensured by

- Frequent filling of water tank, and not to allow water to become hot in tank
- Keeping water tank under shed, even inside farm shed.
- Open tank may be made white painted to reduce heating of water inside.
- Underground water pipeline from tank to farm shed
- Covering of external water pipeline by wet gunny during summer days
- For manual chick drinker, change water frequently

Heat Stress Mitigation Keys

- Reduce temperature of poultry house with available infrastructure & inputs applying common sense
- Reduce stocking density or allow more space to each birds
- Improve air movement at birds' level
- Increase nutrient density in feed, especially the micronutrients.
- Modify feeding practice towards cool hour feeding
- Supply cold drinking water 24 hours

Strengthening Industry Bonds at the VIP Symposium

The **Second National Symposium** organized by Vets in Poultry (VIP) Association guided by the theme "Innovate, Integrate, and Thrive," held on 7th of May 2025 at Hotel Hyatt Regency, Chandigarh, was not merely an event but a collective step forward for the Indian poultry sector.

As the **Bronze Sponsor,** Provet takes immense pride in supporting this prestigious event and being a part of the movement that drives progress in the poultry industry.

The presence and participation of such a diverse and esteemed gathering made it a truly meaningful and impactful occasion comprised of stakeholders like poultry farmers, academicians, government authorities, scientists, eminent speakers, panellists', subject experts, and valued partners from the pharmaceutical sector.

The symposium was honoured by the presence of Hon'ble Shri Nitin Gadkari Ji, Minister of Road Transport and Highways, Hon'ble Shri Mahipal Dhanda Ji, Education Minister, Government of Haryana, and Smt. Alka Upadhyay Ji, Secretary, Department of Animal Husbandry, Government of India, who joined the event virtually and provided valuable perspectives on policies and initiatives shaping the industry.

The Symposium truly served as a platform for thought leadership, innovation, and camaraderie among professionals, further contributing to the advancement of poultry farming and allied industries.

Ammonia Outbreak and Control in Shrimp Farming

Dr. Vijay Sundar Deva
Product Manager
Blunova

An ammonia outbreak is a common and serious water quality issue in shrimp aquaculture. High ammonia levels can be toxic and lead to stress, disease outbreaks, poor growth, or even mass mortalities in shrimp ponds.

What Causes Ammonia Build-Up?

1. Overfeeding-Excess feed decomposes and releases ammonia.
2. High biomass-Too many shrimp = more waste.
3. Inadequate water exchange or poor aeration.
4. Low populations of beneficial bacteria (nitrifying bacteria).
5. Decomposition of organic matter-dead algae, feces, or sludge.

Effects of Ammonia on Shrimp

- Reduced oxygen-carrying capacity in shrimp blood
- Shrimp surfacing and gasping
- Red antennae or tail
- Gill and tissue damage
- Moulting issues
- Stress and susceptibility to diseases (e.g., white spot syndrome)
- Reduced feed intake and growth
- Sudden death if levels spike

Safe Ammonia Levels in Shrimp Ponds

- Reduced oxygen-carrying capacity in shrimp blood
- Shrimp surfacing and gasping
- Red antennae or tail
- Gill and tissue damage
- Moulting issues
- Stress and susceptibility to diseases (e.g., white spot syndrome)
- Reduced feed intake and growth
- Sudden death if levels spike

Parameter	Acceptable Level
Total Ammonia Nitrogen (TAN)	< 0.5 mg/L
Un-ionized Ammonia (NH_3)	< 0.1 mg/L (toxic form)

Note: NH_3 levels increase with rising pH and temperature.

Ammonia Control Measures

Short-Term/Emergency Actions:

1. Reduce feeding immediately.
2. Increase aeration to boost oxygen and support nitrifying bacteria.
3. Partial water exchange (20–30%) to dilute ammonia.
4. Apply **ENVIPRO GOLD** – ENVIPRO GOLD contains actives such as polyphenols and triterpenoid saponins, which react with ammonia in the ponds and reduce free ammonia levels significantly. Besides this, ENVIPRO GOLD improves digestion, assimilation, and immunity, as it reduces the movement of feed through gut, which in turns reduces the loss of nitrogen (ammonia) through droppings.

