

MULTIMIN OPTIMISES PRODUCTIVITY

OPTIMISE YOUR LAMBING^{1,2}



IMPROVED SPERM QUALITY⁴⁻⁷



HIGHER CONCEPTION RATES¹



OPTIMISED EMBRYO SURVIVAL^{1,2}



IMPROVED IMMUNE FUNCTION¹⁹⁻²²



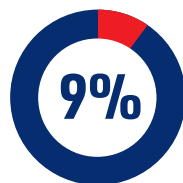
OPTIMISED LAMB SURVIVAL²

RECENT FIELD TRIALS ACROSS FOUR FARMS SHOWED THAT MULTIMIN PLUS COPPER INJECTION FOR SHEEP:^{†2}



MORE LAMBS

BOOSTED THE NUMBER OF LAMBS MARKED BY AN AVERAGE OF



INCREASED THE AVERAGE WEANING WEIGHT BY AN AVERAGE OF



HEALTHIER, HIGHER WEIGHT

BASED ON THESE RESULTS, A PRODUCER COULD EXPECT AN

ADDITIONAL \$23 PER EWE

(6:1 RETURN ON INVESTMENT)[‡]

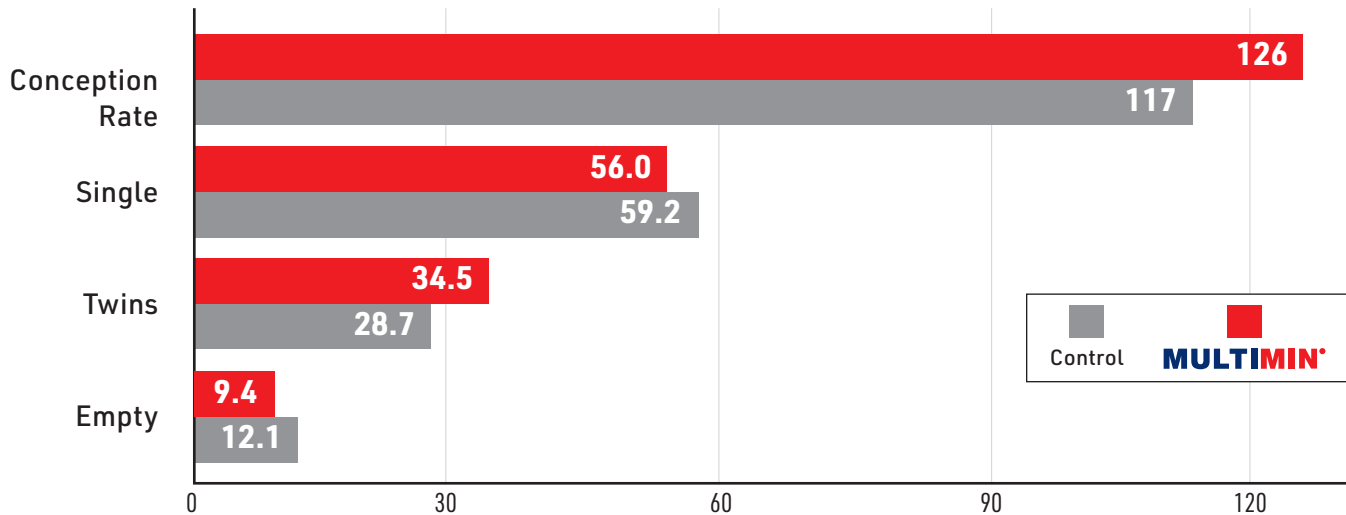
[†] Multimin Plus Copper Injection for Sheep was used in this trial (APVMA n 83674).

[‡] Calculation based on 100 ewes producing 9 extra lambs sold at \$175 each and producing 128 lambs with 2.3 extra kg at weaning. Assuming 46% dressed %, \$8 CWT and \$350 cost of two Multimin treatments + labour.

This is a guide only, outcomes may vary depending on farm management, animal responses and market value.

