

# LIVESTOCK TECHNOLOGY

Pulse of Livestock Industry

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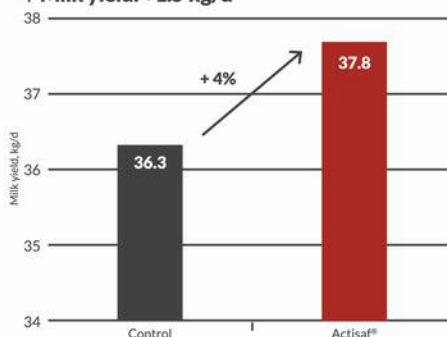
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4. Marbini et al., 2008. How does live yeast differ from other probiotics to stabilize dairy SCL? In: High Performance Dairy Cows, J. Dairy Sci. 91: 3528-3535.  
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## War crisis increases the cost of milk production

Input costs are rising daily, making farmers' call for higher milk prices justified, while the government aims to balance farmer welfare and consumer affordability. Farmers have reportedly demanded a price hike of up to ₹10 per litre, although the government has not yet finalised the exact quantum or timing of the increase. The proposed hike underscores a recurring challenge in the dairy sector—ensuring fair farmer remuneration amid rising costs while maintaining consumer price stability, a balance that continues to shape milk pricing policies across states.

Dairy farming families in Karnataka equipped with biogas plants have remained largely unaffected by the ongoing LPG shortage, as cow dung-based energy systems provide a reliable and self-sufficient alternative for cooking fuel. The trend is especially visible in regions like Dakshina Kannada, where farmers have integrated dairy and energy production. Farmers with operational biogas units can eliminate reliance on LPG cylinders by using dung from their cattle to generate daily cooking gas, ensuring uninterrupted household operations despite supply disruptions.

Uttar Pradesh has emerged as India's leading milk-producing state, recording a nearly 40% increase in milk production from 277 lakh metric tonnes in 2016-17 to over 388 lakh metric tonnes in 2024-25, marking an increase of more than 111 lakh metric tonnes. This surge has positioned Uttar Pradesh ahead of key dairy states such as Rajasthan, Madhya Pradesh, Gujarat and Maharashtra. The state now contributes around 16% of India's total milk production, the highest share in the country, while the top five milk-producing states together account for 54% of national output. Officials attribute this growth to sustained policy support, expansion of dairy infrastructure, and strong grassroots participation, with the Animal Husbandry Department emphasising improved supply chains and rural engagement as key drivers.

Rural India's growth cannot rely solely on government schemes, as structural tax reforms are essential to boost incomes and sustainability, particularly in agriculture and dairy sectors. While numerous welfare schemes exist, they often fail to address core income challenges, whereas tax relief can directly improve farmers' net earnings and incentivise value addition. For instance, farmers frequently sell raw milk instead of processing it due to a lack of tax incentives, limiting their income potential. Tax reforms could encourage rural enterprises to move up the value chain, enhance profitability, and reduce dependency on subsidies. The current system, where agricultural income is largely tax-exempt and indirect taxes like GST impact rural businesses, creates distortions that hinder growth. Experts argue that simplifying tax structures and offering targeted relief would strengthen rural economies more effectively than expanding schemes alone.

Dairy farmers in Tamil Nadu have raised serious concerns over the lack of attention to their core issues, warning that persistent gaps in policy support and implementation are affecting the sustainability of the sector. Farmer representatives highlighted that despite the state's strong dairy ecosystem, key structural challenges remain unresolved, impacting both productivity and income stability. Among the primary concerns flagged are low milk procurement prices, rising input costs, and inadequate infrastructure support, including gaps in chilling, storage, and distribution systems. Farmers also pointed to delays in payments and insufficient policy focus on improving on-ground conditions, which are critical for sustaining small and marginal dairy producers.

Editor



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PULSE OF LIVESTOCK INDUSTRY

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# NUQO Animal Nutrition India Announces Two Key Appointments in North India to Drive Market Expansion



NUQO Animal Nutrition India Pvt. Ltd. has announced the appointment of two experienced professionals, Yogesh Srivastav and Prashant Kurele as Regional Sales Managers in North India, where they will be responsible for driving market expansion and customer partnerships across their respective regions. Further strengthening its commercial team as the company continues to expand its presence in the Indian animal nutrition market.

Yogesh Srivastav joins NUQO with over ten years of experience in animal nutrition and poultry business development. Prior to joining NUQO, he held key roles at Cargill Animal Nutrition and Huvepharma, where he managed strategic accounts and contributed to business growth across Uttar Pradesh and Uttarakhand.

Prashant Gupta has more than a decade of experience in animal health and poultry sales. He has worked with leading organizations such as MSD Animal Health, Zoetis India Ltd., Virbac Animal Health India Pvt. Ltd. and Provimi Animal Nutrition India Pvt. Ltd., building strong expertise in market development and customer engagement.

Both professionals will report to Dr. Krishnamurthy, Commercial Director - South Asia at NUQO Animal Nutrition India.

Commenting on the appointments, Neeraj Kumar Srivastava, Managing Director - South Asia at NUQO Animal Nutrition India, said:

"India continues to be a key growth market for NUQO, and strengthening our commercial team is essential as we expand our footprint. Yogesh and Prashant bring valuable industry experience and market understanding, and I am confident they will contribute significantly to delivering value to our customers and partners."

Dr. Krishnamurthy, Commercial Director - South Asia, added:

"North India is a key market for NUQO, and strengthening our commercial capabilities in this region is a priority for us. Yogesh and Prashant bring strong field experience and proven track records in customer engagement and business development. Their addition to the team will help us further expand our reach and deliver innovative nutritional solutions that support the productivity and sustainability goals of our customers."

Reena Rani, Head of Marketing - South Asia, also commented:

"At NUQO, we believe strong teams drive strong brands. With Yogesh and Prashant joining our commercial team, we are further enhancing our ability to support customers with innovative solutions and closer market engagement. Their addition reflects NUQO's commitment to building a dynamic and customer-focused organization in India."

NUQO continues to strengthen its presence in India in delivering innovative, sustainable solutions for the animal nutrition industry.




Yogesh Srivastav




Prashant Kurele

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ਯੁਵਰਾਜ ਸਿੰਘ\*

ਜਿਵੇਂ ਇੱਕ ਮਜ਼ਬੂਤ ਮਕਾਨ ਲਈ ਮਜ਼ਬੂਤ ਨੀਂਹ ਹੋਣੀ ਜ਼ਰੂਰੀ ਹੁੰਦੀ ਹੈ। ਚੰਗੀ ਫਸਲ ਲਈ ਵਧੀਆ ਬੀਜ ਲਾਜ਼ਮੀ ਹੁੰਦਾ ਹੈ। ਉਸੇ ਤਰ੍ਹਾਂ ਚੰਗੀ ਲਵੇਰੀ ਦੀ ਸ਼ੁਰੂਆਤ ਵੀ ਉਸ ਦੇ ਜਨਮ ਦੇ ਸਮੇਂ ਤੋਂ ਹੀ ਹੋ ਜਾਂਦੀ ਹੈ। ਕੱਟੜੂ ਜਾਂ ਵੱਛੜੂ ਦੇ ਜਨਮ ਤੋਂ ਬਾਅਦ ਪਹਿਲੇ ਕੁੱਝ ਘੰਟਿਆਂ ਵਿੱਚ ਦਿੱਤੀ ਜਾਣ ਵਾਲੀ ਖੁਰਾਕ ਉਸਦੀ ਸਿਹਤ, ਵਾਧੇ ਅਤੇ ਭਵਿੱਖ ਦੀ ਦੁੱਧ ਉਤਪਾਦਕਤਾ ਉੱਤੇ ਡੂੰਘਾ ਅਸਰ ਪਾਉਂਦੀ ਹੈ। ਇਹ ਪਹਿਲੀ ਅੰਮ੍ਰਿਤ ਸਮਾਨ ਖੁਰਾਕ ਬਹੁਲੀ/ਖੀਸ (ਕੋਲੋਸਟਰਮ) ਕਹਾਉਂਦੀ ਹੈ। ਆਓ ਜਾਣੀਏ ਕਿ ਬਹੁਲੀ ਕੀ ਹੈ ਅਤੇ ਕੱਟੜੂ-ਵੱਛੜੂ ਲਈ ਇਹ ਇੰਨੀ ਮਹੱਤਵਪੂਰਨ ਕਿਉਂ ਹੈ।

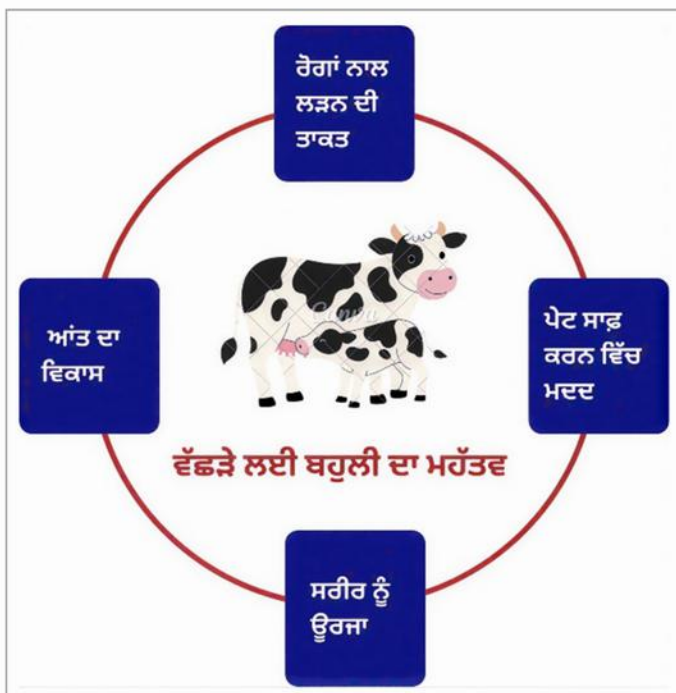
## ਬਹੁਲੀ ਕੀ ਹੈ?