   The recommended dosage:

   Pond application – 250 ml/acre of the pond water.
   To be repeated every 10 to 15 days.

   Feed application – 1ml/kg of the feed.
5. **pH control** – If pH is high (>8), consider mild acidifiers (e.g., organic acids) to lower it, as high pH increases toxic NH_3.

Long-Term Prevention:

1. Good feeding practices – avoid overfeeding and use high-quality, digestible feed.
2. Sludge management – regular siphoning and pond bottom cleaning.
3. Use of biofloc systems – promotes microbial conversion of ammonia into protein.
4. Maintain proper C:N ratio – adding carbon sources (molasses, rice bran) promotes heterotrophic bacteria growth that uses ammonia.
5. Regular water quality monitoring – pH, TAN, DO, temperature.

Monitoring Tips

- Test ammonia levels daily in intensive systems.
- Monitor pH, as ammonia becomes more toxic at high pH (>8.0).
- Keep DO levels above 5 mg/L.

Elevating Talent: A Dynamic Induction Experience at Chennai HQ

Our newest team members embarked on a transformative journey at our Head Office in Chennai during a week-long induction and training program designed to equip them with essential knowledge and skills.

Guided by industry expertise, the sessions featured an insightful technical training module led by our esteemed consultant, **Dr. B. C. Dutta,** ensuring a strong foundation for their professional growth. Beyond technical learning, the program fostered an engaging and interactive environment, where quiz-based challenges encouraged participation and rewarded excellence.

This enriching experience not only sharpened their capabilities but also strengthened camaraderie, making the transition into our organization both seamless and enjoyable.









Trailblazers In Uniform: The Women Who Lead Operation Sindoor

In a groundbreaking moment for India's defence forces, two exceptional women officers, Wing Commander Vyomika Singh and Colonel Sofiya Qureshi, led the media briefing on Operation Sindoor. Their leadership in detailing the military's precision strikes on terror camps in Pakistan underscores the growing prominence of women in India's armed forces.

Colonel **Sophia Qureshi** Wing Commander **Vyomika Singh**

Operation Sindoor was named as a tribute to the women who lost their partners in the deadly Pahalgam attack, where militants targeted male tourists in Jammu and Kashmir on April 22, killing 26 civilians. The military's decisive response, executed with surgical precision, reaffirmed India's commitment to justice.

The decision to have women officers lead the briefing was widely praised as a bold and symbolic move, sending a strong message to adversaries while showcasing the evolving role of women in defence.

Meet the Women Behind the Briefing

Wing Commander Vyomika Singh: A Skybound Visionary

Wing Commander Vyomika Singh is a distinguished helicopter pilot in the Indian Air Force (IAF). Her journey to aviation began in childhood when she discovered that her name, Vyomika, meant "the one who owns the sky." This realization ignited her passion for flying, leading her to enroll in the National Cadet Corps (NCC) and pursue a degree in engineering. After clearing the UPSC exam, she became the first in her family to join the Armed Forces, receiving her commission as a helicopter pilot in the IAF in 2014 under the 21st Short Service Commission for women. Rising through the ranks, she was promoted to Wing Commander in 2017 and granted a permanent commission in 2019. Throughout her career, she has piloted helicopters such as the 'Chetak' and 'Cheetah' across some of India's most challenging terrains, including Jammu and Kashmir and the Northeast, and has participated in numerous rescue missions.

Colonel Sofiya Qureshi: A Pioneer in Military Leadership

Colonel Sofiya Qureshi is a decorated officer of the Indian Army's Corps of Signals. With a family legacy of service—her grandfather having served in the Army and her father a religious teacher in the Armed Forces—patriotism and discipline were ingrained in her from a young age.