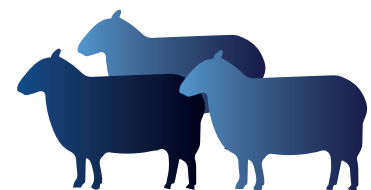
OPTIMISES PREGNANCY AND CONCEPTION RATES

INCREASED CONCEPTION RATE MULTIMIN VS CONTROL¹



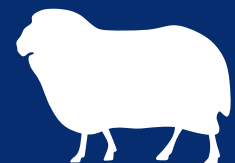
AUSTRALIAN TRIALS HAVE SHOWN THAT GIVING MULTIMIN TO EWES, ONE MONTH BEFORE JOINING CAN IMPROVE FERTILITY:^{▲1}

- REDUCED NUMBER OF EMPTIES
- INCREASED THE NUMBER OF TWINS
- HIGHER OVERALL CONCEPTION RATES



DON'T FORGET YOUR RAMS

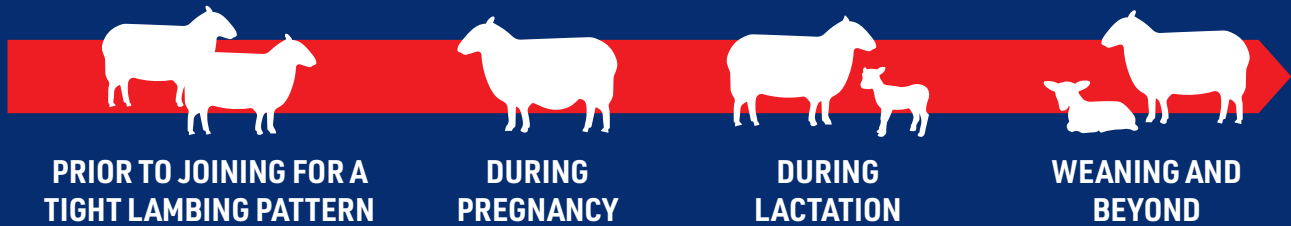
Administer Multimin to rams 3 months before joining, and again at joining. Trace minerals included in Multimin can have a positive effect on libido and sperm concentration, motility and morphology in rams.⁴⁻⁷



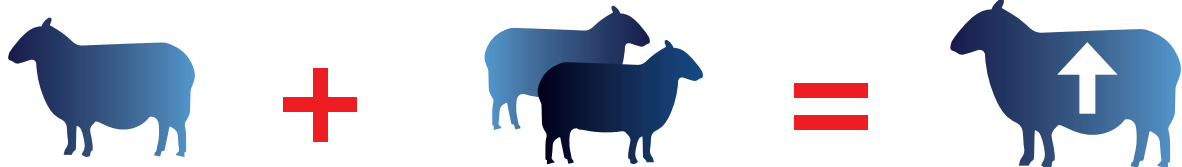
[▲]Multimin Copper-free injection for sheep and cattle was used in this trial (APVMA n 61724).