ਦੁਧਾਰੂ ਪਸ਼ੂਆਂ ਦੇ ਡਰਾਈ ਪੀਰੀਅਡ ਦੌਰਾਨ ਉਸਦੇ ਖੂਨ ਦੇ ਕੁੱਝ ਤੱਤ ਅਤੇ ਦੁੱਧ ਗ੍ਰੰਥੀਆਂ ਦੇ ਕੁੱਝ ਤੱਤ ਲੇਵੇ ਵਿੱਚ ਇਕੱਠੇ ਹੋ ਜਾਂਦੇ ਹਨ। ਪਸ਼ੂ ਦੇ ਸੂਣ ਤੋਂ ਬਾਅਦ, ਜੋ ਪਹਿਲਾ ਦੁੱਧ ਨਿਕਲਦਾ ਹੈ ਉਸਨੂੰ ਬਹੁਲੀ ਕਿਹਾ ਜਾਂਦਾ ਹੈ। ਇਹ ਆਮ ਦੁੱਧ ਨਾਲੋਂ ਕਾਫੀ ਵੱਖਰੀ ਅਤੇ ਪੋਸ਼ਟਿਕ ਹੁੰਦੀ ਹੈ। ਇਸ ਵਿੱਚ ਖਾਸ ਕਰਕੇ ਇਮਿਊਨੋਗਲੋਬਿਨ-ਜੀ (IgG) ਆਮ ਦੁੱਧ ਨਾਲੋਂ ਲੱਗਭਗ 60-70 ਗੁਣਾ ਵੱਧ ਹੁੰਦਾ ਹੈ। ਇਸ ਤੋਂ ਇਲਾਵਾ ਇਸ ਵਿੱਚ ਪ੍ਰੋਟੀਨ ਲਗਭਗ ਚਾਰ ਗੁਣਾ, ਫੈਟ ਅਤੇ ਕੈਲਸ਼ੀਅਮ ਦੋ ਗੁਣਾ ਵੱਧ ਹੁੰਦਾ ਹੈ। ਆਇਰਨ ਅਤੇ ਵਿਟਾਮਿਨ ਏ ਵਰਗੇ ਤੱਤ ਵੀ ਦਸ ਗੁਣਾ ਵੱਧ ਮਾਤਰਾ ਵਿੱਚ ਪਾਏ ਜਾਂਦੇ ਹਨ। ਇਹ ਸਮਝਣਾ ਜ਼ਰੂਰੀ ਹੈ ਕਿ ਇਮਿਊਨੋਗਲੋਬਿਨ-ਜੀ (IgG) ਹੀ

ਹੈ ਜੋ ਪਸ਼ੂ ਨੂੰ ਬਿਮਾਰੀਆਂ ਨਾਲ ਲੜਨ ਦੀ ਤਾਕਤ ਪ੍ਰਦਾਨ ਕਰਦਾ ਹੈ। ਇਸ ਕਰਕੇ ਬਹੁਲੀ ਨਵਜੰਮੇ ਕੱਟੜੂ-ਵੱਛੜੂ ਲਈ ਉਰਜਾ ਅਤੇ ਬਿਮਾਰੀਆਂ ਨਾਲ ਲੜਨ ਦੀ ਤਾਕਤ ਦਾ ਸਭ ਤੋਂ ਪਹਿਲਾ ਸਰੋਤ ਹੈ। ਬਹੁਲੀ ਨਵਜੰਮੇ ਪਸ਼ੂ ਦਾ ਬਿਮਾਰੀਆਂ ਨਾਲ ਲੜਨ ਦਾ ਪਹਿਲਾ ਸੁਰੱਖਿਆ ਕਵਚ ਹੁੰਦਾ ਹੈ।

## ਬਹੁਲੀ ਕੱਟੜੂ-ਵੱਛੜੂ ਲਈ ਕਿਉਂ ਜ਼ਰੂਰੀ ਹੈ?

- 1. ਬਿਮਾਰੀਆਂ ਨਾਲ ਲੜਨ ਦੀ ਤਾਕਤ:-** ਕੁਦਰਤ ਦਾ ਨਿਯਮ ਇਹ ਹੈ ਕਿ ਗਰਭ ਦੌਰਾਨ ਬੱਚਾ ਜੇਰ ਦੀ ਬਣਤਰ ਕਾਰਨ ਆਪਣੀ ਮਾਂ ਤੋਂ ਰੋਗ-ਰੋਕੂ ਤੱਤ ਇਮਿਊਨੋਗਲੋਬਿਨ-ਜੀ (IgG) ਨਹੀਂ ਲੈ ਸਕਦਾ। ਇਸ ਕਰਕੇ ਨਵਜੰਮੇ ਕੱਟੜੂ-ਵੱਛੜੂ ਵਿੱਚ ਇਮਿਊਨੋਗਲੋਬਿਨ ਨਹੀਂ ਹੁੰਦੇ ਅਤੇ ਨਾ ਹੀ ਬਿਮਾਰੀਆਂ ਨਾਲ ਲੜਨ ਦੀ ਸਮਰੱਥਾ ਹੁੰਦੀ ਹੈ। ਬਹੁਲੀ ਇਹ ਲੋੜੀਂਦਾ ਤੱਤ ਪ੍ਰਦਾਨ ਕਰਦੀ ਹੈ ਜੋ ਉਸਨੂੰ ਬਿਮਾਰੀਆਂ ਨਾਲ ਲੜਨ ਦੀ ਤਾਕਤ ਦਿੰਦੇ ਹਨ।
- 2. ਉਰਜਾ ਦਾ ਸਰੋਤ:-** ਬਹੁਲੀ ਵਿੱਚ ਫੈਟ ਅਤੇ ਪ੍ਰੋਟੀਨ ਆਮ ਦੁੱਧ ਨਾਲੋਂ ਕਈ ਗੁਣਾ ਵੱਧ ਹੁੰਦੇ ਹਨ, ਜਿਸ ਨਾਲ ਨਵਜੰਮੇ ਵੱਛੜੂ ਨੂੰ ਤੁਰੰਤ ਉਰਜਾ ਮਿਲਦੀ ਹੈ। ਨਵਜੰਮੇ ਕੱਟੜੂ-ਵੱਛੜੂ ਦੇ ਸਰੀਰ ਵਿੱਚ ਉਰਜਾ ਦੇ ਭੰਡਾਰ ਪਹਿਲਾਂ ਹੀ ਬਹੁਤ ਘੱਟ ਹੁੰਦੇ ਹਨ। ਇਸ ਲਈ ਜਨਮ ਤੋਂ ਤੁਰੰਤ ਬਾਅਦ ਸਮੇਂ ਸਿਰ ਬਹੁਲੀ ਪਿਲਾਉਣਾ ਬਹੁਤ ਜ਼ਰੂਰੀ ਹੁੰਦਾ ਹੈ, ਤਾਂ ਜੋ ਉਸਨੂੰ ਤੁਰੰਤ ਉਰਜਾ ਮਿਲ ਸਕੇ ਅਤੇ ਉਹ ਕਮਜ਼ੋਰ ਨਾ ਪਵੇ।
- 3. ਪਾਚਨ ਪ੍ਰਣਾਲੀ ਦੇ ਵਿਕਾਸ ਲਈ ਜ਼ਰੂਰੀ:-** ਬਹੁਲੀ ਵਿੱਚ ਲੱਗਭਗ 90 ਤਰ੍ਹਾਂ ਦੇ ਤੱਤ ਪਾਏ ਜਾਂਦੇ ਹਨ, ਜਿਨ੍ਹਾਂ ਵਿੱਚ ਹਾਰਮੋਨ, ਐਂਜ਼ਾਈਮ ਅਤੇ ਗਰੇਬ ਫੈਕਟਰ ਸ਼ਾਮਲ ਹਨ। ਇਹ ਤੱਤ ਅੰਤੜੀਆਂ ਦੇ ਵਿਕਾਸ ਵਿੱਚ ਮਦਦ ਕਰਦੇ ਹਨ ਅਤੇ ਭਵਿੱਖ ਵਿੱਚ ਖੁਰਾਕ ਦੇ ਪਚਾਅ ਅਤੇ ਜਜ਼ਬ ਹੋਣ ਨੂੰ ਸੁਧਾਰਦੇ ਹਨ। ਇਸ ਲਈ ਭਵਿੱਖ ਵਿੱਚ ਪਸ਼ੂ ਦੇ ਸ਼ਰੀਰਕ ਵਾਧੇ ਲਈ ਬਹੁਲੀ ਅਤੀ ਜ਼ਰੂਰੀ ਹੈ।
- 4. ਭਵਿੱਖ ਦੀ ਉਤਪਾਦਕਤਾ 'ਤੇ ਅਸਰ:-** ਕਈ ਵਿਗਿਆਨਕ ਅਧਿਐਨਾਂ ਵਿੱਚ ਪਾਇਆ ਗਿਆ ਹੈ ਕਿ ਜਿਹੜੇ ਕੱਟੜੂ-ਵੱਛੜੂ ਬਚਪਨ ਵਿੱਚ ਸਹੀ ਮਾਤਰਾ ਵਿੱਚ ਬਹੁਲੀ ਪੀਂਦੇ ਹਨ, ਉਹਨਾਂ ਦਾ ਸ਼ਰੀਰਕ ਵਿਕਾਸ ਵਧੀਆ ਹੁੰਦਾ ਹੈ ਅਤੇ ਭਵਿੱਖ ਵਿੱਚ ਉਹਨਾਂ ਦੀ ਦੁੱਧ ਉਤਪਾਦਕਤਾ ਵੀ ਵੱਧ ਹੋ ਸਕਦੀ ਹੈ।





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**5. ਲੈਕਸੇਟਿਵ ਪ੍ਰਭਾਵ (ਪੇਟ ਸਾਫ਼ ਕਰਨ ਵਾਲਾ):-**  
ਬਹੁਲੀ ਲੈਕਸੇਟਿਵ (ਪੇਟ ਸਾਫ਼ ਕਰਨ ਵਾਲਾ) ਪ੍ਰਭਾਵ ਰੱਖਦੀ ਹੈ। ਗਰਭ ਦੌਰਾਨ ਕੱਟੜੂ-ਵੱਛੜੂ ਦੇ ਪੇਟ ਵਿੱਚ ਬਣੇ ਪਹਿਲੇ ਮਲ ਨੂੰ ਡਾਸਾ/ਮੀਕੋਨਿਯਮ ਕਹਿੰਦੇ ਹਨ। ਬਹੁਲੀ ਪੀਣ ਨਾਲ ਇਹ ਡਾਸਾ/ਮੀਕੋਨਿਯਮ ਆਸਾਨੀ ਨਾਲ ਸਰੀਰ ਤੋਂ ਬਾਹਰ ਨਿਕਲ ਜਾਂਦਾ ਹੈ। ਜੇਕਰ ਇਹ ਅੰਦਰ ਹੀ ਰੁਕਿਆ ਰਹਿ ਜਾਵੇ ਤਾਂ ਸਮੱਸਿਆਵਾਂ ਪੈਦਾ ਹੋ ਸਕਦੀਆਂ ਹਨ।

