

Groundsels and Livestock Poisoning

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Figure 1. Threadleaf groundsel (*Senecio flaccidus*).

INTRODUCTION

Groundsels are woody-stemmed, native, perennial plants that often cause livestock poisoning in winter and early spring. Poisoning of cattle and horses is reported most often, while sheep and goats are poisoned less frequently.

DESCRIPTION

Multiple groundsel species occur in New Mexico, but there are two that concern livestock producers: threadleaf groundsel and Riddell's groundsel. Threadleaf groundsel (*Senecio flaccidus*; Figure 1) is a gray-white half-shrub, 1–3 ft tall, with linear leaves divided into three to seven segments. It is usually covered with long white hairs, giving the plant a woolly appearance, but can also be nearly smooth in appearance. Riddell's groundsel (*Senecio riddellii*) is much the same as threadleaf groundsel, except its leaves are relatively hairless, revealing their bright green color. Both species have bright yellow flowers on the stems, all at about the same height above the ground. This gives the plants a flat-topped appearance during bloom. Threadleaf groundsel can produce flowers any time of

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the year, and often remains green year-round. Riddell's groundsel produces flowers in late summer to early fall and dies back to ground level after frost.

Threadleaf groundsel typically grows on dry slopes, canyons, arroyos, and mesas. Riddell's groundsel grows in piñon-juniper woodlands, grasslands, brushy scrubland, plains, and foothills. Both plants can be found anywhere in New Mexico at elevations of 3,000–7,000 ft.

TOXIC PRINCIPLES

The poisonous agents in groundsel are pyrrolizidine alkaloids, which primarily affect the animal's liver and the nervous system. Toxic agents are distributed throughout the plant, but flowers and younger plant tissue appear to be more toxic than older tissue. Toxins are present in fresh, dry, and dead plant material.

Numerous types of alkaloids occur in plants, and each must be treated separately. There are no antidotes for poisoning. Once symptoms appear, it is often too late to save the animal.

SYMPTOMS

Toxicity is cumulative, and the animal may not show symptoms for several months after eating the plant. Affected animals may have a rough coat and dry, scaly nose, and will frequently void small amounts of liquid, bile-stained feces after painful straining.

Poisoned animals usually walk constantly with a slight stagger and have a fixed, staring expression. They appear to wander aimlessly. The head will droop, and the animal may walk into other animals, fences, or buildings. Death is sometimes caused by exhaustion or injury. Affected animals may attack any moving object.

Other symptoms of groundsel poisoning are jaundiced mucosal tissues, an accumulation of up to several gallons of clear liquid in the peritoneal cavity, hardening and cirrhosis of the liver, and distention of the gall bladder, often to an enormous size. Death may occur within two to four days after the onset of symptoms. Lesions may progress, resulting in losses over several months. Further intake of plants must be avoided.

MANAGEMENT AND PREVENTION

Because it is unpalatable, groundsel is usually not a serious problem except during extended drought, on severely overgrazed areas, or at times when forage is extremely limited. Threadleaf groundsel is likely of greater concern because it remains green year-round. Supplemental feeding on forage-depleted areas may prevent some losses.

Sheep and goats are less susceptible than cattle. Intake of large quantities of groundsel is required to poison sheep and goats, and poisoning occurs infrequently on the range.

CONTROL

Threadleaf groundsel is highly susceptible to the herbicides listed in Table 1, and good kill has been obtained when the treated plants are growing vigorously with good soil moisture. Spraying is effective from April through June with ground or aerial equipment. Satisfactory control of Riddell's groundsel has been obtained by spraying during late summer and fall after effective rainfall.

High priority should be given to rangeland where groundsel numbers are high and where desirable forage can be reestablished after control. Removing groundsel makes soil moisture and nutrients available to desirable forage, and reduces the potential for livestock poisoning. Sparse groundsel stands are most economically treated with a knapsack or power sprayer. Herbicide-treated areas should be deferred from grazing for the remainder of the growing season to prevent further poisoning.

Pelleted formulations of soil-active herbicides that include tebuthiuron (Spike 20P) effectively control groundsel when applied at 1 Tbsp per plant. Application timing is less restrictive with pelleted herbicides than with foliar sprays, and risk of herbicidal drift to susceptible crops is eliminated. Pelleted herbicides are most effective when applied in summer before peak rainfall.

Table 1. Herbicides Currently Labeled for Groundsel Control on Rangeland

Common name	Trade name	Rate	Time of application
Dicamba	Banvel	0.5 lb/ac	When plants are growing vigorously and before seeds mature.
Dicamba + 2,4-D	Weedmaster	1.0 lb/ac	
Aminopyralid + 2,4-D	Grazon Next	2–2.6 pt/ac	
Picloram	Tordon 22K	1.0 lb/ac	
Picloram + 2,4-D	Grazon P+D	1.0 lb/ac	
2,4-D	Esteron 99 and others	1.0 lb/ac	Prior to rainfall
Tebuthiuron	Spike 20P	1 Tbsp/plant	

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