



# Facial Eczema



The complete range of facial eczema supplements.



Animal Nutrition and Forage Advice that Works, Our Guarantee.

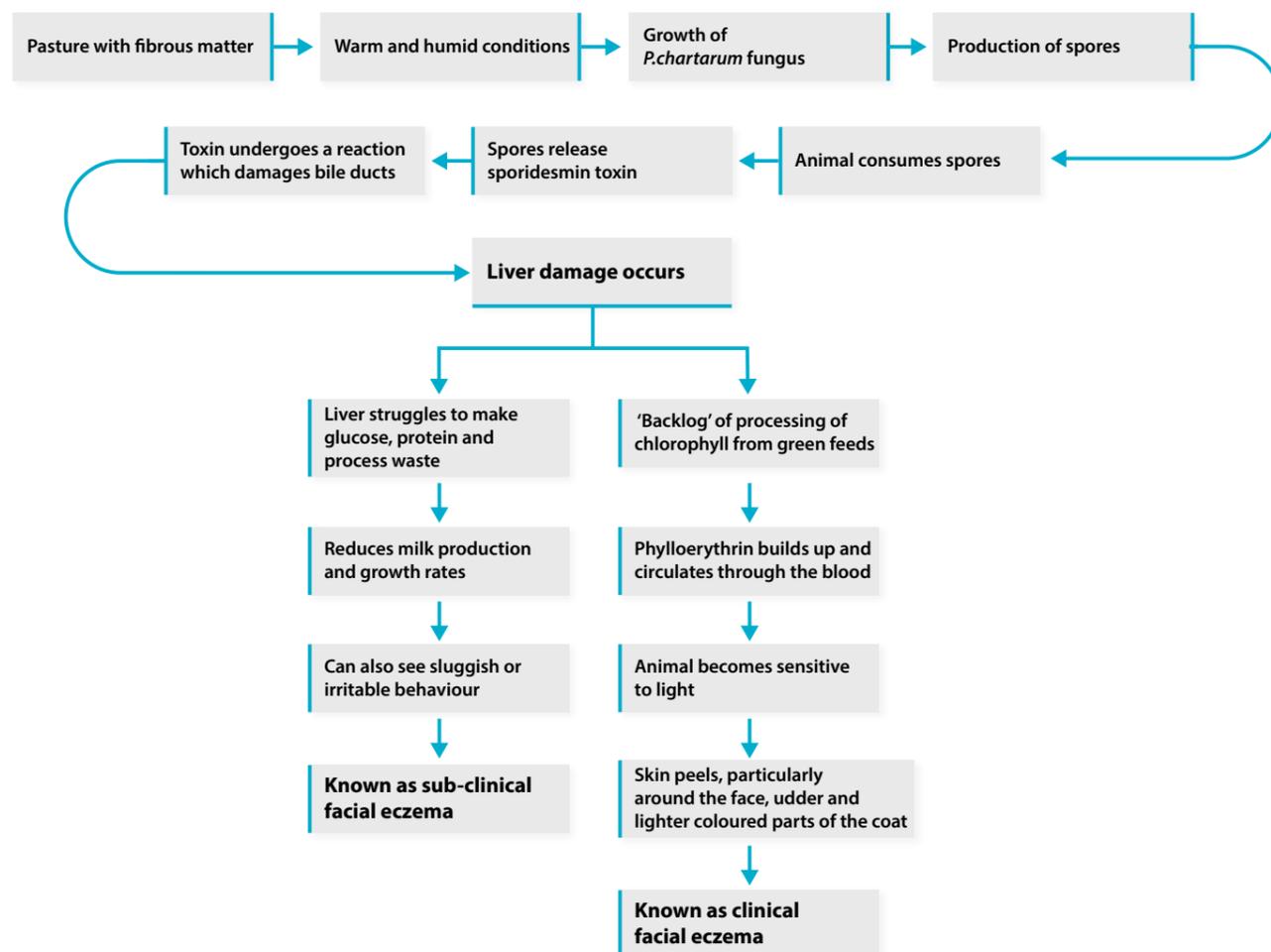


**NUTRITECH**  
LEADERS IN ANIMAL NUTRITION

# What Causes Facial Eczema?

Facial eczema occurs mainly in the North Island and some northern areas of the South Island of New Zealand, where the fungus, *Pithomyces chartarum*

grows on dead and dying pasture during Summer and Autumn. It produces a toxin, sporidesmin, which cows eat when grazing pastures high in fungal spores.