ਬਹੁਲੀ ਪਿਲਾਉਣ ਦਾ ਸਹੀ ਸਮਾਂ, ਮਾਤਰਾ ਅਤੇ ਤਰੀਕਾ:-

**ਸਮਾਂ:-** ਕੱਟੜੂ-ਵੱਛੜੂ ਦੇ ਜਨਮ ਤੋਂ ਪਹਿਲੇ 6 ਘੰਟਿਆਂ (ਜਿਆਦਾ ਵਧੀਆ ਹੈ ਕਿ ਜਨਮ ਤੋਂ ਪਹਿਲੇ 2 ਘੰਟਿਆਂ) ਦੇ ਅੰਦਰ-ਅੰਦਰ ਬਹੁਲੀ ਪਿਲਾਉਣਾ ਜ਼ਰੂਰੀ ਹੈ। ਇਸ ਦਾ ਕਾਰਨ ਇਹ ਹੈ ਕਿ ਇਮਿਊਨੋਗਲੋਬਿਊਲਿਨ-ਜੀ (IgG) ਅੰਤੜੀਆਂ ਰਾਹੀਂ ਖੂਨ ਵਿੱਚ ਸਿਰਫ ਪਹਿਲੇ 24 ਘੰਟਿਆਂ ਦੌਰਾਨ ਹੀ ਜਾ ਸਕਦੇ ਹਨ ਅਤੇ ਇਹ ਸਮਰੱਥਾ ਜਨਮ ਸਮੇਂ ਤੋਂ ਹੀ ਘਟਣੀ ਸ਼ੁਰੂ ਹੋ ਜਾਂਦੀ ਹੈ ਅਤੇ 24 ਘੰਟਿਆਂ ਤੋਂ ਬਾਅਦ ਖਤਮ ਹੋ ਜਾਂਦੀ ਹੈ। ਇਸ ਲਈ ਜਨਮ ਤੋਂ ਤੁਰੰਤ ਬਾਅਦ ਸਮੇਂ ਸਿਰ ਬਹੁਲੀ ਪਿਲਾਉਣਾ ਬਹੁਤ ਜ਼ਰੂਰੀ ਹੁੰਦਾ ਹੈ।

**ਮਾਤਰਾ:-** ਵਿਗਿਆਨੀਆਂ ਦੇ ਅਨੁਸਾਰ ਬਹੁਲੀ ਦੀ ਮਾਤਰਾ ਕੱਟੜੂ-ਵੱਛੜੂ ਦੇ ਭਾਰ ਦਾ ਲਗਭਗ 10% ਹੋਣੀ ਚਾਹੀਦੀ ਹੈ। ਉਦਾਹਰਨ ਵਜੋਂ ਜੇਕਰ ਵੱਛੜੂ ਦਾ ਭਾਰ 30 ਕਿਲੋ ਹੈ ਤਾਂ ਉਸਨੂੰ ਲਗਭਗ 3 ਲੀਟਰ ਬਹੁਲੀ ਦੇਣੀ ਚਾਹੀਦੀ ਹੈ।

**ਤਰੀਕਾ:-** ਸੱਭ ਤੋਂ ਵਧੀਆ ਤਾਂ ਇਹ ਹੈ ਕਿ ਵੱਛੜੂ ਬਹੁਲੀ ਆਪਣੀ ਮਾਂ ਦੇ ਥਣਾਂ ਤੋਂ ਕੁਦਰਤੀ ਤਰੀਕੇ ਨਾਲ ਹੀ ਪੀਵੇ। ਜੇਕਰ ਉਹ ਕਮਜ਼ੋਰ ਹੋਵੇ ਤਾਂ ਬੋਤਲ ਅਤੇ ਨਿੱਪਲ ਦੀ ਮਦਦ ਨਾਲ ਵੀ ਬਹੁਲੀ ਪਿਲਾਈ ਜਾ ਸਕਦੀ ਹੈ।

**ਜੇਕਰ ਮਾਂ ਦੀ ਬਹੁਲੀ ਮੌਜੂਦ ਨਾ ਹੋਵੇ ਤਾਂ ਕੀ ਕਰੀਏ?**

1. ਕਿਸੇ ਹੋਰ ਨਵੀਂ ਸੂਈ ਗਾਂ ਜਾਂ ਮੱਝ ਦੀ ਬਹੁਲੀ ਵਰਤੀ ਜਾ ਸਕਦੀ ਹੈ।
2. ਪਹਿਲਾਂ ਤੋਂ ਸੰਭਾਲ ਕੇ ਰੱਖੀ ਗਈ ਜੰਮੀ ਹੋਈ ਬਹੁਲੀ ਨੂੰ ਵਰਤਿਆ ਜਾ ਸਕਦਾ ਹੈ।
3. ਬਜ਼ਾਰ ਵਿੱਚ ਉਪਲਬਧ “ਕੋਲੋਸਟ੍ਰਮ ਰਿਪਲੇਸਰ” ਵੀ ਵਰਤੇ ਜਾ ਸਕਦੇ ਹਨ। ਕਿਸਾਨ ਪਾਊਡਰ ਨੂੰ ਕੰਪਨੀ ਵੱਲੋਂ ਦਿੱਤੇ ਨਿਰਦੇਸ਼ਾਂ ਅਨੁਸਾਰ ਪਾਣੀ ਵਿੱਚ ਮਿਲਾ ਕੇ ਤਿਆਰ ਕਰ ਸਕਦੇ ਹਨ।
4. ਜੇਕਰ ਕੁਦਰਤੀ ਬਹੁਲੀ ਜਾਂ ਬਾਜ਼ਾਰ ਵਿੱਚ ਮਿਲਣ ਵਾਲਾ ਕੋਲੋਸਟ੍ਰਮ ਰਿਪਲੇਸਰ ਉਪਲਬਧ ਨਾ ਹੋਵੇ ਤਾਂ ਕਿਸਾਨ

ਘਰ ਵਿੱਚ ਵੀ ਬਹੁਲੀ ਤਿਆਰ ਕਰ ਸਕਦੇ ਹਨ। ਭਾਵੇਂ ਇਹ ਕੁਦਰਤੀ ਬਹੁਲੀ ਜਿੰਨੀ ਕਾਰਗਰ ਨਹੀਂ ਹੁੰਦੀ, ਪਰ ਆਖਰੀ ਵਿਕਲਪ ਵਜੋਂ ਇਸਦੀ ਵਰਤੋਂ ਕੀਤੀ ਜਾ ਸਕਦੀ ਹੈ। ਇਸਨੂੰ ਬਣਾਉਣ ਦੀ ਵਿਧੀ ਹੇਠ ਦਿੱਤੀ ਗਈ ਹੈ।

ਸਮਗਰੀ	ਮਾਤਰਾ
ਦੁੱਧ	1 ਲੀਟਰ
ਅੰਡੇ ਦੀ ਜਰਦੀ	2
ਅਰਿੰਡੀ ਦਾ ਤੇਲ	30 ਮਿਲੀਲੀਟਰ

ਇਹ ਸੱਭ ਚੰਗੀ ਤਰ੍ਹਾਂ ਮਿਲਾ ਕੇ ਕੱਟੜੂ-ਵੱਛੜੂ ਨੂੰ ਪਿਲਾਇਆ ਜਾ ਸਕਦਾ ਹੈ। ਇਹ 1 ਲੀਟਰ ਦੀ ਵਿਧੀ ਹੈ, ਇਸ ਨੂੰ ਕਿਸਾਨ 3 ਵਾਰ ਪਿਲਾਉਣ।

**ਬਹੁਲੀ ਦੀ ਗੁਣਵੱਤਾ ਦੇ ਮਿਆਰ :-**

- ਚੰਗੀ ਗੁਣਵੱਤਾ ਵਾਲੀ ਬਹੁਲੀ ਵਿੱਚ ਇਮਿਊਨੋ ਗਲੋਬਿਊਲਿਨ-ਜੀ (IgG) ਲਗਭਗ 50 ਗ੍ਰਾਮ ਪ੍ਰਤੀ ਲੀਟਰ ਹੋਣਾ ਚਾਹੀਦਾ ਹੈ।
- ਬ੍ਰਿਕਸ ਰੀਡਿੰਗ 22% ਤੋਂ ਵੱਧ ਹੋਣੀ ਚਾਹੀਦੀ ਹੈ। ਬਹੁਲੀ ਦੀ ਗੁਣਵੱਤਾ ਪਤਾ ਕਰਨ ਲਈ 'ਬ੍ਰਿਕਸ ਮੀਟਰ' ਵਰਤਿਆ ਜਾਂਦਾ ਹੈ। ਇਹ ਇੱਕ ਛੋਟਾ ਜਿਹਾ ਯੰਤਰ ਹੁੰਦਾ ਹੈ ਜੋ ਬਹੁਲੀ ਵਿੱਚ ਮੌਜੂਦ ਪੌਸ਼ਕ ਤੱਤਾਂ, ਖਾਸ ਕਰਕੇ ਰੋਗ-ਰੋਕੂ ਤੱਤਾਂ (ਇਮਿਊਨੋਗਲੋਬਿਊਲਿਨ-ਜੀ) (IgG), ਦੀ ਮਾਤਰਾ ਦਾ ਅੰਦਾਜ਼ਾ ਲਗਾਉਂਦਾ ਹੈ। ਜਿੰਨੀ ਬ੍ਰਿਕਸ ਰੀਡਿੰਗ ਵੱਧ ਹੋਵੇਗੀ, ਉੰਨੀ ਹੀ ਬਹੁਲੀ ਵਧੀਆ ਮੰਨੀ ਜਾਂਦੀ ਹੈ। ਆਮ ਤੌਰ 'ਤੇ 22% ਜਾਂ ਇਸ ਤੋਂ ਵੱਧ ਬ੍ਰਿਕਸ ਵਾਲੀ ਬਹੁਲੀ ਚੰਗੀ ਗੁਣਵੱਤਾ ਦੀ ਮੰਨੀ ਜਾਂਦੀ ਹੈ।
- ਚੰਗੀ ਗੁਣਵੱਤਾ ਵਾਲੀ ਬਹੁਲੀ ਵਿੱਚ ਸੂਖਮਜੀਵਾਣੂ 1,00,000 ਕਾਲੋਨੀ ਫਾਰਮ ਯੂਨਿਟ ਪ੍ਰਤੀ ਮਿਲੀਲੀਟਰ (cfu/mL) ਤੋਂ ਘੱਟ ਹੋਣੇ ਚਾਹੀਦੇ ਹਨ।

