



HOW TO BEAT MESQUITE: Individual Plant Treatment Leaf and Stem Applications

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The mesquite tree is one of the toughest, most noxious brush species on Texas rangelands. It thrives across the western two thirds of the state, both in rural pastures and on urban lots.

Here are two three-step methods to control mesquite; both are easy, inexpensive, and environmentally responsible. They involve spraying a small but potent concentration of herbicide directly on each plant to selectively control unwanted mesquite. Remember, controlling mesquite is not a one-time job. Both livestock and wildlife spread seeds, so monitor your land regularly to control unwanted seedlings.

These Brush Busters control methods were developed and approved by professionals with Texas A&M AgriLife Extension Service and Texas A&M AgriLife Research, both agencies of the Texas A&M University System. Your results may vary with weather and other plant conditions, but you should usually be able to kill 76 to 100 percent of the trees you treat.

These Brush Busters control methods depend on the tree shape and size. For mesquite with three or fewer smooth bark stems coming out of the ground, the stem spray method may be a good option. For bushy mesquite less than 6 feet tall with many stems at ground level, the leaf spray method may be the best option. Either method can be successful.



Honey Mesquite leaves and beans. *Courtesy of: TREES, SHRUBS AND WOODY VINES OF THE SOUTHWEST by Robert A. Vines, Illustrated by Sarah Kahlden Arendale, