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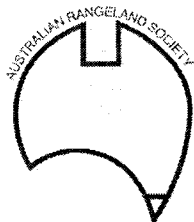
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## EFFECTS OF HERBICIDES ON BARLEY GRASS-CHENOPOD PASTURE

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### INTRODUCTION

Annual barley grass (*Hordeum leporinum*) causes significant production, management and health problems for the sheep industry. Pasture composition has changed as this grass has invaded large areas of the Riverina in NSW.

The yearly cost of barley grass to the wool industry has been put at \$96 million (1).

Treating small areas with herbicide to control seed set, and to provide sufficient pasture during the period seed could infest susceptible sheep will allow better management of barley grass seed problems.

### AIM

This study looked at the effects of two herbicides (Glyphosate - Roundup (R); Paraquat - Gramoxone (R)) on barley grass - bladder saltbush (*Atriplex vesicaria*) - copperburr (*Sclerolaena* spp.) pastures in terms of their species composition, biomass and nutritive value.

### TRIAL

Two sites were sprayed with the two herbicides at a normal and a low rate in September, 1988. Pastures were assessed in October, 1988, and January 1989.

### PASTURE COMPOSITION

The species composition was not altered greatly (See Table 1)

- \* Bladder saltbush remained alive and thrived, while barley grass senesced
- \* The copperburrs (*Sclerolaena* spp.) increased
- \* Medics, largely burr medic (*Medicago polymorpha*) decreased
- \* The proportion of other broadleaf plants increased, including some that could be harmful on stock, such as onion weed *Asphodelus fistulosus* and small-flowered mallow (*Malva parviflora*).
- \* Roundup advantaged the chenopod pasture. Gramoxone appeared to have more deleterious effects on pasture.

**Table 1:** Pasture Composition after Herbicide Application (% of pasture)

Plants	October 1988		January 1989	
	Control	Herbicide	Control	Herbicide
Barley Grass	60	57	43	45
Saltbush	19	21	37	35
Medic	19	16	16	11
Copperburrs	1.0	1.6	2.5	3.3
Other Plants	1.5	3.9	3.0	5.6

## BIOMASS

Total dry matter of pasture was reduced by herbicide. (See Table 2)

**Table 2:** Pasture Biomass after Herbicide Application

Treatment	Biomass*
Control	4.7
Roundup	4.1
Gramoxone	3.5

\* Dry Matter: tonnes/ha

The early senescence of barley grass after herbicide applications appeared to allow retention of more soil moisture, to the benefit of other species.

## NUTRITIVE VALUE OF PASTURE

### Barley Grass

Herbicide treatment creates "standing hay" of barley grass. Energy and nitrogen content were higher and fibre levels lower after herbicide treatment compared with naturally senescing barley grass.

### Other Components of Pasture

The energy, nitrogen and fibre levels of combined other components of pasture were not significantly altered by herbicide treatments.

## SUMMARY

Herbicides are a useful tool in managing barley grass in rangelands pasture.

## OUTCOMES

The method is being widely tried by graziers in the Riverina, and is being extended to control of corkscrew (*Stipa* spp.) seed damage.

## REFERENCE

1 Sloane, Cook and King Pty Ltd (1989). The economic impact of pasture weeds, pests and diseases on the Australian wool industry. Australian Wool Corporation.