The effects of consuming sporidesmin are not seen immediately, there is generally a lag between ingestion of the toxin and appearance of clinical signs. Sub-clinical effects are more widespread, with 10-15 sub clinical cows for every clinical case you see. Sub-clinicals can appear outwardly healthy but can have significant short term and long term production effects.

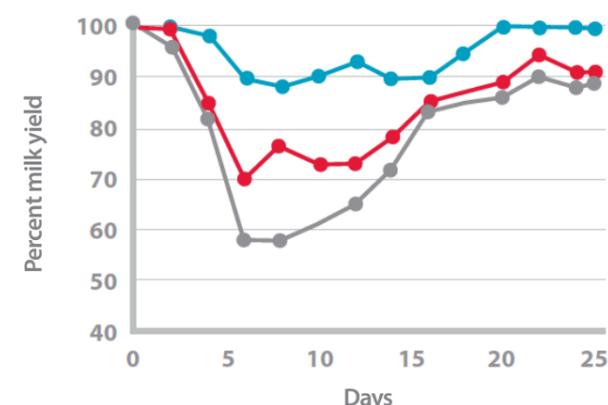
Because of the important role of the liver, we can see facial eczema effects long after the 'FE Season' has finished. For example ewes go down with sleepy sickness at lambing, unexplained milk fever or sudden death at calving or difficulties with protein manufacture (e.g. bottle jaw, uncontrolled bleeding).

## Significant Production Losses

Trials conducted in the Waikato calculated the effect of low doses of sporidesmin on milk yield. Over a three week period, production across the herd had dropped by as much as 25%. These cows did not exhibit any detectable liver damage when tested for GGT levels (a liver enzyme test that highlights damage to the liver).

For a cow producing 1.5kgMS, a 10% reduction in milk production equals \$0.90 per cow per day lost. A 25% reduction is \$2.25 per cow per day lost (assuming a payout of \$6.00/kgMS).

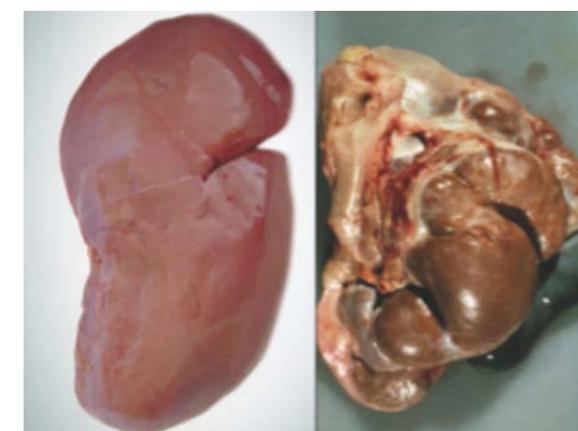
The effect of 3 low doses of Sporidesmin on milk yield. (Neale Towers, AgResearch)



## Testing

In a recent study by Emma Cuttance (VetEnt, Te Awamutu), only 28% of herds had sufficient zinc for facial eczema prevention. As a result, 72% of herds were not covered with the consequential loss in time and money while still getting damage. Testing is very important as it is the only way to know the risk on your farm, and the effectiveness of your facial eczema programme.

**Pasture spore counts** – shows potential risk of spore ingestion. 30,000 spores per gram (spg) is the threshold for when full dose rates of zinc should begin. Significant variation can occur between paddocks and samples so should be taken as a relative guide only.



This image compares a healthy liver (left) to one affected by facial eczema (right).

**Faecal spore counts** – provides a guide as to how many spores have been eaten.

**Serum zinc** – indicates whether enough zinc has been consumed to prevent the effects of facial eczema. This is highly recommended to test once you have started full rates of zinc supplementation to ensure your livestock are getting the targeted rates of zinc. For cows, serum zinc needs to be between 20 and 35 µmol/L. Sample from a range of liveweights to ensure the small cows aren't being over-dosed and the large cows aren't being under-dosed.

**Serum GGT** – indicates liver damage. Serum GGT levels rise 14 days after damage from sporidesmin. Note this can be variable as other factors that cause liver damage also affect GGT.

# Managing Facial Eczema

## Facial Eczema Risk Reduction Methods

### 1. Pasture management

Fibrous matter plays host to many fungi, including *P.chartarum* which produces facial eczema inducing spores. Therefore pasture that has been previously grazed with high residuals, paddocks that have been pre-graze mown, topped, or cut for silage / hay can all increase the 'trash' build up which increases the risk of facial eczema.