ਕੱਟੜੂ-ਵੱਛੜੂ ਦੇ ਸਰੀਰ ਵਿੱਚ ਬਹੁਲੀ ਦੇ ਸਹੀ ਤਰੀਕੇ ਨਾਲ ਜਜ਼ਬ ਹੋਣ ਦੇ ਸੰਕੇਤ

ਕੱਟੜੂ-ਵੱਛੜੂ ਨੂੰ ਬਹੁਲੀ ਪਿਲਾਉਣ ਦਾ ਮੁੱਖ ਮਕਸਦ ਉਸਨੂੰ ਬਿਮਾਰੀਆਂ ਨਾਲ ਲੜਨ ਦੀ ਤਾਕਤ ਦੇਣਾ ਹੁੰਦਾ ਹੈ। ਇਹ ਤਾਕਤ ਖਾਸ ਕਰਕੇ ਇਮਿਊਨੋਗਲੋਬਿਊਲਿਨ-ਜੀ (IgG) ਰਾਹੀਂ ਮਿਲਦੀ ਹੈ। ਜੇਕਰ ਕੱਟੜੂ-ਵੱਛੜੂ ਨੂੰ ਸਮੇਂ ਸਿਰ ਅਤੇ ਠੀਕ ਮਾਤਰਾ ਵਿੱਚ ਬਹੁਲੀ ਮਿਲਦੀ ਹੈ ਤਾਂ ਇਹ ਤੱਤ ਉਸਦੀ ਅੰਤੜੀਆਂ ਰਾਹੀਂ ਜਜ਼ਬ ਹੋ ਕੇ ਖੂਨ ਵਿੱਚ ਪਹੁੰਚ ਜਾਂਦੇ ਹਨ। ਇਸ ਦੇ ਸੰਕੇਤ ਹਨ :-



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- ਵਿਗਿਆਨਕ ਮਾਪਦੰਡਾਂ ਦੇ ਅਨੁਸਾਰ ਜਨਮ ਤੋਂ 24 ਘੰਟਿਆਂ ਤੱਕ ਕੱਟੜੂ-ਵੱਛੜੂ ਦੇ ਖੂਨ ਵਿੱਚ ਇਮਿਊਨੋ-ਗਲੋਬਿਊਲਿਨ-ਜੀ (IgG) ਦੀ ਮਾਤਰਾ ਘੱਟੋ-ਘੱਟ 10 ਗ੍ਰਾਮ ਪ੍ਰਤੀ ਲੀਟਰ ਹੋਣੀ ਚਾਹੀਦੀ ਹੈ। ਇਸ ਤੋਂ ਘੱਟ ਹੋਣ ਦੀ ਸਥਿਤੀ ਨੂੰ “ਫੇਲਿਅਰ ਆਫ ਪੈਸਿਵ ਟ੍ਰਾਂਸਫਰ” (Failure of Passive Transfer - FPT) ਕਿਹਾ ਜਾਂਦਾ ਹੈ, ਜਿਸ ਨਾਲ ਕੱਟੜੂ ਨੂੰ ਬਿਮਾਰੀਆਂ ਦਾ ਖਤਰਾ ਵੱਧ ਜਾਂਦਾ ਹੈ।
- ਇਸ ਦੇ ਨਾਲ ਹੀ ਕੱਟੜੂ ਦੇ ਖੂਨ ਵਿੱਚ ਟੋਟਲ ਸੀਰਮ ਪ੍ਰੋਟੀਨ ਦੀ ਮਾਤਰਾ ਵੀ ਬਹੁਲੀ ਦੇ ਸਹੀ ਤਰੀਕੇ ਨਾਲ ਜਜ਼ਬ ਹੋਣ ਦਾ ਇੱਕ ਸੌਖਾ ਸੰਕੇਤ ਮੰਨੀ ਜਾਂਦੀ ਹੈ। ਆਮ ਤੌਰ 'ਤੇ ਇਹ ਮਾਤਰਾ 5.5 ਤੋਂ 7.5 ਗ੍ਰਾਮ ਪ੍ਰਤੀ 100 ਮਿਲੀਲੀਟਰ ਖੂਨ ਹੋਣੀ ਚਾਹੀਦੀ ਹੈ (Total Serum Protein)। ਜੇਕਰ ਇਹ ਮਾਤਰਾ ਇਸ ਤੋਂ ਘੱਟ ਹੋਵੇ ਤਾਂ ਇਹ ਦਰਸਾਉਂਦਾ ਹੈ ਕਿ ਕੱਟੜੂ-ਵੱਛੜੂ ਨੂੰ ਲੋੜੀਂਦੀ ਮਾਤਰਾ ਵਿੱਚ ਬਹੁਲੀ ਨਹੀਂ ਮਿਲੀ ਜਾਂ ਉਸਦੇ ਸਰੀਰ ਨੇ ਇਸਨੂੰ ਠੀਕ ਤਰੀਕੇ ਨਾਲ ਜਜ਼ਬ ਨਹੀਂ ਕੀਤਾ।

**ਬਹੁਲੀ ਪਿਲਾਉਣ ਦੌਰਾਨ ਕਿਸਾਨਾਂ ਵੱਲੋਂ ਧਿਆਨ ਵਿੱਚ ਰੱਖਣ ਵਾਲੇ ਮਹੱਤਵਪੂਰਨ ਪਹਿਲੂ :-**



- ਕਈ ਵਾਰ ਕਿਸਾਨ ਕੱਟੜੂ ਦੇ ਜਨਮ ਤੋਂ ਬਾਅਦ ਬਹੁਲੀ ਪਿਲਾਉਣ ਵਿੱਚ ਦੇਰੀ ਕਰ ਦਿੰਦੇ ਹਨ, ਜਦਕਿ ਇਹ ਪਹਿਲੇ 2 ਘੰਟਿਆਂ ਦੇ ਅੰਦਰ ਪਿਲਾਉਣਾ ਜ਼ਰੂਰੀ ਹੁੰਦਾ ਹੈ।
- ਜੇਕਰ ਕੱਟੜੂ-ਵੱਛੜੂ ਨੂੰ ਲੋੜੀਂਦੀ ਮਾਤਰਾ ਵਿੱਚ ਬਹੁਲੀ ਨਾ ਦਿੱਤੀ ਜਾਵੇ ਤਾਂ ਉਸਨੂੰ ਪੂਰੀ ਉਰਜਾ ਅਤੇ ਰੋਗ-ਰੋਕੂ ਤੱਤ

ਨਹੀਂ ਮਿਲਦੇ। ਇਸ ਕਾਰਨ ਉਸਦੀ ਬਿਮਾਰੀਆਂ ਨਾਲ ਲੜਨ ਦੀ ਸਮਰੱਥਾ ਘੱਟ ਰਹਿ ਜਾਂਦੀ ਹੈ, ਜਿਸ ਨਾਲ ਦਸਤ, ਨਿਮੋਨੀਆ ਅਤੇ ਹੋਰ ਬਿਮਾਰੀਆਂ ਦਾ ਖਤਰਾ ਵੱਧ ਸਕਦਾ ਹੈ। ਇਸ ਤੋਂ ਇਲਾਵਾ ਉਸਦਾ ਵਿਕਾਸ ਵੀ ਹੌਲੀ ਰਹਿ ਸਕਦਾ ਹੈ ਅਤੇ ਭਵਿੱਖ ਵਿੱਚ ਉਸਦੀ ਉਤਪਾਦਕਤਾ ਉੱਤੇ ਵੀ ਮਾੜਾ ਅਸਰ ਪੈ ਸਕਦਾ ਹੈ।

- ਗੰਦੀ ਬੋਤਲ, ਬਾਲਟੀ ਜਾਂ ਨਿੱਪਲ ਨਾਲ ਬਹੁਲੀ ਪਿਲਾਉਣ ਨਾਲ ਬੈਕਟੀਰੀਆ ਕੱਟੜੂ ਦੇ ਸਰੀਰ ਵਿੱਚ ਚਲੇ ਜਾਂਦੇ ਹਨ ਅਤੇ ਬਿਮਾਰੀਆਂ ਦਾ ਖਤਰਾ ਵੱਧ ਜਾਂਦਾ ਹੈ।
- ਕਈ ਵਾਰ ਕਿਸਾਨ ਬਹੁਲੀ ਦੀ ਗੁਣਵੱਤਾ ਦੀ ਜਾਂਚ ਨਹੀਂ ਕਰਦੇ। ਘੱਟ ਗੁਣਵੱਤਾ ਵਾਲੀ ਬਹੁਲੀ ਵਿੱਚ ਰੋਗ-ਰੋਕੂ ਤੱਤ ਘੱਟ ਹੁੰਦੇ ਹਨ ਜਿਸ ਕਾਰਨ ਉਸਦੀ ਬਿਮਾਰੀਆਂ ਨਾਲ ਲੜਨ ਦੀ ਸਮਰੱਥਾ ਘੱਟ ਰਹਿ ਜਾਂਦੀ ਹੈ।
- ਕਈ ਵਾਰ ਕਮਜ਼ੋਰ ਕੱਟੜੂ ਆਪਣੇ ਆਪ ਥਣ ਨਹੀਂ ਚੁੰਘ ਸਕਦੇ। ਅਜਿਹੇ ਸਮੇਂ ਉਸਨੂੰ ਬੋਤਲ ਜਾਂ ਨਿੱਪਲ ਦੀ ਮਦਦ ਨਾਲ ਬਹੁਲੀ ਪਿਲਾਉਣੀ ਚਾਹੀਦੀ ਹੈ।
- ਕਈ ਕਿਸਾਨ ਵਧੀਆ ਗੁਣਵੱਤਾ ਵਾਲੀ ਬਹੁਲੀ ਨੂੰ ਜੰਮਾ ਕੇ ਰਾਖਵੀਂ ਬਹੁਲੀ ਵਜੋਂ ਸੰਭਾਲ ਕੇ ਨਹੀਂ ਰੱਖਦੇ, ਜੋ ਭਵਿੱਖ ਵਿੱਚ ਕਾਫੀ ਕੰਮ ਆ ਸਕਦੀ ਹੈ।