Excelling academically, she earned a master's degree in Biochemistry but ultimately chose a career in the military. In 2016, she broke barriers as the first woman officer to lead an Indian Army contingent in a multinational military exercise in Pune—one of the largest of its kind on Indian soil. Her leadership in complex peacekeeping and mine-clearance operations cemented her reputation as a formidable force within the military.

Colonel Qureshi's achievements have contributed to policy changes, including the permanent commission for women and the NDA entry policy. Balancing her demanding career with family life, she remains a source of inspiration for aspiring women officers.

A New Era of Leadership

Their leadership and expertise reinforced the idea that strength, strategy, and commitment are not bound by gender but by dedication and capability. As India continues to advance towards greater inclusivity in defence, their contributions serve as powerful reminders that the sky and battlefield alike belong to those who dare to lead.

Nature's Embrace
A Glimpse of Nature's Blessings at Our Factory

In the fast-paced rhythm of modern life, stress has become an unavoidable companion. More than ever, we need nature's soothing embrace, its gentle breeze, serene landscapes, and calming melodies, to restore balance.

Nature offers a sanctuary, a space where our minds can breathe, hearts can find solace, and souls can reconnect with simplicity and peace.

Life is a beautiful tapestry, but without nature, it's missing its most vibrant threads. Nature breathes meaning into existence, filling it with harmony, wonder, and purpose. Without it, life loses its essence.

Nagalingam Flower – A Sacred and Healing Presence in Our Factory Premises

The Nagalingam flower (Couroupita guianensis), also known as the Cannon Ball Tree in English and Lingam poo in Tamil, is a unique and sacred tree admired for its divine beauty and medicinal value. It belongs to the family Lecythidaceae and is the State Flower of Puducherry.

Located adjacent to the main entrance gate, this tree is well known for its large, fragrant blooms, which grow directly from the trunk in eye-catching clusters. The flower's inner structure resembles a Shiva Lingam under a hooded cobra, symbolizing Lord Shiva—making it an important flower in Hindu rituals.

In our factory surroundings, its calm and spiritual presence adds a sense of serenity and reverence.

The tree is a powerhouse of phyto-chemicals like eugenol, linalool, flavonoids, sterols, and alkaloids. Almost all parts—leaves, flowers, fruits, bark, and roots—contain valuable bioactive compounds.

These components are known for antibacterial, antifungal, anti-inflammatory, and analgesic properties. It's widely used in traditional medicine for treating colds, wounds, stomach aches, and skin problems.

The flowers are used in poojas, and the wood, fruit shells, and fragrance also hold economic and cultural importance.

The tree is often worshipped by childless couples, believing it brings blessings and fertility.

In addition to its sacred significance, the Nagalingam flower enhances biodiversity and supports pollinators like bees and birds.

Its vibrant presence in our environment is a reminder of the deep connection between nature, spirituality, and healing.

Let's appreciate and protect this valuable tree, a living example of how science and tradition thrive together in harmony.

THE REAL BATTLE: FIGHTING FOR HUMANITY

**THIS IS NOT THE TIME TO WAGE WAR AGAINST OTHER NATIONS;
IT IS A TIME TO WAGE WAR AGAINST GLOBAL POVERTY.**

**THIS IS NOT THE TIME TO WAGE WAR AGAINST OTHER NATIONS;
IT IS A TIME TO WAGE WAR AGAINST WATER SCARCITY.**

**THIS IS NOT THE TIME TO WAGE WAR AGAINST OTHER NATIONS;
IT IS A TIME TO WAGE WAR AGAINST POLLUTION.**

**THIS IS NOT THE TIME TO WAGE WAR AGAINST OTHER NATIONS;
IT IS A TIME TO WAGE WAR AGAINST GLOBAL WARMING.**

**THIS IS NOT THE TIME FOR WAGING WAR BETWEEN NATIONS;
IT IS A TIME FOR WAGING WAR AGAINST NEW-AGE DISEASES.**

**THIS IS NOT THE TIME FOR WAGING WAR BETWEEN NATIONS;
IT IS A TIME FOR WAGING WAR AGAINST RISING UNEMPLOYMENT.**

**THIS IS NOT THE TIME FOR WAGING WAR BETWEEN NATIONS;
IT IS A TIME FOR WAGING WAR AGAINST INCREASING RELIGIOUS DISHARMONY.**

