

Honey mesquite (*Prosopis glandulosa* Torr.) is a shrub or small tree 3 to 12 feet tall. Mesquite has always been a part of the plant community in New Mexico, but was historically confined primarily to water courses and other moist sites. The introduction of domestic livestock, increased control of wildfire, and droughts all gave woody plants a competitive advantage and resulted in changes in rangeland plant composition.

Efforts to control mesquite will not produce lasting results without a commitment to sound grazing management. If overgrazing occurs, mesquite or other undesirable vegetation will return to dominate the site.

When selecting a mesquite control method, consider the presence of other undesirable plants. Removal of one species can result in the rapid increase of another. As a result, soil moisture does not become available for desirable species. Follow-up treatments on the other undesirable plants may be necessary after mesquite control.

INDIVIDUAL PLANT TREATMENTS

Individual plant treatments do not usually result in substantial increases in forage production. Individual treatments are used as a follow-up measure after other mesquite control efforts or as a preventive method. Individual plant treatments are recommended for areas such as fence rows, around watering facilities, or in areas of sparsely distributed plants with fewer than 100 plants per acre (or less than 5% canopy cover per acre).

FOLIAR SPRAYS

Foliar sprays on individual mesquite work best on plants that are bushy, have many stems at ground level, and are less than 8 feet tall. Spraying should begin near mid-June when mesquite leaves change color from a light green to a uniform dark green. Spraying may continue throughout the summer until seed pods have fully matured. Spray the foliage of each mesquite plant until the leaves glisten but not to the point of dripping.

Equipment

Pump-up garden sprayers, backpack sprayers, cattle sprayers, truck-mounted sprayers, or sprayers mounted on four-wheel all-terrain vehicles (ATV) work well. Backpack sprayers are



Photo courtesy of Chris Allison. (Used with permission).

most efficient in dense mesquite, while ATV sprayers are more efficient on large acreages or as the distance between plants increases. It is desirable to have a sprayer with an adjustable nozzle capable of delivering a coarse spray of large droplets to the top of an 8-foot tree.

Herbicide Mixtures

A 75 to 100% rootkill of mesquite can be achieved by spraying with a mixture of triclopyr (Remedy) and clopyralid (Reclaim). Prepare the spray mix by adding triclopyr and clopyralid at concentrations of 0.5% each to water (Table 1).

To ensure thorough coverage of the foliage, add either a liquid dishwashing detergent, a surfactant, or diesel to the spray. If diesel is used, add an emulsifier such as Triton X-100 to make the diesel and water mix. It is helpful to add an agricultural dye to mark plants that have been sprayed.

For best results, always follow label directions. Don't spray when rains have stimulated light green, new growth in tree tops or when foliage shows damage due to hail, insects, or disease. Spray foliage to wet but not dripping. Do not spray in the vicinity of desirable trees, shrubs, or crops.

The cost of treatment varies according to the density and size of mesquite infestations. Periodic follow-up treatments will be necessary to maintain low mesquite populations.

¹Respectively, Retired Extension Brush and Weed Specialist and Professor, Agricultural Science Center at Artesia; and Retired Range Management Specialist and Professor, Department of Extension Animal Sciences and Natural Resources, New Mexico State University.

Table 1. Recommended Spray Mixtures for Foliar Spraying Individual Mesquite Plants				
Ingredient	Concentration in spray solution	Tank size		
		3 gal	14 gal	25 gal
Triclopyr	0.5%	2 oz	9 oz	16 oz
Clopyralid	0.5%	2 oz	9 oz	16 oz
Surfactant	0.25%	1 oz	5 oz	8 oz
Diesel	5%	19 oz	3 qt	5 qt
Emulsifier	1 oz/gal diesel	0.17 oz	0.75 oz	1.25 oz
Dye	0.25–0.5%	1–2 oz	5–9 oz	8–16 oz

STEM SPRAYS

Stem sprays on individual mesquite work best on relatively young mesquite trees that have smooth bark and few basal stems. Only stems less than 4 inches in diameter should be sprayed. Spraying may be done any time during the year, although best results occur during the spring–summer growing season.

Equipment

Pump-up garden sprayers or backpack sprayers are the most efficient for mesquite stem spraying. Use sprayers with a small-orifice nozzle, which sprays a fine mist onto the mesquite stems.

Herbicide Mixtures

A mixture of triclopyr and diesel is very effective for stem spraying. Diesel ensures a good coverage and helps increase herbicide absorption. The recommended concentration of triclopyr will vary according to the size and age of the mesquite (Table 2). Pour the required quantity of herbicide into the mixing container, then add enough diesel to bring the mixture to the desired volume.

For best results, adjust the sprayer nozzle to deliver a narrow, cone-shaped mist. Spray the mixture lightly but evenly on the stems up to 12–18 inches from the ground. Apply the mixture to all sides of the stems, but not enough to cause run-off. Rough-bark mesquite are more difficult to control than smooth-bark plants. Do not spray when basal stems are wet.

Always follow label directions. After mixing herbicide with diesel, shake or agitate the solution vigorously.

Table 2. Recommended Concentration of Triclopyr to Mix With Diesel for Stem Spraying		
Mesquite type	% Triclopyr	Amount/gal
Smooth bark		
≤1.5 in. diameter	15%	19 oz
1.5–4 in. diameter	25%	1 qt
Rough bark	25%	1 qt

SOIL-APPLIED TREATMENTS

The soil-applied herbicide hexazinone (Velpar L) is very effective for controlling any size mesquite at any time of the year.

Apply hexazinone with a spot gun, drench gun, or any exact delivery applicator. Apply undiluted hexazinone to the soil surface under the mesquite canopy at a rate of 3 ml (cc) per 3 feet of canopy diameter at the widest point. When treating “duney” mesquite or clumps of mesquite where individual plants are difficult to distinguish, apply hexazinone in a 3-foot grid pattern throughout the plant area.

Hexazinone may be diluted with water at a 1:1 ratio. Apply sufficient mixture to give a hexazinone rate of 3 ml (cc) per 3 foot of canopy diameter.

Precipitation is required to move hexazinone into the soil profile for root uptake. Final results may not be realized for 2–3 years from application date. Mesquite will defoliate and relapse several times before final mortality.

For more information about controlling mesquite and other brush and weed species, contact your county Extension agent (<http://aces.nmsu.edu/county>).

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