**ਸਿੱਟਾ:-**

ਅਖੀਰ ਵਿੱਚ ਇਹ ਕਹਿ ਸਕਦੇ ਹਾਂ ਕਿ ਬਹੁਲੀ ਨਵਜੰਮੇ ਕੱਟੜੂ-ਵੱਛੜੂ ਲਈ ਕੁਦਰਤ ਦੀ ਦਿੱਤੀ ਸੱਭ ਤੋਂ ਕੀਮਤੀ ਸੌਗਾਤ ਹੈ। ਜੇਕਰ ਕਿਸਾਨ ਕੱਟੜੂ ਦੇ ਜਨਮ ਤੋਂ ਤੁਰੰਤ ਬਾਅਦ ਠੀਕ ਸਮੇਂ, ਠੀਕ ਮਾਤਰਾ ਅਤੇ ਠੀਕ ਤਰੀਕੇ ਨਾਲ ਸਹੀ ਗੁਣਵੱਤਾ ਵਾਲੀ ਬਹੁਲੀ ਪਿਲਾਉਣ 'ਤੇ ਧਿਆਨ ਦੇਣ ਤਾਂ ਕੱਟੜੂ-ਵੱਛੜੂ ਦੀ ਸਿਹਤ, ਵਿਕਾਸ ਅਤੇ ਬਿਮਾਰੀਆਂ ਤੋਂ ਬਚਾਅ ਕਾਫੀ ਬਿਹਤਰ ਹੋ ਸਕਦਾ ਹੈ। ਯਾਦ ਰੱਖੋ — ਤੰਦਰੁਸਤ ਕੱਟੜੂ-ਵੱਛੜੂ ਹੀ ਭਵਿੱਖ ਦੇ ਵਧੀਆ ਦੁਧਾਰੂ ਪਸ਼ੂ ਦਾ ਆਧਾਰ ਹੁੰਦਾ ਹੈ। ਸਮੇਂ ਸਿਰ ਪਿਲਾਈ ਗਈ ਬਹੁਲੀ ਸਿਰਫ ਪਹਿਲੀ ਖੁਰਾਕ ਨਹੀਂ, ਸਗੋਂ ਕੱਟੜੂ-ਵੱਛੜੂ ਦੀ ਸਿਹਤਮੰਦ ਜ਼ਿੰਦਗੀ ਦੀ ਪਹਿਲੀ ਸੁਰੱਖਿਆ ਵੀ ਹੈ।

**ਯੁਵਰਾਜ ਸਿੰਘ\*<sup>1</sup>**

\*ਐਮ.ਵੀ.ਐੱਸ.ਸੀ. ਵਿੱਦਿਆਰਥੀ

ਪਸ਼ੂ ਆਹਾਰ ਵਿਭਾਗ, ਗੁਰੂ ਅੰਗਦ ਦੇਵ ਵੈਟਰਨਰੀ ਅਤੇ ਐਨੀਮਲ ਸਾਇੰਸਜ਼ ਯੂਨੀਵਰਸਿਟੀ, ਲੁਧਿਆਣਾ

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# HEAT STRESS

## MANAGEMENT IN DAIRY COWS:



Heat stress is one of the most critical challenges in dairy farming, particularly in tropical and subtropical climates. When the Temperature Humidity Index (THI) exceeds the comfort threshold, dairy cows experience reduced feed intake, altered metabolism, and significant losses in milk production.

Effective heat stress management requires a **multi-dimensional approach**, combining housing, ventilation, nutrition, and water management.

### 1. COW COMFORT

Cow comfort plays a direct role in determining feed intake, rumination, and productivity.

#### Bedding Management

- Use sand or dry bedding materials that dissipate heat efficiently
- Maintain clean, dry, and well-drained lying areas
- Wet bedding increases thermal load and microbial growth

#### Stocking Density

- Maintain  $\leq 100\%$  stocking density
- Avoid overcrowding to reduce competition and stress

#### Overcrowding leads to

- Increased heat load
- Reduced lying time
- Elevated cortisol levels



#### Practical Benchmark

Parameter	Ideal
Stocking density	100%
Lying time	10-12 hours/day
Stall cleanliness	Dry & clean



### 2. VENTILATION

Proper ventilation enhances heat dissipation and improves cow comfort.

#### Fan Management

- Air velocity at cow level: 2-3 m/s- Anemometers can help to measure it, it plays a key role specially in calf pens.
- Continuous airflow across feeding and resting areas

#### Sprinkler Systems

- Use large droplet sprinklers
- Cycle: 1-2 min ON, 5-10 min OFF - Depending on the temperature and humidity readings at the farm.
- Combine with fans for evaporative cooling

#### Foggers

- Suitable only in low humidity climates
- Avoid in high humidity conditions

#### Cooling Efficiency Chart

Method	Effectiveness	Condition
Fans only	Moderate	Dry climate
Fans + sprinklers	High	All climates
Foggers	Variable	Low humidity only





Global Brand to Manage DCAD during Humid season

# KACTUS

Make Your Cattle Comfortable this season



+ 20L-30L  
water  
intake

+ 5%  
Milk Fat  
increase

+ 2kg DMI  
increase

Kactus combines a series of ingredients which supplies essential Electrolytes, Glucogenic precursors and Natural Hepatic Protectant



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### 3. DRY MATTER INTAKE (DMI)

Heat stress reduces DMI, which directly affects milk yield and metabolic health.

#### Feeding Strategies

- Feed during cooler hours (early morning, late evening)
- Increase feeding frequency
- Ensure fresh and palatable feed



#### Rumen Stabilization

- Add buffers
- Use yeast cultures to maintain rumen pH

#### Energy Density

- Include bypass fat to reduce heat increment

#### DMI Decline vs THI

THI	DMI Change	THI	DMI Change
< 68	Normal	72-78	Moderate reduction (5-10%)
68-72	Slight reduction	> 78	Severe reduction (10-25%)

### 4. WATER

Water intake increases significantly during heat stress.

#### Guidelines

- Provide clean, cool water
- Ensure adequate trough space
- Place water points near feeding and resting areas

#### Water Intake vs Temperature

Temperature (°C)	Water Intake (L/day)
20-25	50-60
25-30	60-80
30-35	80-100
> 35	100-120



### 5. ROLE OF POTASSIUM & MAGNESIUM

Heat stress leads to electrolyte loss through sweating and salivation.

#### Potassium (K)

- Maintains osmotic balance
- Supports muscle and nerve function
- Recommended level: 1.5-1.7% of DM

#### Magnesium (Mg)

- Supports enzyme systems
- Improves stress tolerance
- Prevents neuromuscular issues



#### Electrolyte Requirement Adjustment

Mineral	Normal (%)	Heat Stress (%)
Potassium	1.0-1.2	1.5-1.7
Magnesium	0.25-0.30	0.30-0.35



### 6. GLUCOGENIC PRECURSORS: ENERGY MANAGEMENT

Heat stress alters metabolism and increases the risk of negative energy balance.

#### Common Sources

- Propylene glycol
- Glycerol



#### Benefits

- Rapid glucose supply
- Supports lactose synthesis
- Maintains milk production
- Reduces ketosis risk



#### Energy Strategy Comparison

Source	Heat Increment	Efficiency
Starch	High	Moderate
Fat	Low	High
Glucogenic precursors	Very low	Very high

#### HEAT STRESS MANAGEMENT MODEL

Area	Key Intervention
Comfort	Bedding, stocking density
Ventilation	Fans, sprinklers
Nutrition	Buffers, yeast, fat
Electrolytes	K, Mg balance
Energy	Glucogenic support
Water	Ad libitum clean supply



#### CONCLUSION

Heat stress is not merely an environmental issue but a metabolic challenge affecting intake, production, and overall animal health. Farms that adopt an integrated strategy combining comfort, cooling, nutrition, and hydration can significantly reduce losses and sustain productivity.





# Innovation is in our DNA

## GutAid™

Nourish the Gut

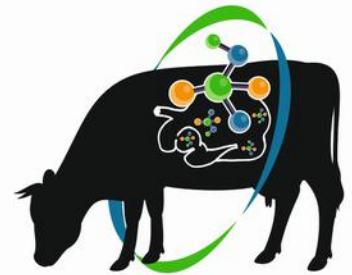
- ↓ Leaky Gut
- ↓ Heat Stress
- ↓ Transition stress
- ↓ Risk of Disease



## BioRum™

Blend of additives with Slow release buffering action in Rumen

- ↑ Fibre digestion
- ↑ Milk fat
- ↓ Lameness



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Broad spectrum mycotoxin control

- Super hero amongst all Toxin binder
- High Speed of action, Highly stable - works under pH 1 to 10,
- Enzymes blend - deactivates all mycotoxins and endotoxins



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- ✓ Fatty Acid Profile
- ✓ Antioxidants
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- ✓ Probiotics
- ✓ Pesticide Residues
- ✓ Antibiotic Residues
- ✓ TBC & Mold Count
- ✓ Proximate analysis (moisture, crude protein, fat crude fibre & nfe)

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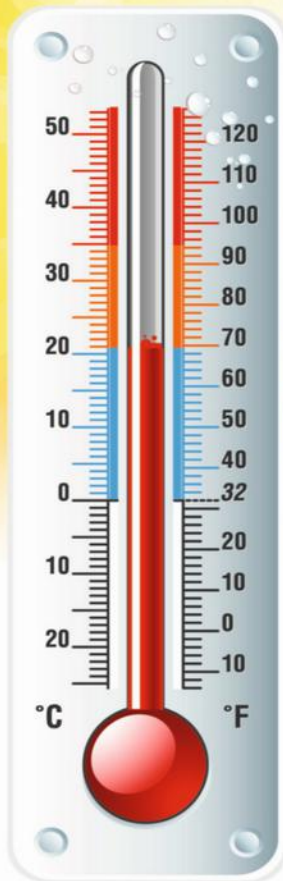
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production during  
heat stress



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Not all products are available in all markets nor associated claims allowed in all regions.

**Heat stress adversely impacts dairy cow performance**

Did you know that heat stress can cost over 400€/cow/year<sup>1</sup>? The consequences of heat stress include significant losses in milk production, (which can be up to 35%), coupled with rumen dysfunction and reduced reproduction rates. The level and impact of heat stress on cows is influenced by a combination of ambient temperature and relative humidity. New research has shown that temperatures in excess of 20°C and 50% relative humidity<sup>2</sup> will lead to cow discomfort and reduced milk production.

1 Saint Pierre et al., 2003 - 2 Burgos & Collier, 2011.

**Even under conditions of heat stress, LEVUCCELL® SC will maximize diet potential and your Income Over Feed Costs**

- Milk yield: +1.2 to 2.5 litres/cow/day.
- Increased Feed efficiency : up to 7%\*, +120g of milk/kg/Dry Matter Intake.
- Optimizes rumen pH (less risk of acidosis).

LEVUCCELL® SC is a rumen specific live yeast *Saccharomyces cerevisiae* I-1077, selected through collaboration with INRA (France).

\*Marfola, et al, ADSA 2010.

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3. Housing and Farm Infrastructure
4. Animal Nutrition
5. Fodder Production and Conservation
6. Breeding and Reproduction
7. Animal Health
8. Milking and Milk Quality
9. Young Stock Rearing
10. Farm Economics

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- Aspiring early-to-mid career dairy professionals
- Does NOT require prior formal dairy education

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- Sign-up for six-weeks of self-paced digital module learning
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**Mr. John Bonnier,**  
Dairy Development Consultant

Has over 40 years of global experience in dairy production, advisory services, and value chain development. A graduate in Tropical Agriculture and Animal Production from the National Agricultural College, Deventer, he has led projects across Africa, Asia, and Europe, including a major EU dairy development initiative in China. His expertise spans farm management, smallholder programs, and training, with tailored solutions for diverse production systems. He has authored practical manuals on modern dairy farming and continues to promote sustainable practices worldwide.