**THIS IS NOT THE TIME FOR WAGING WAR BETWEEN NATIONS;
IT IS A TIME FOR WAGING WAR AGAINST HARMFUL DRUGS.**

**THIS IS NOT THE TIME FOR WAGING WAR BETWEEN NATIONS;
IT IS A TIME FOR WAGING WAR AGAINST CRIMES COMMITTED AGAINST WOMEN.**

**THIS IS NOT THE TIME FOR WAGING WAR BETWEEN NATIONS;
IT IS A TIME FOR WAGING WAR AGAINST CHILD ABUSE.**

**THIS IS NOT THE TIME FOR WAGING WAR BETWEEN NATIONS;
IT IS A TIME FOR WAGING WAR AGAINST GREEDY BUSINESSES.**

MAPS CAN DIVIDE US, BUT HUMANITY SHOULD UNITE US.

BORDERS CAN STOP US, BUT LOVE CAN BRIDGE US.

WARS CAN BE WAGED AT THE STROKE OF A PEN, BUT NO NUMBER OF PENS AND PAPER CAN BRING BACK THE DEAD.

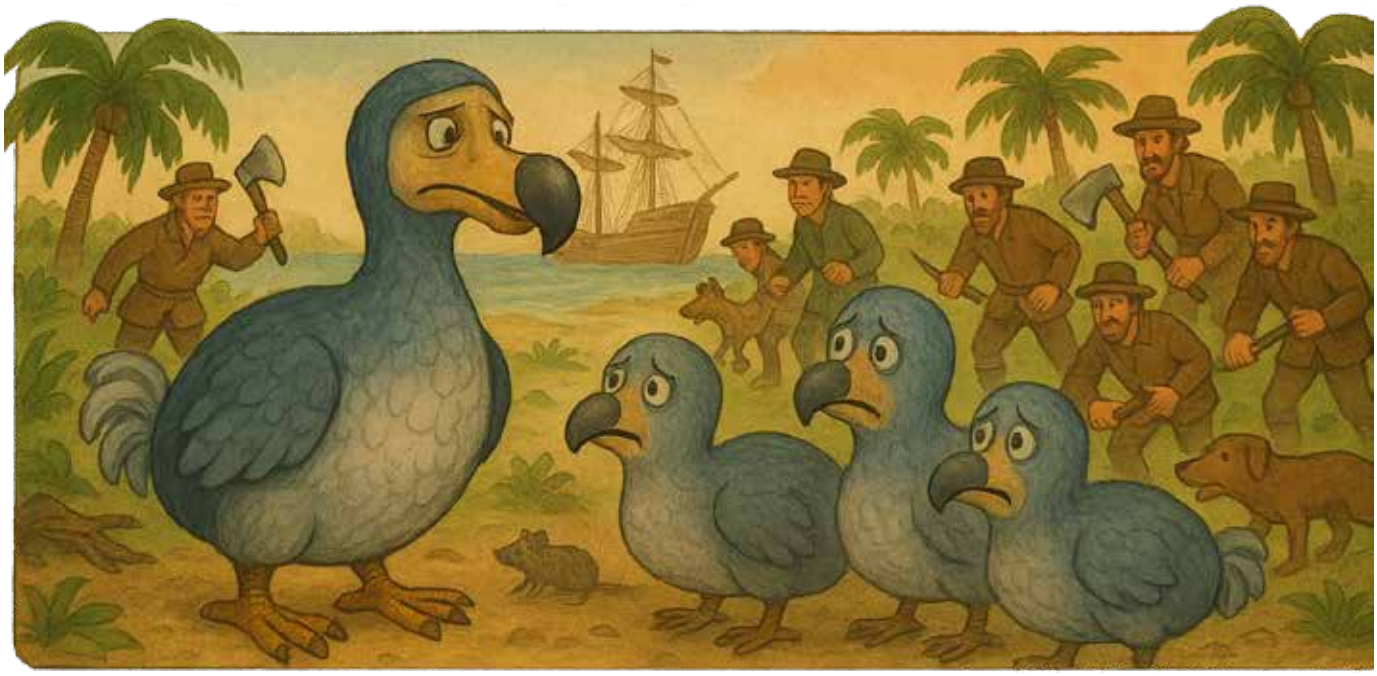
LET US END THE WAR BETWEEN NATIONS AND WORK TOWARDS GLOBAL PEACE AND HARMONY.

