

Managing Parasites

REFUGIA-BASED STRATEGY



Boehringer
Ingelheim

Global Leaders in Parasiticides



REFUGIA-BASED STRATEGY

What's the problem?

If there are not enough susceptible parasites in the environment, there will be an emergence of resistant parasites.



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REFUGIA-BASED STRATEGY

What is resistance?

Resistance in parasites is a reduction in susceptibility of a parasite to an anti-parasitic medicine when used at the recommended concentration and according to all of the recommendations for its use.

When resistance develops medicines can become less effective making parasitic infections difficult to control.

Inappropriate treatment may lead to the development of resistant parasites.

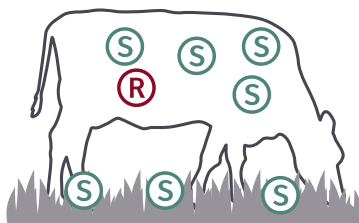
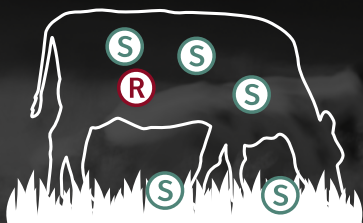
Refugia

Regarding parasite control, refugia are defined as places where the parasite can survive by not being exposed to the medicine (anti-parasitic). A refugia.

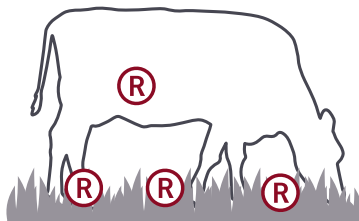
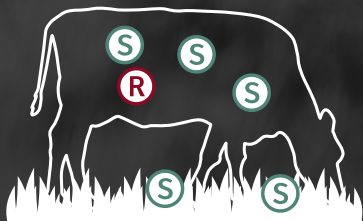
A refugia-based method is a good way to control or slow down the emergence of resistant worms.

When cattle and sheep are treated with anti-parasitics, some parasites are susceptible (S) and die, while others are resistant (R) and survive.

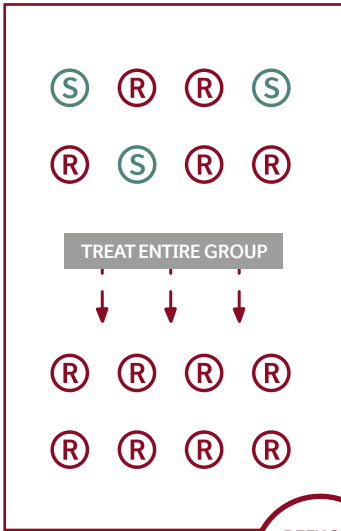
These surviving worms are resistant to the anti-parasitic treatment and transmit the genetic trait of resistance through their eggs and developing larva.



The parasites in the untreated animal will thrive as they are protected from the medicine / treatment (refugia).

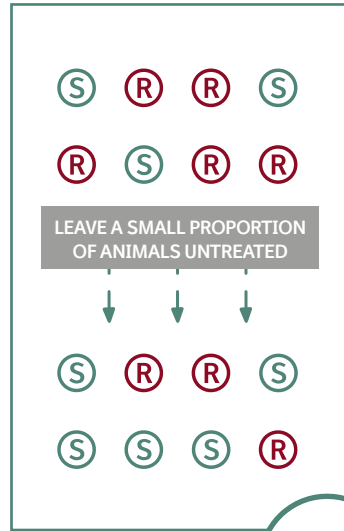


The susceptible (S) parasites in the treated animal will die, while only the resistant (R) will survive (no refugia).



REFUGIA
ARE NOT
PRESERVED

If there are not enough susceptible parasites in the environment, there will be an emergence of resistant parasites.



REFUGIA ARE
PRESERVED

If the number of susceptible larvae dominate the pasture population, the risk of developing resistance is reduced.



The goal of refugia is to maintain a balance of effectiveness and sustainability in parasite control.

By leaving a small proportion of animals untreated, a large number of susceptible parasites will reach the pasture and “dilute” out the low number of resistant parasites, which improves the sustainability of a control program.



How to Promote Refugia

Strategic Treatment (ST)



Plan the treatment of groups of animals based on previous experience/history to minimise worm burden, pasture contamination and disease.

Rotate Grazing

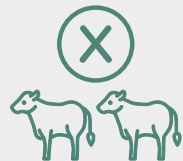


Targeted Treatment (TT)



Treatment of groups of animals based on assessment of current parasite risk (e.g. treating at first grazing season when faecal egg count (FEC) results indicates it).

Leave Small Portion of Animals Untreated



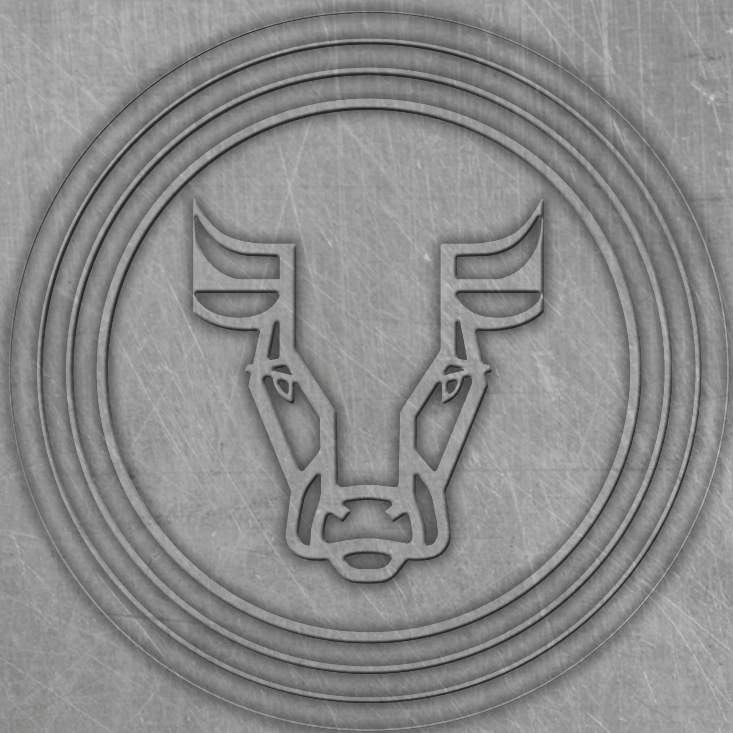
Targeted Selective Treatment (TST)



Treatment of individuals or subgroups based on an assessment of current parasite risk (e.g. treatment of only poorer doing calves).

Monitor by FECRT (faecal egg count reduction test).





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