**Dr. Joost Snoep,**  
Veterinarian and Dairy Management Advisor,

Graduated as a DVM in 1972 from the University of Utrecht, Netherlands. He ran a private veterinary practice for 12 years before joining the Royal Animal Health Service in 1984 as a senior cattle specialist. In 2002, he became an official Bovine Health Specialist and, in 2007, a Diplomat of the European College of Bovine Health Management (ECBHM). His work focused on complex cattle health issues and post-academic training for veterinarians. Since 2010, through his consultancy, he has advised dairy farms worldwide, improving herd health and production efficiency to reduce milk costs.

**INTERNATIONAL EXPERTS**



**Mr. Sieger (George) Siderius,**  
Reproduction and AI Specialist,

Grew up on a dairy farm in the Netherlands, gaining hands-on experience with cattle from an early age. After studying farm and livestock management at the Agricultural College in Leeuwarden, he worked in Zambia for three years advising agricultural cooperatives. Returning to the Netherlands, he joined CRV, where he specialized in Artificial Insemination (AI) and fertility, eventually becoming Head of AI and trainer. He has conducted AI training for technicians and farmers worldwide, including Azerbaijan, Africa, Bangladesh, and Ukraine, promoting animal welfare and improving herd fertility through practical courses and tailored advice.

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**Dr. Channegowda H.K,**  
Veterinarian and Animal Nutritionist,

Began his career in 1992 specializing in animal nutrition, feeding, and management. With extensive experience in dairy and poultry health, feed formulation, and quality control, he has consulted across India, South Asia, the Middle East, and East Africa for leading companies like CPF India, Supreme Feeds, and Zeus Biotech. His work includes research on mycotoxins and feed enzymes at Alltech's Bioscience Centre, Kentucky, and contributions to NDDB's INAPH program and FAO's avian influenza control. Dr. Gowda has conducted 1,000+ training programs, organized 100+ health camps, and is a recognized speaker and author in animal nutrition.



# ज्ञान, सेवा और समर्पण की प्रेरक पहचान विज्ञान, समाज सेवा और पशु कल्याण के माध्यम से सकारात्मक बदलाव की दिशा में एक सशक्त प्रयास



**डॉ. अनिल कम्बोज**

डॉ. अनिल कम्बोज फार्माकोलॉजी, न्यूट्रीशन एवं योग आधारित समग्र स्वास्थ्य के क्षेत्र में एक समर्पित, बहुआयामी और प्रेरक व्यक्तित्व हैं। उन्होंने फार्माकोलॉजी में स्नातकोत्तर (PG) एवं पीएच.डी. की उपाधि प्राप्त की है। इसके साथ ही उन्होंने फूड एंड न्यूट्रीशन में एम.एस.सी., न्यूट्रीशन एंड हेल्थ एजुकेशन (DNHE), क्लीनिकल फार्माकोलॉजी के साथ-साथ योग विज्ञान में डिप्लोमा एवं पोस्ट ग्रेजुएट डिप्लोमा (PG Diploma in Yoga) भी किया है। इसके अतिरिक्त वे स्पोर्ट्स डायटेटिक्स में भी प्रशिक्षित हैं। उनकी यह बहुआयामी शैक्षणिक पृष्ठभूमि, विशेष रूप से योग और स्वास्थ्य विज्ञान का समन्वय, उनके व्यापक ज्ञान और समग्र दृष्टिकोण को दर्शाती है।

डॉ. कम्बोज की सबसे बड़ी पहचान उनका मजबूत सामाजिक और पशु कल्याण योगदान है। वे Animal Welfare Board of India (AWBI) के अंतर्गत ऑनररी एनिमल वेलफेयर प्रतिनिधि के रूप में कार्य कर रहे हैं तथा CCSEA के माध्यम से पशु नैतिकता और अनुसंधान से जुड़े कार्यों की निगरानी में योगदान दे रहे हैं।

उन्हें हरियाणा सरकार के पशुपालन विभाग द्वारा Animal Birth Control (ABC) प्रोग्राम के अंतर्गत इंसपेक्शन कमेटी का सदस्य नियुक्त किया गया है। इसके साथ ही वे जिला प्रशासन, करनाल के अंतर्गत ABC प्रोग्राम की लोकल लेवल मॉनीटरिंग कमेटी में भी सक्रिय सदस्य हैं। वे जिला SPCA, करनाल के साथ मिलकर पशु बचाव, पुनर्वास, निरीक्षण और क्रूरता रोकथाम जैसे कार्यों में भी महत्वपूर्ण भूमिका निभा रहे हैं।

मानवीय सेवा के क्षेत्र में भी उनका योगदान अत्यन्त प्रेरक है। उन्होंने 50 से अधिक बार स्वेच्छा से रक्तदान किया है, जिसके लिए उन्हें स्टेट रेड क्रॉस सोसाइटी एवं जिला रेड क्रॉस द्वारा कई बार सम्मानित किया गया है। इसके अतिरिक्त वे स्वास्थ्य जागरूकता शिविरों, हेल्थ कैम्पस, न्यूट्रीशन एजुकेशन कार्यक्रमों तथा आपातकालीन सहायता कार्यों में भी सक्रिय रूप से भाग लेते हैं।

उनके सामाजिक योगदान को व्यापक स्तर पर सराहा गया है। हाल ही में उन्हें स्वास्थ्य एवं योग के क्षेत्र में उत्कृष्ट सेवाओं के

लिए करनाल के विधायक द्वारा प्रशंसा पत्र देकर सम्मानित किया गया। यह सम्मान उनके द्वारा योग, पोषण एवं औषध विज्ञान के माध्यम से समाज में स्वास्थ्य जागरूकता फैलाने के निरन्तर प्रयासों की पहचान है।

वे इंडियन रेड क्रॉस सोसाइटी, न्यूट्रीशन सोसाइटी ऑफ इंडिया, IAPEN तथा वर्ल्ड पब्लिक हेल्थ न्यूट्रीशन एसोसिएशन जैसे प्रतिष्ठित संगठनों से जुड़े हुए हैं।

अनुसंधान के क्षेत्र में भी डॉ. कम्बोज का योगदान उल्लेखनीय है। उन्होंने विभिन्न राष्ट्रीय एवं अंतर्राष्ट्रीय जर्नलस में कई शोध पत्र प्रकाशित किए हैं, जिनमें औषधीय पौधों, एंटी-डायबिटिक, एंटीऑक्सिडेंट और दर्दनिवारक प्रभावों पर आधारित महत्वपूर्ण अध्ययन शामिल हैं। साथ ही उन्होंने रुमेटाइड आर्थराइटिस पर एक पुस्तक अध्याय में भी योगदान दिया है।

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# Management of Dairy Animals during summers

Mokshata Gupta<sup>1</sup> and Tanmay Mondal<sup>2</sup>

India, the world's leading milk producer, contributes approximately 26.67% to global milk output. This remarkable achievement stems from extensive dairy infrastructure, genetic improvement through crossbreeding, and improved feeding practices. However, climatic extremities, particularly summer heat stress, remain a formidable challenge in sustaining milk yield, quality, and animal health. In India, summer temperatures frequently exceed 45°C, far beyond the thermal comfort zone of 18-23°C for dairy cattle and buffaloes. Crossbred cows and high-producing buffaloes, due to their higher metabolic heat production, are especially vulnerable to heat stress.



The impact is both quantitative and qualitative. Milk production can decline by 10-30%, with significant reductions in fat, protein, and SNF content, particularly during early and mid-lactation phases. Moreover, nutritional imbalance during this period exacerbates metabolic disorders such as ruminal acidosis, ketosis, mineral deficiencies, etc.

To mitigate such adverse effects, nutritional management during summers becomes essential. Such nutritional approaches, when synchronized with housing and breeding interventions, offers a sustainable pathway to minimize climate-induced productivity losses in the Indian dairy sector.

## Signs of Heat Stress in Dairy Ruminants

Heat stress in dairy ruminants leads to a cascade of physiological, metabolic, and behavioral changes. As the core body temperature rises beyond the thermoneutral zone (18-23°C), adaptive responses are triggered to enhance heat dissipation, often at the cost of productivity and health. The clinical signs are as follows:

- Polypnea and open-mouth panting.
- Excessive salivation
- Seeking shade or cooler areas.
- Increased water intake with reduced feed intake
- Standing rather than lying
- Elevated rectal temperature
- Dry mucous membranes and tacky gums
- Sunken eyes and tachycardia
- Increased incidence of silent heat and anestrus

## Effect of Heat Stress on Animal Production and Reproduction

Heat stress has emerged as a major limiting factor in dairy production systems, especially in tropical and subtropical regions like India.

### 1. Impact on Milk Production

Thermal stress significantly suppresses milk yield and quality in dairy animals.

- Early lactation cows experience a 14% decline in milk yield, while in mid-lactation, losses can reach 35%.
- In states like Punjab, Haryana, Rajasthan, and Uttar Pradesh, where summer temperatures often exceed 44°C, milk production drops by 15-20% in crossbred cows and 10-15% in buffaloes during May and June. These losses further increase to 20-25% in cows and 20% in buffaloes during the humid months of July and August.
- Heat stress also alters milk composition, with marked reductions in milk fat, protein, casein, and solids-not-fat (SNF) content.

### 2. Impact on Reproduction

Heat stress negatively affects reproductive physiology and efficiency in dairy animals, with both male and female fertility being compromised.

- There is an increased incidence of anoestrus and silent heat.
- Altered luteinizing hormone (LH) and follicle-stimulating hormone (FSH) patterns, leading to delayed ovulation and poor estrus expression.
- Oocyte quality, fertilization rates, and early embryonic development are significantly affected. Sperm motility and viability also decrease under prolonged heat exposure.
- Exposure to elevated temperatures during gestation may result in intrauterine growth restriction, delayed placental development, and reduced birth weight of calves.

Overall, heat stress not only reduces conception and calving rates but also impairs long-term herd productivity by affecting the next generation of dairy animals.

## Strategies to Mitigate the Harmful Effects of Heat Stress in Dairy Animals

Effective mitigation of heat stress in dairy animals requires an integrated approach combining breeding, housing, and nutritional management strategies.

**1. Breeding Management:** Heat stress adversely affects estrus behavior, conception rate, and semen quality, making breeding management crucial during summer.