Courtesy Mr. M. L. Narendra Kumar

From Comfort to Extinction: The Dodo's Wake-Up Call

There was once a bird named **Daru the Dodo** who lived on the lush, quiet island of Mauritius. Daru didn't have to hunt, fight, or fly. Every day, he strolled along the beach, nibbling fruit, watching the waves, and laughing with his dodo friends. "Why worry?" he'd say. "Everything here is perfect." And for a long time, it was.

Generations passed, and the dodos grew slower, heavier, and more relaxed. They forgot how to flap their wings. They forgot how to look out for danger. The world beyond the island was full of change and challenge - but Daru's world? It stayed the same. So, the dodos stayed the same too.



Then, one morning, something different happened. Strange creatures arrived on boats-humans-and with them, dogs, rats, and axes. The island shook with noise and footsteps. Trees fell. Nests were destroyed. The dodos, confused and frightened, gathered around Daru. "What do we do?" they cried. But Daru had no answer. They had never prepared for change. They had never needed to-until it was too late.

Within just a few decades, the dodos were gone. Not because they were weak. Not because they didn't care. But because they had built their lives in the comfort zone, believing it would last forever. Daru's island of peace had turned into a place of silence-and his story became a symbol of what happens when we stop growing.

Today, we may not face predators with teeth, but we face change every day-new technologies, new expectations, and new challenges. If we stay still while the world moves forward, we risk becoming like Daru.

Let This Story Remind Us: Comfort Feels Safe, But Only Growth Ensures Survival.

Supreme Court gets its new CJI

Justice Bhushan Ramkrishna Gavai took oath on May 14, 2025 as the 52nd Chief Justice of India, making history as the first Buddhist to lead the country's judiciary and only the second judge from the Scheduled Castes to rise to this position.

As such, his elevation marks a significant step toward greater representation and inclusivity within the Indian legal system.

Justice B. R. Gavai, the senior-most judge of the Supreme Court, succeeded Chief Justice Sanjiv Khanna. His term will run until November 23, 2025.

Indian Naval Women Officers Make History

3 cyclones, 4 continents, 50,000 km—Lt Commanders Dilna K and Roopa Alagirisamy of the Indian Navy completed Navika Sagar Parikrama II, a daring, eight-month circumnavigation aboard INSV Tarini.

INSV Tarini, a state-of-the-art 56-foot sailing vessel, has been their steadfast companion throughout this voyage.

After eight months of sailing across the world's three largest oceans and navigating some of the remotest and most challenging maritime zones, two Indian Navy officers have returned to Goa on 29th May, achieving a rare feat in Indian Naval history—a double-handed circumnavigation under sail.

The voyage was undertaken without port assistance and relied entirely on wind power for propulsion.

India's Bhargavastra: A New Anti-Drone Weapon System

Akashteer ("Sky Arrow") is an Indian mobile air defence system providing a real-time, unified air picture. It integrates radars, sensors, and communication to automate the detection, tracking, and engagement of aerial threats like aircraft and drones. Part of the C4ISR framework, it enhances coordination and decision-making for effective air defence.

On May 9 and 10, Pakistan launched deadly missiles and drones at India, but India's Akashteer emerged as a silent warrior, detecting, tracking, and neutralising a barrage of missiles and drones.

Akashteer is an Indian Air Defence Control & Reporting System developed by Bharat Electronics Limited (BEL). It is intended to strengthen the capabilities of the Indian Army's Corps of Army Air Defence.