OPTIMAL CONDITION MEANS OPTIMAL PERFORMANCE

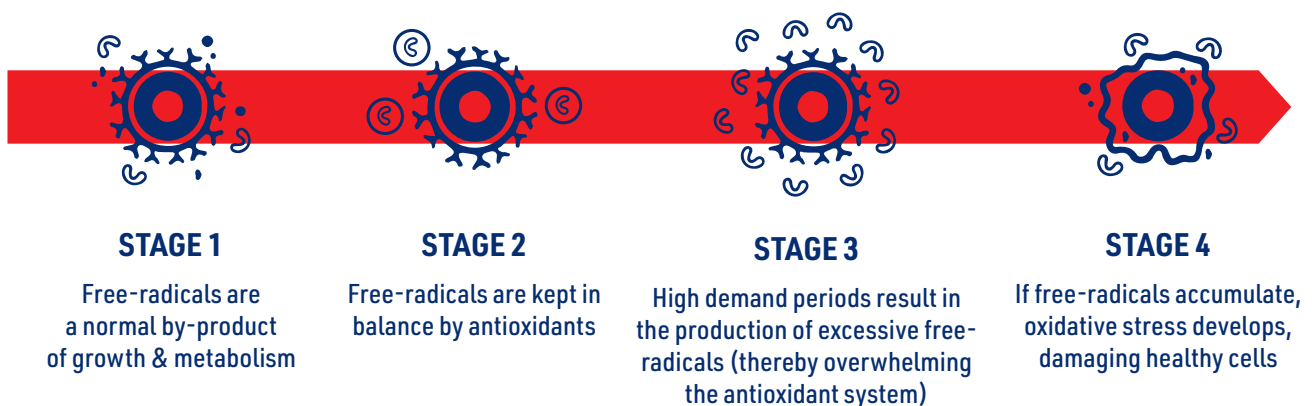
OPTIMAL BODY CONDITION IS KEY FOR OPTIMAL PERFORMANCE AT EVERY STAGE¹⁰



ANTIOXIDANTS ARE IMPORTANT FOR PRODUCTIVITY¹⁴⁻¹⁸

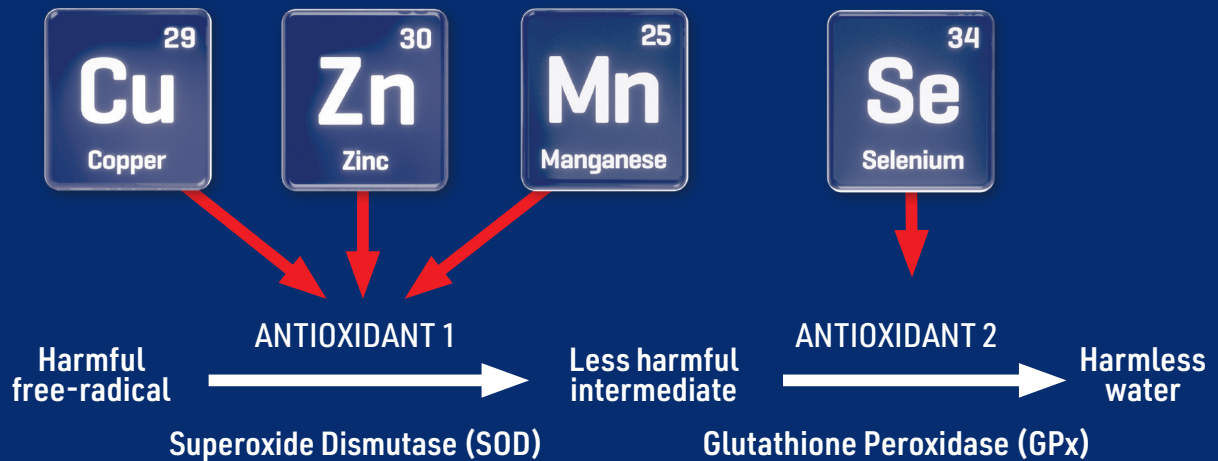


PERFORMANCE CAN COME AT A COST¹¹⁻¹⁶



TRACE MINERALS

HELP KEEP FREE-RADICALS IN BALANCE



Trace minerals in Multimin are needed for the synthesis of antioxidants that neutralise harmful free-radicals into harmless water. ^{17,18}

IMPROVING CONCEPTION RATES

“ For the cost of Multimin[^] per sheep and the return on investment for the amount of ewes scanned in lamb, it really is a no brainer in my experience. I can confidently say that I have seen the use of Multimin in sheep improving conception rates right across Northern NSW.

Tim Lawrence, Sheep Pregnancy Scanning Contractor, scanning over 200,000 ewes per year. Armidale NSW. ”

BENEFITS FOR EMBRYO TRANSFER

“ Multimin[^] was able to increase the survival of embryos by 29% in recipient ewes. I have found that the Multimin has been helpful for decreasing early embryonic loss and subsequently increasing conception rates in embryo transfer programs.