- Reduced estrus expression under heat stress makes it difficult to detect optimal breeding time. Hence, timely heat detection protocols using activity monitors, tail chalking, or pedometers should be implemented.
- Artificial Insemination is preferred over natural mating during summer as both bulls and cows experience thermal infertility.



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- Incorporating genetic selection for thermotolerance is a sustainable long-term strategy.
- Selection of animals with shorter, lighter-colored coats, loose skin, and larger sweat glands is practical for field-level farmers aiming to maintain herd productivity under rising temperatures.

**2. Animal Housing Management:** Proper housing design plays a key role in reducing the thermal load on dairy animals.

- Cooling systems, such as a combination of fans with water sprinklers, significantly lower the ambient temperature inside sheds.
- Buffaloes, due to their darker skin and fewer sweat glands, are more heat-sensitive and must be housed in well-ventilated sheds or provided with water pools or wallowing tanks.
- Animal shelters should be constructed along the east-west axis to minimize sun exposure. Roofs and walls should be painted white to reflect solar radiation.
- Avoid excessive sprinkling that may lead to wet bedding, predisposing animals to mastitis and hoof diseases.
- Use insulating roofing materials and install ridge ventilators to facilitate hot air escape.
- Planting trees around farm boundaries can lower the ambient temperature and improve animal comfort.

**3. Nutritional Management:** Nutrition plays a central role in alleviating the physiological burden of heat stress.

- Provide energy- and nutrient-dense diets to meet production demands.

- Provide Total Mixed Rations rich in bypass fats, bypass proteins, and low in fiber to reduce heat generation during digestion.
- Schedule feeding during cooler hours (early morning or late evening), and encourage night grazing if feasible.
- Supplement diets with antioxidants (Vitamin E, Vitamin C), trace minerals (Zn, Se, Cr), and immune boosters to counteract oxidative stress and maintain immune function.
- Use rumen fermentation stabilizers like live yeast cultures and ionophores to maintain rumen pH and enhance energy utilization.
- Ensure round-the-clock access to cool, clean drinking water.

### Conclusion

To combat the rising threat of heat stress in dairy animals, a multi-dimensional management approach is necessary. This includes modifying housing conditions, optimizing feeding practices, promoting heat-resilient genetics, etc. Among these, nutritional interventions are the most immediate and controllable tool available to farmers for minimizing heat-induced losses. With the adoption of scientifically designed strategies, dairy farmers can safeguard herd health and productivity, even during the harshest summer months.

**Mokshata Gupta<sup>1</sup> and Tanmay Mondal<sup>2</sup>**

<sup>1</sup>Assistant Professor, Department of Animal Nutrition, DUVASU, College of Veterinary Science, Mathura, U.P-281001

<sup>2</sup>Assistant Professor, Department of Veterinary Physiology and Biochemistry, College of Veterinary Science, Rampura Phul, GADVASU, Punjab-151103

## EVENT CALENDER

**JUNE 2026**  
**VIV EUROPE 2026**  
**2 - 4 June 2026**  
**Venue :** Jaarbeurs, Utrecht, The Netherlands  
**Contact Person :** Ms. Natalie Taylor  
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**AUGUST 2026**  
**4-6 AUGUST – SIAVS**  
**Venue :** Anhembi District - São Paulo - Brazil - Av. Olavo Fontoura, 1209  
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# 22<sup>nd</sup> Pashu Palan Mela

## S. Bhagwant Singh Mann, Chief Minister of Punjab, confers the Chief Minister's Awards to progressive farmers

S. Bhagwant Singh Mann, Chief Minister of Punjab, confers the Chief Minister's Awards to progressive farmers

Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, conferred Chief Minister awards to four livestock farmers on the 20th of March, on the first day of Pashu Palan Mela. These awards were conferred in an



impressive function by S. Bhagwant Singh Mann, Chief Minister of Punjab, honored these progressive livestock farmers with the Chief Minister's Award. On this occasion, S. Gurmeet Singh Khuddian and S. Hardeep Singh Mundian, Cabinet Ministers, MLAs and dignitaries were present. Dr. Satbir Singh Gosal, Vice-Chancellor, Punjab Agricultural University and Dr. Jatinder Pal Singh Gill, Vice-Chancellor, Guru Angad Dev Veterinary and Animal Sciences University were present in this honoring ceremony.

Dr. Ravinder Singh Grewal, Director of Extension Education said that Vet Varsity is making all out efforts for the development of the livestock sector in the state by strengthening its extension programmes. In order to motivate various categories of livestock farmers, the university organizes innovative competitions by assessing the extent and impact of adoption of these technologies in improving the productivity and profitability of different livestock farming systems.

He revealed that in the buffalo farming category S. Fateh Singh, S/o S. Kartar Singh, District, Sahibzada Ajit Singh Nagar was awarded. Presently he has 300 animals, out of which 85 milking buffaloes are producing 5 quintals of

milk daily. He also sells milk directly to consumers and along with this he also prepares paneer, khoya, ghee and other value added products.

In the category of goat farming, award was given to S. Kuldeep Singh, S/o S. Sukhdial Singh, District, Barnala. Kuldeep Singh, who has completed 10+2 education, started the goat farm in 2023.

Currently, he has about 50 animals. He has adopted scientific methods in the breeding management of goats, which is improving the breed and increasing production.

In the fish farming category, S. Navjot Pal Singh, S/o S. Paramjeet Singh, District Ferozepur won the award. He has been doing fish farming scientifically for the last six years and the production capacity of his fish farm is 15 tons per year. He is also rearing buffaloes, cows, chickens and goats scientifically and has been contributing to the protection of the environment by not burning stubble for the last many years.

In the category of pig farming, this honor was given to S. Gurcharan Singh, S/o S. Kunda Singh, District, Mansa. He started this profession in 2018. Currently, he has 400 animals. Every year, 300-350 pigs are being sold from his farm. On his farm, a sow has created a record by giving birth to 18 piglets. He fully follows scientific methods and biosecurity rules for the health care of the pigs.

Dr. Grewal informed that these awards carry plaque, shawl, and citation along with cash. For the buffalo category cash award is 21000/- for Fish category 11000/- for Pig Farming 5100/- and Goat farming 5100/.





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Two days Pashu Palan Mela of Guru Angad Dev Veterinary & Animal Sciences University, Ludhiana concluded with a message of 'Livestock Farming: Local strength to Global standards'. by adopting the approach of global thinking, needs and scientific perspective with the advantages of our traditional and customary structure. Dr. M.L. Jat, Director General, ICAR, Sh. Harchand Singh Barsat, Chairman, Punjab Mandi Board, Dr. HS Jat, Indian Institute on Maize Research, Dr. Parvender Sheoran, Director ATARI, Dr. R S Sidhu, former director, Borlaug inst. of South Asia, Dr. M S Bhullar, Director Extension Education, PAU graced the occasion on the second day.



Dr. M. L. Jat, Director General, Indian Council of Agricultural Research, spoke on the occasion as chief guest. He praised the university and said that this institution is doing very constructive work under the leadership of Dr. JPS Gill. Talking about the veterinary hospital and other facilities of the university, he said that

the livestock profession is making a very important contribution to the economy and food security of the country. Appreciating the theme of the livestock fair, he said that the Prime Minister of the country also thinks of the same vision. He praised the energy of the farmers of Punjab and said that these hardworking farmers continue to stand firm in the face of challenges. He also assured that the ICAR will continue to contribute continuously to

the support and cooperation of farmers and institutions. Dignitaries released different publications and AI applications in the presence of a huge number of livestock farmers. 'VetBot', an AI assistant chatbot and an app on atlas of animals' anatomy, Goat Milk Soap, Greek Yoghurt were formally launched by them.

Dr. Ravinder Singh Grewal, Director of Extension Education, stated that while some departments of the university are engaged in providing services related to livestock rearing, others are actively working in the value addition of livestock products. These ventures offer promising opportunities for generating good income. He emphasized that many activities are particularly suitable for women, as they can be conveniently managed alongside household responsibilities.

He highlighted that enterprises such as ornamental fish rearing, aquarium making, and the preparation of value-added products like flavoured milk, lassi, cheese, meat pickle, meat patties, meatballs, and various fish delicacies fall under these income-generating activities. He further added that young entrepreneurs can achieve profitable returns through goat and pig farming.

Dr. Grewal also informed that a large number of farmers visited the stalls and expressed keen interest in learning about preventive measures for parasitic diseases in livestock. The Department of Animal Nutrition presented several innovative nutritional technologies for dairy animals, which attracted considerable attention. High-quality mineral mixtures and uromin lick developed by the university were also made available to farmers at affordable prices.



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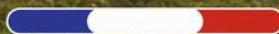
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The university's judging committee evaluated all stalls and, in the industry category Vansun Technologies awarded the first prize, Asees Feed the second prize, and Provalis India Health Care the third prize, while Olympic Overseas received an appreciation award.

In the university category, the College of Dairy and Food Science Technology secured the first position. The College of Fisheries secured the second position. The Department of Livestock Products & Technology was awarded third place, and the Teaching Veterinary Clinical Complex received an appreciation award.

Dr. Jatinder Paul Singh Gill, Vice-Chancellor, honored all the dignitaries along with Dr. Kewal Arora, retired Assistant Director A&H, and team of Ishmeet Singh Music Institute.

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# Silage Preservation & ACTi prop technology

By - Dr. Amit Kumar

## Introduction

In India, throughout the year availability of good quality fodder is the biggest challenge for dairy farmers because feeding quality fodder is a necessity to maintain and improve milk production in the dairy animals, specifically high-producing animals need better quality forage. In that scenario preservation of fodder becomes a necessity to meet the nutritional demand for milk production. Where making silage comes into the picture to fulfil the demand for green fodder which has good quality nutrients.

## Content

**Silage** is a type of preserved green fodder that is made up of fodder crops that are high in non-structural carbohydrates (like Maize, Bajra, Oat, and Sorghum) prepared in anaerobic conditions. Fodder crops which are having thick and juicy stems are preferred in making silage.

The anaerobic bacteria in the absence of oxygen utilizes carbohydrates to convert into lactic and acetic acids which reduces the PH and further inhibits the growth of microorganisms making stable nutrient value of the fodder crop.

But there are microbes in the fodder that can tolerate a wide range of pH (pH 2 to 10) like yeast & moulds which can remain alive even after huge temperatures and PH variation, when they get a suitable environment (Oxygen), they start growing and produce toxins which are harmful for the animal health directly and indirectly for public health.

Silage development process can be divided into four phases....

The silage development process can be divided into four phases....

