

Webinar summary: Facial eczema – Part 2

This webinar provides an in-depth look at facial eczema (FE) in dairy cows, focusing on its causes, prevention, monitoring, and treatment strategies. It discusses the role of liver health, trace minerals, zinc supplementation, toxin binders, and breeding advancements in managing FE risks.

In this webinar:

1. Overview of facial eczema

- FE thrives in warm (12–27°C) and humid (100%) conditions, particularly after three days of drizzly weather.
- The spores of *Pithomyces chartarum* fungus, found in pasture litter, release toxins when ingested.
- These toxins accumulate in the liver, causing damage that leads to decreased appetite, milk production losses, and photosensitivity, manifesting as peeling skin on white areas of cows.

2. Prevention strategies

- **Monitoring and spore counting:** Regular regional and on-farm spore counts help identify risk periods.
- **Zinc supplementation:** Pre-building zinc levels improves protection, with multiple delivery methods:
 - **Water dosing:** Effective but variable; requires frequent blood testing.
 - **Feed dosing:** Provides more consistent zinc absorption.
 - **Boluses:** Long-lasting (six weeks) but more expensive and labour-intensive.
- **Copper management:** Free copper catalyses the oxidation of FE toxins, worsening liver damage. Reducing free copper intake (through feed testing and use of chelated copper) lowers risk.
- **Grazing management:** Avoid overgrazing low-lying areas with high dead matter, as spores accumulate there.
- **Breeding for resistance:** Research shows genetic heritability for FE tolerance in dairy cows, following success in sheep breeding.

3. Liver protection and strengthening

- **Trace minerals:** Selenium, copper, zinc, manganese, cobalt, and iodine support liver repair and antioxidant defence.
- **Amino acids and supplements:**
 - **Betaine:** Enhances liver function, reduces fat accumulation, and improves thermoregulation.
 - **Seaweed:** Supports liver detoxification and bile function.
 - **Milk thistle:** A key ingredient in liver repair formulations like Coolaid and Liverade.

4. Monitoring and measuring risk

- **Blood testing:** Essential for checking zinc levels (target 20–34 μmol) and liver enzyme activity (GGT, GDH) to assess liver damage.
- **Cow behaviour and wearables:** Reduced appetite, increased panting, and declining milk solids indicate potential FE or heat stress.
- **Milk composition:** Fluctuations in fat and protein percentages signal metabolic stress.

5. Treatment for affected cows

- **Toxin binders:** Help protect the liver and reduce ongoing damage.
- **Liver support:** Drenches like Liverade provide targeted support for recovering cows.
- **Dietary adjustments:** Ensuring adequate energy, protein, and antioxidants in the diet aids recovery.

6. Future research and next steps

- Exploring breeding strategies for FE-resistant dairy cows.
- Investigating more effective zinc and toxin binder formulations.
- Improving precision monitoring with wearables and predictive spore counting models.

For more details, watch the webinar or download the slide deck.