

Seed dispersal by sheep of Chilean needle grass (*Nassella neesiana* Trin. & Rupr. Barkworth)

M. R. Gardener and R. D. B. Whalley

Botany Department, UNE, Armidale, NSW, 2351

Chilean needle grass (*Nassella neesiana*) is a perennial tussock forming grass native to South America. This grass has become a serious weed in pastures on the Northern Tablelands because its unpalatability reduces animal productivity. Preventing further dispersal is important if the spread of this weed is to be contained. The sharp, pointed seeds (dispersal units) are transported in the coats of animals and in the case of sheep are said to penetrate hides reducing the value of carcasses (Bourdot and Hurrell 1992).

The aim of this study was to estimate the time that seeds remained in the wool and whether skin penetration actually occurred.

Methods

The study was carried out at "Ban Wyong", 5 km south of Ben Lomond on the Northern Tablelands. Twenty Border Leicester x Merino ewes were allowed to run in a paddock of seeding Chilean needle grass for a period of 2 weeks. The animals were then transferred to a "clean" paddock where no further seeds could be collected. The sheep were captured regularly and the number and position of seeds was recorded. Position was divided into underside, back and head. The proportion of seeds with their points (callus) embedded in the skin was recorded.

Results and Discussion

The majority of the seeds were concentrated in the underside (lower neck and belly) of the sheep. Initially, 50% of the seeds had the callus embedded in the skin making a small wound but no penetration was observed. After 5 weeks 80% of the seed had fallen out. Only 5% of the remaining seed had lodged in the hide while the rest remained loose in the wool. These results are in contrast with statements by Bourdot and Hurrell (1992) that the seeds of Chilean needle grass penetrate into the flesh of sheep.

Conclusion

About 20% of the original seed load was still carried by the animals after 5 weeks but there was no evidence of seeds penetrating the flesh.

Acknowledgments

We would like to thank Michael and Barbara Mulligan for assistance and the use of their property for experiments. We are grateful to the MRC for providing funds to undertake this study.

References

- Bourdot, G.W. and Hurrell, G.A. (1992) Aspects of the ecology of *Stipa neesiana* Trin. & Rupr. seeds. *New Zealand Journal of Agricultural Research* 35: 101-108.