MINERAL MATTERS

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WHEN IT matters

FEBRUARY 2025 ISSUE NUMBER 01

The effect of an injectable trace element supplement given to ewes prior to mating and lambing

The optimal preparation of ewes prior to mating and lambing is essential to help them realise their full potential re conception, embryo survival, survival of the ewe and newborn lamb as well as the growth of the newborn lamb.

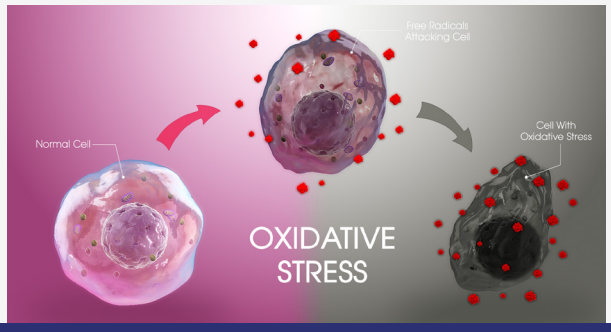
This preparation of the ewe includes optimal nutrition, parasite control, inoculations, udder examination as well as trace element and vitamin supplementation.

Most research in sheep on trace element supplementation in South Africa has been done a long time ago. Due to an increased interest in trace elements, new international research results are becoming available.

Trace elements such as Zinc, Selenium, Copper and Manganese are essential for many metabolic processes in sheep. They are, amongst others, part of various enzyme systems combating the negative effects of oxidative stress.

During the normal use of oxygen at cellular level, various free radicals are formed. These free radicals are part of the animal's normal metabolism and even play a role in the normal immune system. However, as soon as an imbalance between free radicals and antioxidants occurs, the cell is exposed to increased levels of oxidative stress. This impacts negatively on cell function and cell survival.

A balance between free radicals and antioxidants are thus essential for fertility, embryo survival, placental development, healthy immune system, and the development of a healthy and vigorous lamb. During the development of the embryo, as well as during the last six weeks of gestation, there is an increased demand for trace elements. Continuous trace element supplementation by means of licks and supplemental feeding is always necessary, but during these critical periods of increased demand, an injectable supplement overcomes the problem of variable intake and variable uptake of trace minerals from the digestive system



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Increased embryo, lamb and ewe survival not only increase profitability, but also have a positive effect on animal welfare. Research from Australia published in 2023 shows several positive effects of injectable trace element supplementation during the preparation phases of ewes.

This study was done on five commercial farms in Victoria, Australia. A total of 1484 mixed breed ewes were used. Their average trace element status was within the normal range. Some animals did however have marginal values.
There were no farms with any signs of either a trace element deficiency or toxicity during the two years prior to the study.The ewes were randomly divided into two groups. One group received an injectable trace element supplement (Multimin with Copper for sheep) 30 days prior to mating and 30 days prior to lambing. The control group received no supplement.

Approximately 90 days after mating, pregnancy status and conception rate were determined by ultrasound. Lamb mortality was determined 4 weeks post lambing and lambs were weighed 12 weeks post lambing. Ewe mortality during the study period (September 2018 - November 2019) was also recorded.

Although no difference in conception rate* was observed (the average conception rate for both groups was 156%), the following differences were noted:

- Lamb survival 4 weeks post lambing was 9% higher in the treated group.
- At 12 weeks post lambing, lambs in the treated group weighed an average of 2.31 kg more than the lambs in the control group
- Although not statistically significant, the ewe mortality in the treated group was 1.3% lower

An economical analysis showed an extra income of AU$ 23 per ewe in the treated group.This was without taking into account the lower ewe mortalities.

This study shows that injectable trace element supplementation 30 days prior to mating and 30 days prior to lambing may increase lamb survival, weaning weight and profitability. An added benefit is increased animal welfare.

*Another Australian study a few years earlier on 4 farms in South Australia, Western Australia and Victoria using 3829 Merino ewes, showed increased conception rates. Conception rate in the control group was 117% compared to 126% in the treated group. There were also 1.9 % more dry ewes in the control group.

This highlights the need for more research in order to make meaningful inferences. This is because farms, areas and circumstances differ from year to year.

Australia intends to conduct follow-up trials to verify and strengthen current data.

article written by
Dr Hensie Lategan of Bredasdorp Diereklinik

more lambs

Improved lamb survival rate at 4 weeks by an average of

Increased weaning weight by an average of

Healthier, higher weight

Based on these results, a producer could expect an

ADDITIONAL

AU$23 PER EWE

(6:1 return on investment)

DID YOU KNOW

Research has shown that embryo losses in ewes are between 15-30% and can be worse in some circumstances. Nutrient deficiencies, and in particular trace mineral imbalances, are a major cause of embryo losses.

Acknowledgements
A Trace Mineral Injection before Joining and Lambing Increases Marking Percentages and Lam[illegible]ights on Diverse Farms in Victoria, Australia
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