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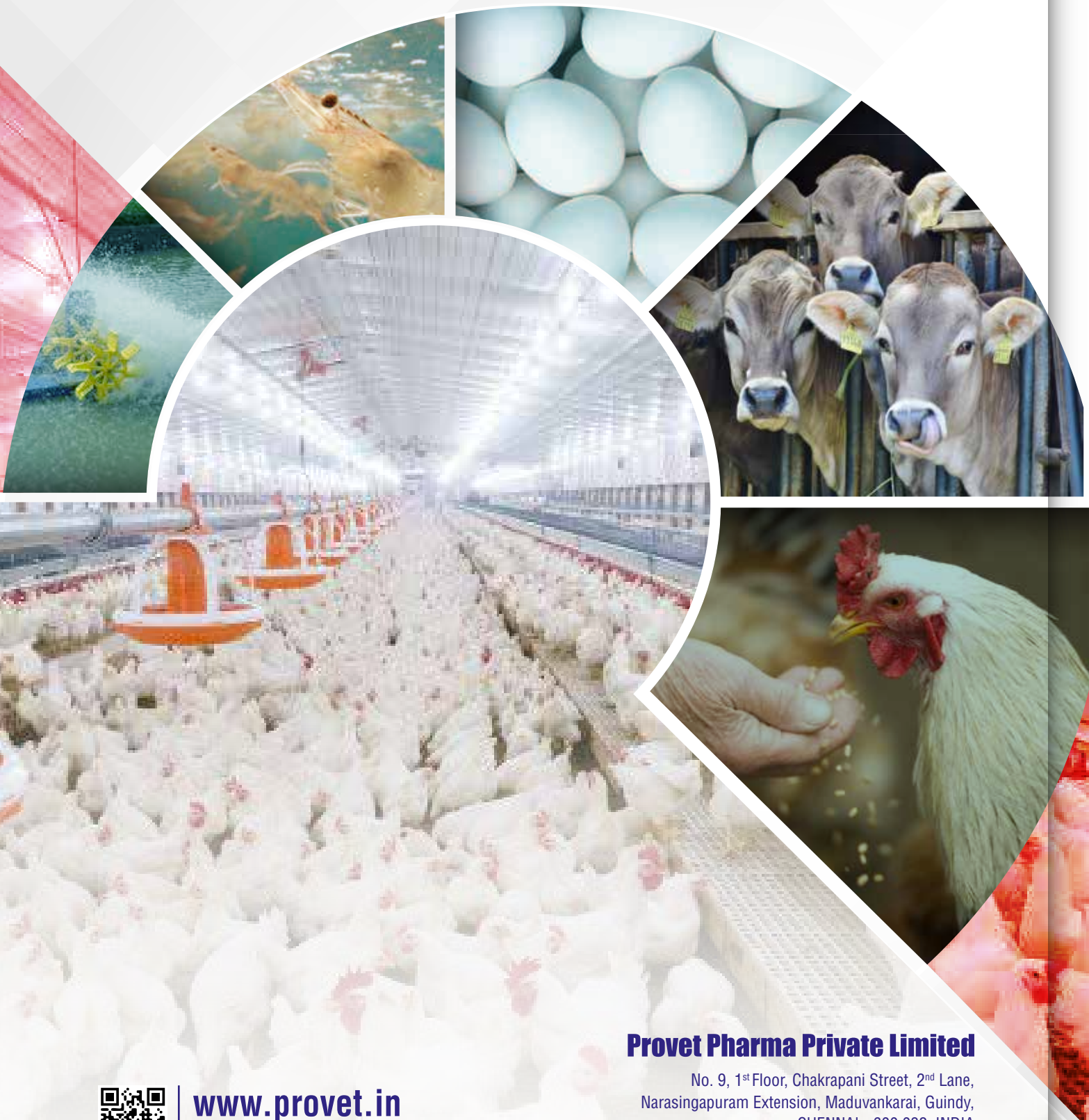

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