Dr Michylla Seal, veterinarian, WA. ”

MULTIMIN FORMULATIONS³

	MULTIMIN PLUS COPPER INJECTION FOR SHEEP <i>For sheep with elevated copper requirements:</i>	MULTIMIN COPPER-FREE INJECTION FOR SHEEP AND CATTLE <i>For sheep with unknown, or high copper status:</i>
Copper	10 mg/mL copper as disodium copper EDTA	N/A
Manganese	10 mg/mL manganese as disodium manganese EDTA	10 mg/mL manganese as disodium manganese EDTA
Selenium	3 mg/mL selenium as sodium selenite	5 mg/mL selenium as sodium selenite
Zinc	40 mg/mL zinc as disodium zinc EDTA	40 mg/mL zinc as disodium zinc EDTA

MULTIMIN DOSING AND ADMINISTRATION

Rams	Ewes	Ewe lambs	Lambs	Feedlot/trading
12 weeks prior to joining along with the 5 T's	4 weeks prior to joining	Every 3 months	At or prior to weaning (BW +20kg) [#]	At induction concurrently with quarantine treatments
At the start of joining	4 weeks prior to lambing	4 weeks prior to joining and 4 weeks prior to lambing		

[#]To accurately measure out a small dose, lambs should be at least 20 kg.

- Multimin Plus Copper Injection for Sheep and Multimin Copper-Free Injection for Sheep are administered as a subcutaneous injection at 0.2 mL / 10 kg (1 mL / 50 kg) before high demand periods.
- Always dose sheep according to their individual bodyweight - do not administer more than the recommended amount.
- **DO NOT** use concurrently with drenches, boluses or other animal health products containing selenium or copper.
- Multimin can be administered concurrently with other animal health products. If in doubt, consult your veterinarian. **DO NOT MIX products with Multimin in the same syringe prior to administration. Always inject high on the neck, multiple injections should preferably be given on different sides of the neck, according to product label instructions.**
- No withholding periods for milk, meat or export.³

INCREASE LAMBING RATES WITH MULTIMIN AND OVASTIM

The use of Ovastim and Multimin in the Target Sheep Repro program can deliver unparalleled results to help improve productivity, fertility and fecundity through a dual mode of action.

Ovastim = more ova (eggs)

Multimin = improves embryo survival, more and healthier lambs

SCAN FOR MULTIPLES

The Target Sheep Repro program is suitable for sheep producers who scan their ewes for multiple lambs and are looking to dramatically increase the number of lambs per ewe.

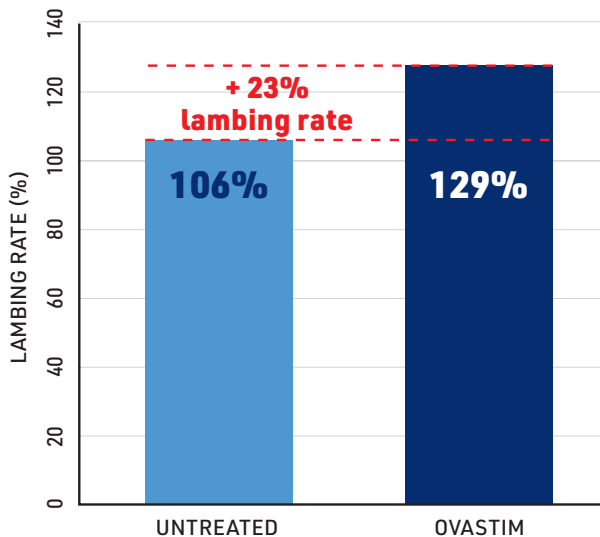
To improve lamb and ewe survival rates it is important to manage multiple bearing ewes separately and apply the Lifetime Ewe Management (LTEM) principles.



