

Are you importing weeds onto your property?

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Introduction

The short answer is yes, you are importing weeds to your property every time you bring stock, seed machinery or vehicles on. The real question is "Are they important and what can I do about them?"

It is well known weeds can be spread on machinery and vehicles (Wace 1977), in hay and produce. Legislation exists in all Australian states and territories aimed at curtailing the introduction, establishment and spread of noxious weeds. Recent work by Moerkerk (2005, 2006) has shown that over 50% of utility vehicles, used mainly in primary production and land management activities, carry noxious weeds. Minimising the introduction and spread of new weeds onto a property is part of risk management. It requires some thought, planning and awareness of the weeds that are of concern, how they propagate, their methods of spread and what impact they may have if they are introduced.

Strategies implemented for reducing the introduction and spread of weeds on to a farm can also have an impact on other pests and animal and plant diseases.

Background

Nationally accredited Weed Movement, Machinery Inspection and Cleaning Workshops developed by the Victorian Departments of Primary Industries and Sustainability and Environment (Lardner *et al.* 2004), address important issues involved in weed movement. These include understanding weeds, job planning to reduce weed movement, inspection and cleaning machinery of contaminants, keeping records, reporting and legislative obligations.

During the presentation of these workshops in Victoria and South Australia, participants were required to demonstrate their competencies in collecting samples from equipment and machinery for analysis. This created an opportunity to assess the types of contaminants observed on vehicles and where they are occurring.

Over 50 workshops have been presented in southeastern Australia since the program commenced in June 2004. Thirteen workshops have been held in NSW, three in SA and 36 in Victoria with a focus on Local and State Government agencies. Over 630 people have undergone the training.

Over 100 items of equipment and vehicles have been assessed. These include 36 items of machinery and 70 passenger vehicles, which include 2WD and 4WD utilities and wagons. Over 420 samples have been analysed by visual assessment and subsequently growing the material out in a glasshouse study. Many of these samples are still being assessed six months after collection. There have been over 230 plant species in 53 families found in the material removed from the vehicles. Vehicles and machinery carried an average of 20 species with some vehicles carrying 48 different species including six noxious weeds. Ten percent of the species recorded are declared Victorian noxious weeds and these are listed in Table 1.

Approximately 40% of passenger vehicles and 25% of machinery have been found to be carrying noxious weeds. Twenty-one of the noxious weed species have been recorded from passenger vehicles and surprisingly 12 species have been recorded from the cabin samples. The major contamination locations are in the cabin and engine bay of vehicles. Only nine noxious weed species have been recorded on items of plant and machinery.

The types of weeds contaminating vehicles and machinery will reflect the flora of the region they have been in. Having some knowledge of the previous job location of vehicle or machinery can help in assessing the risks your farm is exposed to when this equipment is used. If contractors are engaged and they maintain a logbook and practice good hygiene measures then the risks of introducing new weeds are greatly diminished.

Recommendations:

Strategies to minimise the risks of introducing new weeds

- *Know your weeds and potential threats.*
Developing an awareness and knowledge about the weeds that pose a threat to your production systems will help focus your attention on the weeds important to you. This knowledge can assist in developing strategies to reduce the risks of introduction along with arming you with some tools to deal with the weed if it becomes established.
- *Fodder and grain can contain large numbers of contaminants.*
Ensure they come from an area that does not

Table 1 Victorian noxious weeds species found on passenger vehicles and machinery in *Weed Movement Machinery Inspection and Cleaning Workshops*.