### 2. Other crops or feeds

Crops that produce less dead matter reduce the area on which *P.chartarum* can grow and therefore reduce the risk of spores. Chicory, turnips, rape, fodder beet, red clover, lucerne for example all tend to have a low risk of spore ingestion when grazed as a pure sward. However; when grazed as a mixed sward with ryegrass the risk can still be high.

Other feeds such as maize silage, barley or PKE can also 'dilute' spore intake, however; if for example pasture spore counts are 100,000spg and another feed is a third of the diet, the potential spores ingested are equivalent to 66,000spg which is still well above the treatment threshold of 30,000spg.

So, while other crops and feeds can help 'dilute' spore intake, however treatment with zinc will likely still be required depending on pasture spore counts and relative proportions of the diet.

**Note:** for animals with severe clinical facial eczema taking them off green feed may be required to reduce phylloerythrin build up – consult your veterinarian.

### 3. Pasture spraying with fungicide

Fungicides target the actively growing fungus – not the spores. Therefore, in order for the fungicide to

be effective the fungi must (a) be actively growing and (b) spore counts <20,000. Any spores present could still turn into new fungi so it is important to test before pasture spraying, and every three weeks after to ensure pasture spore counts remain low.

## Zinc for Facial Eczema Prevention

Zinc binds to sporidesmin to prevent undergoing 'auto-oxidation' – the process that causes free radicals. Zinc basically 'locks the toxin up'. The toxin can then be excreted without producing free radicals, reducing damage to the bile ducts.

Zinc for facial eczema is significantly higher than regular nutrition. Elemental zinc required for facial eczema prevention = 2g / 100kg liveweight.

The difference between monohydrate, heptahydrate and zinc oxide is the amount of elemental zinc, and whether they are water soluble.

- **Monohydrate** = need 5.5g / 100kg liveweight. So a 450kg cow will require 25g of zinc sulphate monohydrate. Use in water soluble systems but at these rates it is not very palatable so intake can vary.
- **Heptahydrate** = need 8g / 100kg liveweight. So a 450kg cow will require 36g of zinc sulphate heptahydrate. Use in water soluble systems but at these rates it is not very palatable so intake can vary.
- **Zinc oxide** = need 2.5g / 100kg liveweight. More palatable and often more reliable intake, but not water soluble so needs to go through feed.

Testing blood (serum) zinc is essential to know the efficacy of any zinc supplementation programme.

## Nutritech Zinc Options

	AquaMin® Zinc			NutriMin® Zinc <sup>NEW</sup>			NutriMin® Silage Balancer Zinc			Flo®Zinc		
<b>Code</b>	0574			0625			1222			0903B		
<b>Pack Size</b>	25kg			25kg			25kg			25kg		
<b>Delivery</b>	Water			Feed			Feed			Drenching		
<b>Use</b>	To supplement zinc for facial eczema prevention plus trace elements via water			To supplement zinc for facial eczema prevention plus trace elements via feed			To supplement zinc for facial eczema prevention plus macro and trace elements via feed			To supplement zinc for facial eczema prevention plus trace elements via drenching		
	<b>cow</b>	<b>yearling</b>	<b>calf</b>	<b>cow</b>	<b>yearling</b>	<b>calf</b>	<b>cow</b>	<b>yearling</b>	<b>calf</b>	<b>cow</b>	<b>yearling</b>	<b>calf</b>
<b>Liveweight</b>	500kg	275kg	90kg	500kg	275kg	90kg	500kg	275kg	90kg	500kg	275kg	90kg
<b>Dose Rate</b> (per head per day)	40g	22g	7g	40g	22g	7g	100g	55g	18g	20g	11g	4g
<b>Elemental Zinc</b> (registered for FE prevention)	10g*	5.5g*	1.75g*	10g**	5.5g**	1.75g**	10g**	5.5g**	1.75g**	10g**	5.5g**	1.75g**
<b>Organic Copper</b>	150mg			150mg			150mg			150mg		
<b>Cobalt</b>	10mg			10mg			10mg			10mg		
<b>Selenium</b>	5mg			5mg			5mg			5mg		
<b>Iodine</b>	8mg			8mg			8mg			8mg		
<b>Calcium</b>							19g					
<b>Sodium</b>							11g					
<b>Magnesium</b>							5.8g					
<b>Flavouring</b>	Yes			Yes			Yes			Yes		

\* Contains ZhuZhu Zinc Sulphate Monohydrate, a registered pursuant to the ACVM Act 1997 No. A009431. See [www.nzfsa.govt.nz/acvm/](http://www.nzfsa.govt.nz/acvm/) for registration details.

