Three steps to successful management of Chilean needle grass (*Nassella neesiana*)

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Summary Increased concerns over the ability of Chilean needle grass (*Nassella neesiana* (Trin. & Rupr.) Barkworth) (CNG) to invade and impact agricultural, natural and urban systems in south-eastern Australia have led to its status as a 'Weed of National Significance' (WoNS), one of Australia's twenty worst weeds.

The presence of CNG has a devastating impact on agriculture. It can severely reduce pasture productivity, contaminate crops and hay, and the needle-like seed can injure stock or pets. Seed burrows into the fleece and skin of sheep; it cannot easily be removed and is a major cause of wool and carcass downgrading. Considered one of the worst environmental weeds, CNG is highly invasive in native grasslands, of which less than 1% remains (Ross 1999). It invades urban parks and gardens and is a significant riparian weed.

There are three key challenges in Chilean needle grass management:

1. It is difficult to differentiate from other grasses when not in flower;
2. Its seed readily attaches to stock, vehicles, equipment and machinery causing rapid spread of infestations especially along roadsides; and
3. Management requires application of a range of control methods that will vary in different land use situations.

Addressing each of these challenges provides land managers with three steps to ensure they have the best chance of successfully controlling Chilean needle grass:

1. Learn to accurately identify
In spring, CNG produces distinctive purple seeds with long light-green awns that have a nodding habit. It is easily identified by a distinct collar (corona) found where the seed tail joins the seed head. However when not in seed it is easily mistaken for other grasses, especially spear grasses (*Austrostipa* spp.). There are several characteristics that aid identification during this period. Short erect hairs can be observed on the upper side of leaf; two tufts of hair can be seen at the ligule and seeds can be found in the stems and base of the plant.

2. Implement sound hygiene practices
Adequate hygiene practices are essential to prevent further spread of CNG. Avoid working in, or having stock in, areas where it is in seed. Work in clean areas first and always inspect and clean down any vehicles, machinery or equipment used in a CNG infestation. Accredited vehicle and machinery hygiene courses (such as the Victorian Department of Primary Industries WeedStop Program) are available and should be undertaken. Similarly, contractors with a weed-hygiene accreditation should be hired as a first preference.

3. Always integrate a range of control methods
Good hygiene practices are the first essential step to reduce or prevent invasion. Once spotted, small infestations should be treated with urgency and chipped out or spot sprayed immediately. The key to controlling larger or more established infestations is to integrate a number of control methods to prevent seed set and provide competition to existing or re-emerging plants. Control methods such as using chemicals, slashing, strategic grazing, renovation, competition and burning are successful in different situations. Appropriate methods vary within situations such as pastures, crops, native grasslands, or linear reserves (e.g. roadsides).

It is essential that land managers follow current best management practices to ensure on-ground activities consistently reflect the most suitable management practices. Further information on identification and best practice management are available in the National Chilean Needle Grass Best Practice Manual available at www.weeds.org.au/WoNS/Chileanneedlegrass/.

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REFERENCE

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