

SERRATED TUSsock.

K.R. Green, Department of Agriculture, Sydney.

Serrated Tussock (Nasella trichotoma) is undoubtedly the most serious weed on the Central and Southern Tablelands of N.S.W., if not, of the entire State. The area affected is about 1,500,000 acres with about 30,000 acres densely infested. It is also a major problem of the South Island of New Zealand. (1)

The plant is a long-lived fine leaved tussock grass which is undesirable on account of the very fibrous nature of its leaves which renders it unpalatable. It seeds freely producing up to 100,000 fruits per plant. These are distributed widely as the light weight inflorescence is easily detached from the plant and readily carried by wind and animals. The plant is aggressive and is spreading rapidly in native pasture and more slowly in improved pasture. It is very resistant to fire and once established it is difficult to eradicate owing to its rapid re-establishment from seed.

Serrated Tussock is a native of the Upper Reaches of the River Plate Region of South America, where, strangely enough, it is reported sensitive to excessive grazing. (2)

It was first publicised in N.S.W. in 1937 (3) when found near Yass, but it appears to have been established in N.S.W. for at least forty years. The known distribution extends from just north of Bathurst to Nimmitabel in the south. The biggest infestations are south of Bathurst. Isolated outbreaks are known right down the Tablelands, while further very dense infestations are found near Captain's Flat.

The country concerned is mostly undulating to hilly and mostly above 1,500 ft. The elevation, however, seems only to relate to climate as in New Zealand it is found right to sea level.

Pasture improvement in the region is going ahead, but would constitute less than 10% of the total area. We would not be so worried about tussock if the threatened area could be cultivated or even if a greater proportion had been pasture improved. Its spread in the last ten years leaves a very real fear that Serrated Tussock will occupy much of the Tablelands before they can be protected by pasture improvement and removal of sources of seed.

W/6c/GRE/1

Serrated Tussock is a declared noxious plant where it occurs and most of the Shires concerned are making strenuous efforts to force its eradication. One problem they have met with, however, has been the relatively innocuous appearance of the plant which has induced apathy by some landholders. Total eradication of the plant now seems impossible but the objective is to eradicate all isolated infestations and to reduce and confine dense areas.

Existing plants are being eradicated by mainly mechanical means - the chisel plough seems well adapted to much of the stoney country involved. Diesel distillate at 300 to 400 g.p.a. has proved a useful spray while T.C.A. is promising at about 75 lbs., but with variable results associated with climatic conditions. Other chemicals are being tested. From the ecological approach some progress has been made but control of established tussocks by grasses is difficult - those showing promise include Phalaris and Cocksfoot. Pines have been successful in New Zealand on small areas and have been seriously considered here.

Subsequent treatment of infested areas is basically pasture improvement, Subterranean clover alone is useful, but certainly does not keep tussock out. A vigorous perennial grass is necessary to give reasonable control and of these Phalaris has proved best being very competitive once established and climatically suited. The Rye grasses provide more competition in the first year, but have restricted adaptability and are less competitive later. It is not yet clear how much we can rely on pastures to compete with tussock as I have seen dense tussock seedlings in a newly sown pasture in New Zealand. Where possible it seems advisable to sow a crop before planting pastures.

To prevent further spread of the tussock, pasture improvement has a very definite place. Phalaris is almost immune, Rye grass fairly resistant and sub clover or good native pasture somewhat resistant.

Serrated Tussock control is regarded as the most urgent weed research problem in N.S.W. at present.

- (1) A.J. Healy, D.S.I.R.O., New Zealand, Bulletin 91.
- (2) B. Rosengurtt (Studies into Natural Pastures of Uruguay, Contribution No. 5, 1946). P. 283
- (3) D.O. Cross, Agricultural Gazette N.S.W., 47: 546, 1937.