

# Rayless Goldenrod and Livestock Poisonings

Revised by Casey Spackman<sup>1</sup>

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Rayless goldenrod, also called jimmyweed, is a native, perennial, multi-stemmed plant that is toxic to cattle, sheep, horses, and goats. Poisoning is most common in late fall and winter.

## DESCRIPTION

Rayless goldenrod is a deciduous half-shrub with several upright branches growing from a stout, woody root crown. Stems will be from 2–4 ft tall. New stem growth is gray to white, hairless, and shiny. Older stems are alternate, simple, narrow (1/2 in.), about 2 inches long, and sticky. Leaves are usually hairless, but may have short, stiff hairs on the margins, or may be slightly toothed.



Yellow flowers appear in clusters on stem tips from August to October. The plant dies back to ground level each winter, and regrowth starts from the root crown beginning early the following spring. The plant is most abundant on alkali or gypsum soils. It also grows especially well in river valleys and along drainage areas in eastern New Mexico.

## TOXIC PRINCIPLES

The poisonous substance in rayless goldenrod is tremetol, an alcohol that is present throughout the plant in both green and dry material. Tremetol is toxic to all livestock, and produces a condition known as “trembles.” Young animals and humans can be poisoned by drinking milk from animals that have been feeding on rayless goldenrod. Daily consumption of only 1–1.5% of an animal’s body weight of green or dried plant material, for a week or more, usually will produce poisoning symptoms or death. Rayless goldenrod can cause livestock losses throughout the year, but most losses occur in late fall through early spring.

## SYMPTOMS

Symptoms include trembling of the muscles in the nose, legs, and shoulders, especially after exercise, and are common in affected animals. As the condition worsens, the whole body may shake. Animals stand humped up



<sup>1</sup>Extension Range Management Specialist, Department of Extension Animal Sciences and Natural Resources, New Mexico State University.

and move with a stiff gait, especially in the forelegs. Affected animals are lethargic and inactive, and show signs of depression. Constipation, vomiting, quickened and labored breathing, and almost constant dribbling of urine are also common symptoms. Affected animals will die if not removed from access to the plant. Purgatives, stimulants, and laxative food will improve the chance of recovery. Drugs should be administered by stomach tube or injection because some animals experience throat paralysis. Consult a veterinarian as soon as possible.

### MANAGEMENT AND CONTROL

Because of its unpalatability, rayless goldenrod is usually not eaten by livestock, except during or immediately following snow or ice storms, during extreme drought, or on severely overgrazed areas. Supplemental feeding on areas where good forage has been depleted, and fencing of infested areas to prevent fall and winter grazing, are management practices that will prevent some losses. Rayless goldenrod is susceptible to the herbicides listed in Table 1, and good kill is possible when the plants are treated at the right time.

Picloram is applied as a foliar spray, and is effective after the plants have bloomed but before frost. Spraying can be done with ground or aerial equipment. Sparse stands of rayless goldenrod can be economically treated with a knapsack or power sprayer.

The pelleted formulation of the soil-active herbicide tebuthiuron (Spike 20P) effectively controls rayless goldenrod when applied at 1/2 oz per plant. Timing of application is more flexible with pelleted herbicides than with foliar sprays, and the risk of herbicide drift to susceptible crops is reduced. Pelleted herbicides are most effective when applied in summer or early fall before peak rainfall. High priority should be given to rangeland where rayless goldenrod plant numbers are high, and where desirable forage can be reestablished after control. Removing the goldenrod makes soil moisture and nutrients available to desirable forage plants, and reduces the potential for livestock poisoning.

**Table 1. Herbicides Currently Labeled (1989) for Rayless Goldenrod on Rangeland**

Common name	Trade name	Broadcast/individual plant	Time of application
Picloram	Tordon 22K	0.5 lb/acre	Fall, after bloom and before frost
		1%	Spray to wet; fall, after bloom and before frost
Tebuthiuron	Spike 20P	1.0 lb/acre	Summer, before rainfall
		1/2 oz/plant	Summer, before rainfall

*The pesticide recommendations in this publication are provided only as a guide. The authors and New Mexico State University assume no liability resulting from their use. Please be aware that pesticide labels and registration can change at any time; by law, it is the applicator's responsibility to use pesticides ONLY according to the directions on the current label. Use pesticides selectively and carefully and follow recommended procedures for the safe storage and disposal of surplus pesticides and containers.*

**Original author:** Keith W. Duncan, Extension Brush and Weed Specialist.



*Casey Spackman is an Assistant Professor and Extension Range Management Specialist at New Mexico State University. He earned his Ph.D. at Utah State University. His Extension efforts aim to assist producers, land managers, and agency personnel in monitoring and developing management objectives that maintain or improve natural resource health and sustainability.*

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