OVASTIM INCREASES LAMBING RATES BY AN AVERAGE OF 23%⁸



INCREASED LAMBING RATE OVASTIM VS CONTROL



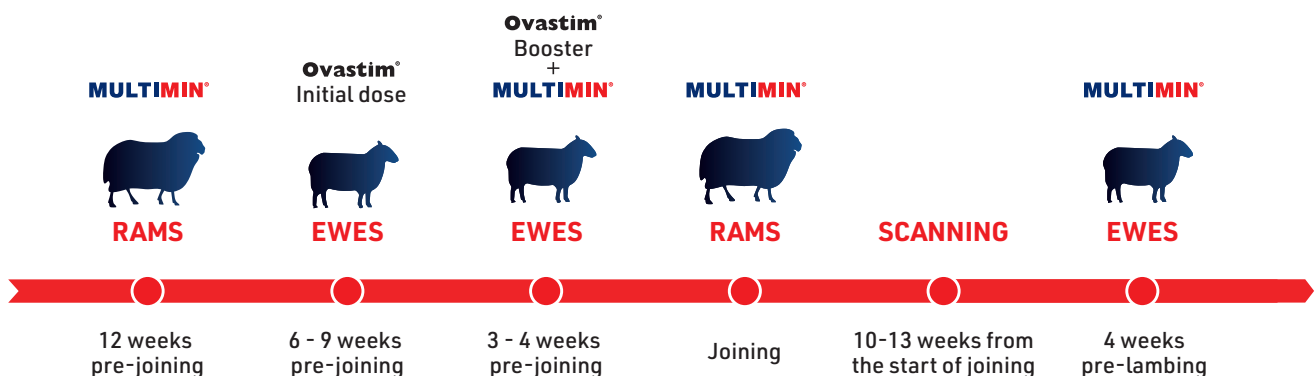
“ It was no surprise that the use of Ovastim was likely to be massively profitable. Using Ovastim in a typical prime lamb flock may result in a profit of about \$18/ewe in today’s market.

Using Multimin and Ovastim represents a sensational profit-booster for Merino and Prime Lamb enterprises.

Dr Graham Lean, Principal Consultant, Agrivet Business Consulting ”

Modeling based on 2 year average commodity prices for lamb, wool and mutton and grain. Assumed 813 c/kg for lamb and 632 c/kg for mutton. Assumes 23% increase in lambs born.

THE MULTIMIN AND OVASTIM PROGRAM^{^9}



MULTIMIN®

WHEN IT MATTERS



- MultimMin is the only trace mineral injection that increases productivity in sheep by improving fertility and immunity when it matters.
- Low volume formulation that is rapidly absorbed, readily utilised and provides sustained activity during high demand periods.²³⁻²⁵
- Can increase conception rates by an average of 9%.¹
- Has been shown to increase weaning weights by an average of 2.3 kgs.²
- Optimises immune function in sheep and improves lamb survival.²
- MultimMin improves and speeds up vaccine response. **Don't vaccinate without MultimMin.**¹⁹⁻²²

For more information about how MultimMin can improve the health and performance of your flock, contact your local Virbac Area Sales Manager or Virbac Customer Support 1800 242 100.