**A) Aerobic phase 1** - The phase may last from a few hours to 24 hours depending upon the amount of oxygen present.

**B) Initial Anaerobic phase 2** - In this phase anaerobic bacteria start producing acetic acid which starts reducing PH, The period of this phase ranges from 1 to 3 days normally

**C) Main Anaerobic Phase 3** - due to the previous phase pH reduces below 5.7 which supports the growth of Lactic acid producing bacteria which produces lactic acid and rapidly reduces the pH of silage up to 4. The period of the phase ranges from 3 to 6 days.

**D) Storage Phase** - The period for this phase ranges from 7 to 21 days, in this phase pH of silage goes below 4 that inhibits the growth of harmful microorganisms thus making silage nutrients more stable. The storage phase completes up to 21 days but keeping silage closed for a longer period of up to 45 days makes nutrients more

digestible and increases palatability for the animals. Production of lactic acid may continue up to 6 months in the silage which improves the shelf life and digestibility of silage.

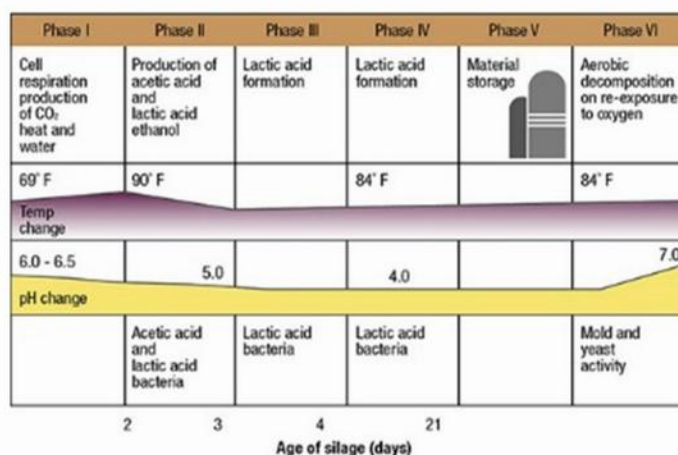


Fig 1: Silage phases.

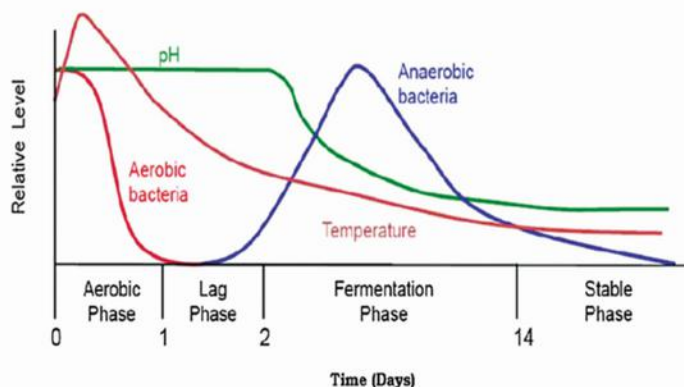


Fig 2: Silage phases

So, it's important to keep phase 1st for a very short time because in this phase due to aerobic oxidation nutrient value goes down, for this chopping of fodder crop within the length of 2 to 4 cm is required for better pressing and to remove oxygen from the silage. Proper pressing will ensure very little oxygen for the first phase and shorter the duration. For making good quality silage selection of crop, harvesting at the right time (1/2 to 2/3rd bloom stage) is favourable for better nutritive value. Dry matter content in b/w 65 to 70 % is considered good for maize silage making.

High-quality silage should have minimum fermentation losses, In the silage-making process nutrient loss (Dry matter) may range up to 5 to 10% and we aim to keep the losses towards the minimal side. High starch content in the maize crop in b/w 26 to 30 % will ensure proper production of lactic acid by lactic acid-producing bacteria.

Proper packing of silage with polyethylene material or concrete and properly pressing with sandbags or tires is good for preventing ballooning on the top to avoid oxygen entrance and better anaerobic conditions for the fermentation process. Also filling of silo in a dome shape is favourable to avoid water seepage and proper drainage of rainwater.



**Fig 3:** Spoiled silage with yeast and moulds

when the silo pit is opened for the feeding of animals that side comes in contact with oxygen that promotes growth of bad microorganisms like yeast and moulds which produces the toxins like aflatoxin and other that are harmful for animal health as well for human health directly and indirectly respectively.

#### **Acti Prop Technology in fylax forte**

Organic acids like formic, sorbic, propionic, lactic and acetic acids are being used singly or in combination to

efficiently preserve silage and avoid spoilage by protecting damage from bad microorganism like clostridia, yeast & moulds. Organic acids when added in the silage directly reduce the pH supporting growth of lactic acid producing bacteria and inhibiting growth of harmful microorganisms (Cazzato et al., 2011). Propionic acid has been used for aerobic stability of silage by inhibiting growth of bad microorganism and competing on active sites with amino acids for binding or through altering the cell permeability of organisms (Queiroz et al., 2013). Adding propionic acid based organic acid combination has shown positive association for aerobic stability of silage, quality of fermentation and less nutrient loss (Gheller et al., 2021), simple organic acid have pungent smell and corrosive nature which can harm the handling person.

But inhibition of growth itself is not sufficient to avoid spoilage by yeast and moulds since when these microorganism comes in conducive environment (in oxygen) they start growing and produces toxins and cause spoilage of silage.

So, the Acti Prop technology where propionic acid molecules are activated by patented technology disintegrates the cell wall and destabilizes the cell membrane making it more permeable for organic acids to enter into the cell of the organism and ultimately killing the microorganism which ensures even if the environment is conducive for growth but there are very few organisms to grow that ensures better quality silage with longer shelf life and maintains nutritive value.

Additionally, it contains buffered organic acid which makes it safe to handle, less corrosive, and less evaporative so they will stay longer in silage for longer protection.

Since these bad microorganisms cannot grow at lower pH and lower pH is also suitable for the growth of lactic acid producing bacteria which is required for very good quality silage, optimum pH for very good quality silage range from 3.8 to 4.2.

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#### Conclusion

Preservation of green fodder for high nutritive value feeding to the milk-producing animals throughout the

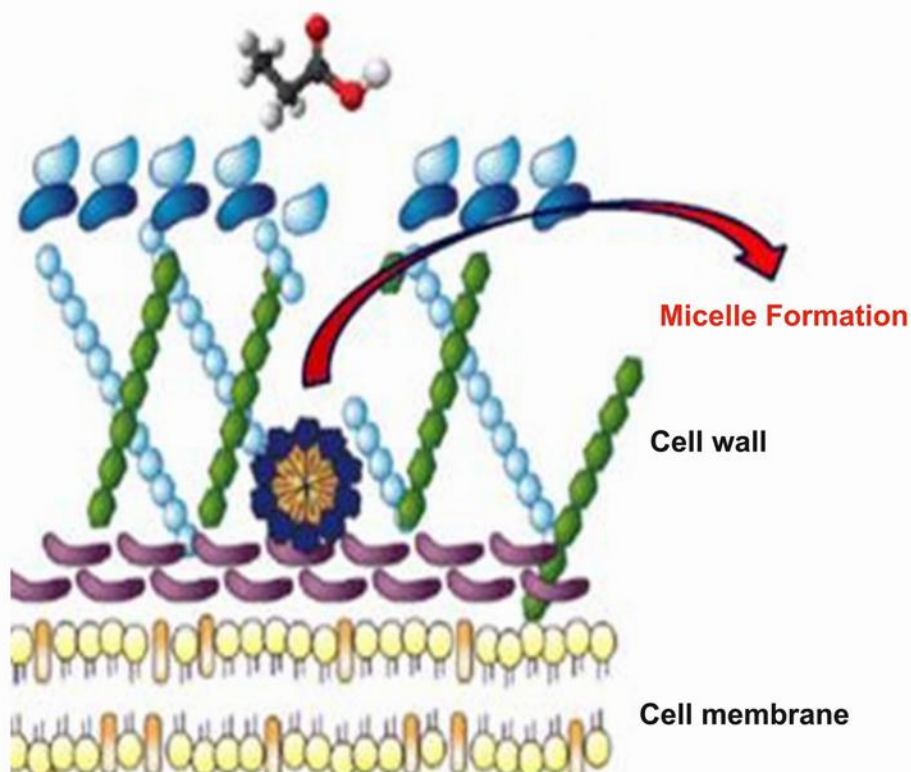
year is a necessity. Silage making and preservation are two important things to take care of where the silage-making process needs to pay attention to the selection of the right crop and harvesting at the right time with correct dry matter and soluble sugar for proper fermentation. Closely monitoring of proper pressing and packing of silo pits ensures a conducive environment for efficient anaerobic fermentation and reduces the duration of the initial aerobic oxidation phase and losses.

The addition of organic acids in the combination ensures a faster decrease in the pH that supports a decrease in the duration of the aerobic phase & early reduction in the pH to avoid the growth of harmful microorganisms. The patented Acti-Prop technology from Trouw Nutrition ensures killing and inhibition with Activated propionates and a combination of buffered organic acid respectively thus reducing the number of harmful microorganisms and helping in making more safe and nutritive silage with longer shelf life.

By -Dr. Amit Kumar  
(Technical Manager Trouw Nutrition)

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## BREAKING NEWS

### ASEES FEED IS BECOMING CATTLE'S FAVORITE

#### भैंसों के लिए Buffcare 30 बना भरोसेमंद फीड, Asees Feed की बढ़ती पहचान

भारत की पशु आहार ब्रांड Asees Feed, बछड़ी से लेकर गाय-भैंसों तक के लिए खास फीड बनाती है। इसका Milksure 30 पहले से लोकप्रिय है और अब Buffcare 30 भी तेजी से डेयरी किसानों की पसंद बन रहा है। Buffcare 30 खास भैंसों के लिए बनाया गया है, क्योंकि उनके दूध में फैट 7% to 8% ज्यादा होने से उन्हें अधिक ऊर्जा की जरूरत होती है। इसमें जरूरी विटामिन्स, मिनरल्स और प्रोटीन शामिल हैं, जो पोषण, ताकत और दूध उत्पादन को बेहतर बनाते हैं।



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इन दिनों डेयरी क्षेत्र में एक खास फीड को लेकर भैंसों के बीच खूब चर्चा है और इसकी लोकप्रियता तेजी से बढ़ रही है। कुछ भैंसों ने कहा, "यह फीड हमारी बहनों में धीरे-धीरे प्रचलित हो रहा है। Asees Feed ने हमारी सेहत का ध्यान रखते हुए यह स्वादिष्ट फीड बनाई है, अब हम फिट हैं और कोई हमें मोटी नहीं कहेगा।" विशेषज्ञों के अनुसार, संतुलित पोषण पशुओं के स्वास्थ्य और दूध उत्पादन दोनों को बेहतर बनाता है, जिससे यह फीड डेयरी किसानों के बीच भी अपनी पहचान बना रहा है।

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