\*\* Contains Global Supra Zinc oxide, a registered pursuant to the ACVM Act 1997 No. A006944. See [www.nzfsa.govt.nz/acvm/](http://www.nzfsa.govt.nz/acvm/) for registration details.

**Knowing cow liveweight is important. Zinc for facial eczema prevention should be 2g elemental zinc per 100kg liveweight. If supplementing zinc sulphate via water, build levels up slowly to help adjust cows to the change in taste. The copper, selenium and calcium status of animals should be assessed at the completion of zinc treatment.**

### Why Use Organic Copper During Facial Eczema Season?

A simple way to explain it is to think of copper and zinc using the same 'gate' to get from the digestive system to the blood stream. Therefore, when high rates of zinc are fed it can be very difficult for copper to get through the 'gate'. Chelating copper with an amino acid effectively gives copper its 'own gate', so that it can continue to be absorbed regardless of what is happening with zinc. This way cattle do not become depleted in copper during the facial eczema season.

Note that in the case of a severe, clinical outbreak it is recommended that all sources of copper are removed as a precaution.

### When to Stop Zinc Supplementation?

Facial eczema can continue long into April and May – just because the autumn flush has come doesn't mean that the facial eczema risk is low. As long as the pasture spore counts are >30,000, the risk to your livestock is too high to stop zinc supplementation. You can continue to get your pastures tested by your local veterinarian to know when it is safe to stop.

The effect of zinc reducing the absorption of copper can be mitigated by feeding an organic source of copper. If there are concerns regarding zinc toxicity it is recommended you get bloods done to determine whether cows are above the zinc threshold. If in doubt, talk to your local veterinarian.



## Nutritech Companion Products for Use During the Facial Eczema Season

	AquaTrace® Summer Mix	HiTrace® Summer Mix	NutriPlex® Liquid Copper	NutriPlex® Copper
<b>Code</b>	0621-20 / 0620	0593FE	2722	2089S
<b>Pack Size</b>	20L or 25kg	25kg	25kg	25kg
<b>Delivery</b>	Water or feed	Water or feed	Water or feed	Water or Feed
<b>Use</b>	Contains no zinc. Trace minerals for use when another zinc source is provided.	Contains no copper and no zinc. For use when another zinc source is provided and where copper status is already high.	To supply an organic copper source use when high rates of zinc are fed to prevent the risk of zinc and copper interacting.	To supply an organic copper source for use when high rates of zinc are fed to prevent the risk of zinc and copper interacting.
<b>Dose Rate</b> (per cow per day)	5g or 10mL	5g or 10mL	1.7mL	0.625g
<b>Zinc</b>	-	-	-	-
<b>Copper</b>	150mg (organic)	-	150mg (organic)	150mg (organic)
<b>Cobalt</b>	10mg	10mg	-	-
<b>Selenium</b>	4.5mg (partially organic)	5.0 mg (inorganic)	-	-
<b>Iodine</b>	8mg	8mg	-	-

### Nutritech Heat Stress Pack

Times of peak Facial Eczema risk often coincide with heat stress. Talk to your local Area Manager about our Heat Stress Pack which contains:

- Levucell®SC for proven benefits during heat stress conditions, resulting from improved fibre digestion and rumen health
- Melofeed® primary antioxidant, Vitamin E and Alkosel® organic selenium to help support cows as metabolic activity increases
- Meriden Fusion™DYAD\*\*\* registered mycotoxin binder as warm humid conditions encourage many mycotoxins to thrive

\*\*\* Meriden Fusion DYAD™ is a Registered pursuant to the ACVM Act 1997, No A011062  
See www.foodsafety.govt.nz for registration conditions



## Quality is Assured

To address the issue of residues in trace minerals that are of major concern to feed and food safety, Nutritech adheres to a strict code of quality assurance. Nutritech ensures its products are manufactured to the highest standards, to ensure product integrity and traceability. Our raw materials are sourced globally. All raw materials are supplied with a certificate of analysis confirming mineral content and screening results for undesirable substances, in particular heavy metals, dioxins and dioxin like PCBs. Independent local testing is regularly conducted to confirm product specifications, providing a robust process to confirm the integrity of all raw materials and products. Nutritech operates under the ISO 9001:2015 Quality Assurance and GMP guidelines.



Call Customer Services  
0800 REMEDY (736 339)

[www.nutritech.co.nz](http://www.nutritech.co.nz)



NT-78005 - 2016



**NUTRITECH**  
LEADERS IN ANIMAL NUTRITION