au.virbac.com

REFERENCES: 1. Swaney, S. (2014). Increasing conception rates in sheep by using an injectable trace mineral product prior to joining in diverse regions across Australia, Virbac data on file. 2. Gonzalez-Rivas P.A., Swaney S., Evans R., Chambers M., Liu J. (2021) Effect of a trace mineral injection before joining and lambing on conception rate, marking rate and lamb weights in diverse farms in Victoria. *Animal Production in Australia* 33, cxviii. 3. Refer to registered labels APVMA n 61724 and 83674. 4. Ghorbani, A. et al. (2018). Influences of dietary selenium, zinc and their combination on semen characteristics and testosterone concentration in mature rams during breeding season, *J. Appl. Anim. Res.* 46(1):813-819. 5. Piagentini, M. (2017). Effect of selenium supplementation on semen characteristics of Brazil's ram. *Reprod. Domest. Anim.* 52(3). 355-358. 6. Masters, D.G. et al. (1988). Influence of manganese intake on body, wool and testicular growth of young rams and on the concentration of manganese and the activity of manganese enzymes in tissues. *Aust. J. Agri. Res.* 39:517-524. 7. Underwood, E.J. and Somers, M. (1969). Studies of zinc nutrition in sheep. 1. The relation of zinc to growth, testicular development and spermatogenesis in young rams. *Aust. J. Agri. Res.* 20: 889-897. 8. Geldard, H. et al. (1984). Immunisation of ewes with polyandroalbumin to improve fecundity. *Aust. Vet. J.* 61(4):130-132. 9. Refer to registered label APVMA n 51133. 10. Government of Western Australia, Department of Primary Industries and Regional Development, Managing Pregnancy in Ewes. <https://www.agric.wa.gov.au/management-reproduction/managing-pregnancy-ewes>. 11. Nawito, M.F. et al. (2016). Impact of pregnancy and nutrition on oxidant/antioxidant balance in sheep and goats reared in South Sinai, Egypt. *Vet. World*, 9: 801-805. 12. Sales, F. et al. (2018). Hypoxia and Oxidative Stress Are Associated with Reduced Foetal Growth in Twin and Undernourished Sheep Pregnancies. *Animals (Basel)*, 8, (11) 217. 13. Smith, S.M. et al. (2016). Meta-analysis indicates that oxidative stress is both a constraint on and a cost of growth. *Ecol. Evol.* 6:2833-2842. 14. Masters, D.G. (2018). Practical implications of mineral and vitamin imbalance in grazing sheep. *Anim. Prod. Sci.* 58: 1438-1450. 15. Hinde, D. (2020). Trace elements in sheep—are they really a cure all? *Livestock*. 25: 30-35. 16. Celi, P. (2010) 'The role of oxidative stress in small ruminants' health and production', *RBZ*, 39:348-363. 17. Yatoo, M. I. et al. (2013). Role of trace elements in animals: a review. *Vet. World*, 6 (12): 963-967. 18. Suttle, N. (2010). *Mineral Nutrition of Livestock*, 4th Edition. CABI, Cambridge. 19. Arthington, J. D., & Havenga, L. J. (2012). Effect of injectable trace minerals on the humoral immune response to multivalent vaccine administration in beef calves. *J. Anim. Sci.*, 90(6), 1966-1971*. 20. Roberts, S. L. et al (2016). Effect of injectable trace mineral administration on health, performance, and vaccine response of newly received feedlot cattle. *Prof. Anim. Sci.*, 32(6), 842-848*. 21. Palomares, R. et al. (2016). Effects of injectable trace minerals on humoral and cell-mediated immune responses to Bovine Viral Diarrhea Virus, Bovine Herpes Virus 1 and Bovine Respiratory Syncytial Virus following administration of a modified-live virus vaccine in dairy calves. *Vet. Immunol. Immunopathol.*, 178:88-98*. 22. Ball, M. (2016). Trace mineral injection enhances antibody response to botulism vaccination. *AVA Proceedings, Adelaide**. 23. Hansen, S (2010) Effects of MultimMin®90 on trace mineral status of Angus and Simmental calves. Iowa State University, Department of Animal Science*. 24. Pogge, D. J. et al. (2012). Mineral concentrations of plasma and liver after injection with a trace mineral complex differ among Angus and Simmental cattle. *J. Anim. Sc.* 90(8), 2692-2698*. 25. Virbac (2020) Trial protocol 616/20*. MKTGLST072

Benefits outlined in scientific trials are not necessarily registered label claims.

*MultimMin used in this trial contained different levels of minerals compared to those registered in Australia and/or was evaluated in species other than sheep.

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^ MultimMin can be administered concurrently with other animal health products. If in doubt, consult your veterinarian.

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Shaping the future
of animal health