Species	Passenger Vehicles										Machinery							
	Cabin	Engine bay	Tray	Guards and chassis	Attachments	Spare wheel	Radiator	Wheels and wheel arches	Unspecified	Number of vehicles	Cabin	Engine bay	Tyres and tracks	Mowers/slathers	Blades and buckets	Guards and chassis	Unspecified	Number of items
<i>Cirsium vulgare</i> Spear thistle		2	1	2	1	1				7								
<i>Tribulus terrestris</i> Caltrop	6	1			1				1	6		1						1
<i>Echium plantagineum</i> Paterson's curse	1	2	1	2				1		6								
<i>Nassella neesiana</i> Chilean needle grass	1	1	1	2						4			1					1
<i>Marrubium vulgare</i> Harehound	2	3		1					1	4								
<i>Foeniculum vulgare</i> Fennel			1							1	1		1			1		3
<i>Xanthium spinosum</i> Bathurst burr		1					1		1	3								
<i>Dittrichia graveolens</i> Stink wort		1			1	1		1	1	3								
<i>Cenchrus longispinus</i> Spiny bur grass	1	2	1							2								
<i>Eragrostis curvula</i> African love grass	1					1				1		1			1			2
<i>Carthamus lanatus</i> Saffron thistle		1	1							2								
<i>Ulex europaeus</i> Gorse			1							1	1							1
<i>Juncus acutus</i> Spiny rush							1			1				1	1			1
<i>Conium maculatum</i> Hemlock	1									1				1				1
<i>Oxalis pes-caprae</i> Sour-sob											1			1				2
<i>Pennisetum macrourum</i> African feather grass	1									1	1							
<i>Nassella trichotoma</i> Serrated tussock	1									1	1							
<i>Carduus tenuiflorus</i> Slender thistle							1				1							
<i>Emex australis</i> Spiny emex	1									1	1							
<i>Centaurea calcitrapa</i> Star thistle								1			1							
<i>Onopordum acaulon</i> Stemless thistle	1									1	1							
<i>Silybum marianum</i> Variegated thistle	1									1	1							
<i>Rosa rubiginosa</i> Sweet briar rose																1		1
Number of species	12	9	7	4	3	3	3	2	5	21	2	1	2	2	3	3	1	9
Frequency of contaminant location (%)#	62	48	25	28	10	10	10	7	22									

Percentages do not add up to 100% as vehicles may be carrying more than one species of noxious weed.

have the weeds that you are concerned about or have been produced in a way that minimises the risks of propagules being present. Ask for vendor declarations about their content.

Pay particular attention to drought and disaster fodder relief. Feed out your own hay in the paddock it was produced in or think about stock containment areas for feeding fodder and grain. Seed for sowing can also contain weed seeds, certified seed does not mean weed free just a guarantee of varietal purity. Request the seed analysis certificate and inspect a sample before purchase.

- *Check all stock coming onto the property for seed contamination.*
Wool and skin can carry a large number of propagules but don't forget where the stock has been grazing or what it has been fed. Viable seeds of many species of weeds can be carried in the intestines of sheep and cattle for up to two weeks.
- *Vendor declarations*
Vendor declarations could be required to assist in assessing the risks you expose yourself to when purchasing stock, seed, fodder and machinery. They can list the weeds that are contained in the produce you purchase. You could also provide vendor declarations when you sell produce to increase your market edge.
- *Ensure equipment is clean when it comes onto the property.*
Specify to your contractors that they need to have a documented process for cleaning and recording the risks they have been exposed to.
- *Designate a cleaning area and provide facilities for visitors to the farm to wash down.*
Better still use your own vehicles on your farm to take visitors or stock agents and agronomists around. Let all visitors to your property know of your hygiene procedures. When you visit other farms use their vehicles. Check your clothes and foot wear for soil and seed contamination.

Minimising weed spread around the farm

- *Know where your weed problems are so you can plan work around the farm.*
Work from clean areas to dirty areas. Stick to tracks and avoid driving through paddocks or patches of weeds. Think of changing the way you move around the farm. A quad bike is much easier to inspect and clean down than a utility. Work in areas with problem weeds when they have no propagules present so you minimise the risks of spreading them further. Clean equipment when it has been exposed to weed propagules, don't forget the mud on tynes and tyres.

- *Practice good agronomy and weed management to minimise weed growth and propagule production.*
Be observant and control problem weeds on the farm before they seed and get out of hand and keep stock out of areas when weeds are in seed. Stopping seed and other propagules from being produced greatly reduces the risks of plants being spread by other vectors such as wind, water and animals.
- *Stock containment areas can be used for feeding and quarantining new stock so they can clean themselves out.* It is easier to monitor a small paddock for new weed introductions rather than a large paddock or the whole farm.
- *Feeding can be done in feedlots or always in the same place in the paddock to contain weed propagules.* It is easier to monitor smaller areas where hay has been rolled out than over the whole paddock.

The farmers who are passionate about their weeds tend to get on top of them quickly. Be observant around the farm and over the fence and get the new weed identified early.

You can not eliminate all the pathways or the risks of introducing new weeds but you can reduce the risks by taking a little care in controlling the problems and practicing good farm hygiene.

References

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