PREVENTION

Prevention is by management as well as Zinc therapy or pasture spraying.
Beware - we usually face a LONG facial eczema season. Don't start too soon!

Zinc based prevention relies on dosing animals with zinc salts, either zinc oxide as a drench or water treatment with zinc sulphate, or the zinc bolus.

- Dry stock can be dosed twice weekly or even weekly intervals.
- Zinc dosing can be expected to reduce, but not completely eliminate FE outbreaks.

Cattle Zinc Drenching

Long Term Dosing - Stabilised Drench

Mix 1kg Zinc oxide powder (Nu Zinc) with 1 litre of water (if not a stabilised product add 200mls of stabiliser and 800 ml water).

- Mix water and stabiliser first if using
- Sprinkle powder on the water and leave to settle and wet
- Stir to a creamy paste
- **Daily dosing 3.5mls per 100kg live weight**
- **3-day dosing 13mls per 100kg live weight**
- **Weekly dosing 30ml per 100kg live weight**

Crisis Dosing

(Dosing only when spore counts are high)

Crisis Dosing (without previous long term dosing) gives less protection than long term dosing and therefore requires higher dose rates to give adequate protection over short periods.

Stabilised Drenches:
5ml / 100kg live weight

Approximate dose volumes : Long term dosing

Dose intervals (days)			1	3	7 (dry cattle only)
		Weight		Dose Volume (ml)	
COWS	Jersey	400	14	60	140
	J x F	450	16	68	158
	Friesian	500	18	76	176
HEIFERS	Jersey	300	10.5	39	90
	J x F	330	11.5	43	99
	Friesian	360	12.5	47	108
CALVES	Jersey	130	5	20	45
	J x F	160	6	24	56
	Friesian	190	7	29	67

Motor-driven Drenching Systems

Some motor driven drenching systems cannot be adjusted to the recommended dose volumes.
Therefore the drench mixture must be adjusted so that the correct amount of zinc oxide is given.

Method

Establish the drench volume per cow:

1. Deliver a set number of shots into a measuring jug
2. Record the total volume
3. Divide the total volume by the number of shots to get the shot volume e.g. If 10 shots gave 550mls = 550/10 + 55mls per shot
4. Repeat at least once to confirm the result
5. Determine the correct zinc oxide dose per cow from the table
   ⇒Subtract 3mls from drench shot volume to compensate for the volume of zinc oxide e.g. 55ml - 3ml = 52ml
   ⇒Multiply volume and the zinc oxide dose rate by the number of cows e.g. 100 cows x (10g zinc oxide + 52mls water) = 1kg zinc oxide + 5.2 litres water (1kg + 5 litres rounded off)
   ⇒Multiply the daily mix by the number of days e.g. For 20 days + 20kg zinc oxide + 100litre water

		Jersey 400kg	J x F 450kg	Friesian 500kg
Long Term Dosing (Daily)	3g per 100kg	12g	13.5g	15g
Crisis Dosing (Daily)	3.5g per 100kg	14g	16g	17.5g

PREVENTION CONTINUES

ZINC SULPHATE IN DRINKING WATER

There are four main methods of adding zinc to the drinking water of cattle.

1. Using an in-line dispenser to add a concentrated solution of zinc sulphate into the water reticulation system. Important points to remember:

- Set a level to which you will fill the reservoir containing concentrated zinc solution
- Adjust the dispenser or the reservoir volume to ensure that each day half to two thirds of its solution is injected into the water supply.
- Calculate the amount of zinc to be added each day (see table). Multiply the dose rate for each class of stock by the number then work out the daily requirement
- At the same time each day, add the total daily amount of zinc sulphate to the concentrate reservoir and then dilute with water to the FULL line. Stir to dissolve the zinc as you fill.

2. Adding zinc sulphate to a large tank (e.g. 22,000 litres or 5,000 gals) which supplies the water reticulation system. The zinc sulphate is added to the large reservoir tank. The tank must obtain at least 100 litres for every cow or cow equivalent. Remember the zinc sulphate should be added about the same time each day. Zinc sulphate should be dissolved in water before adding to the tank.
3. Floating through dispensers (Peta dispensers). Although not as reliable as the first two systems these still appear to give reasonable results and are ideal in situations with smaller numbers.
4. Direct addition to the water trough—this will only cope with very small numbers of animals.

NOTE 1. The addition of Zinc sulphate to the water supply is only suitable to long-term routine dosing—**it is not suited to crisis dosing during danger periods.** Make sure zinc is only distributed to stock. Household and shed water needs to be kept separate. Make sure that livestock do not have access to alternative fresh water during the period that zinc is being added. Addition to the water may be unreliable for treating animals not milking.

NOTE 2. Mixing of other products in water (eg nutrimol) can reduce effectiveness by settling out the zinc in water lines. This may eventually block the lines and severe FE may result.

HOW TO START

Cows should be introduced to increasing zinc concentrations in water over a period of about 3-5 days.

Troughs on the reticulated systems in paddocks that have not been grazed should be primed with zinc sulphate at the rate of 1 gram / litre (0.7 gram/litre monohydrate).

There are two forms of zinc sulphate available. Zinc sulphate heptahydrate is the material most commonly available. Zinc sulphate mono-hydrate is a more concentrated from of zinc sulphate and is used at two thirds the dose rates used for the heptahydrate.

Once calibrated, a volumetric measure is sufficiently accurate for regular use. Weigh out the required zinc sulphate into a plastic bucket. Level the surface and mark the height. Fill the bucket to this level each day.

CONCENTRATED ZINC SULPHATE SOLUTIONS ARE CAUSTIC.
AVOID DIRECT CONTACT AND WEAR PROTECTIVE GOGGLES.

Class of Cattle		Heptahydrate 8g/100kg LW	Monohydrate 5.5g/100 LW
Friesian Cow	500kg	42	27.5
F x J Cows	450kg	36	25
Jersey Cow	400kg	32	20
Friesian Yearling	350kg	28	19
Jersey Yearling	250kg	20	14
Friesian Calf	150kg	12	8

Be sure to strictly follow the mixing instructions with all zinc products, in particular MONO-ZINC, which is always ADDED to WATER and not the water to the powder.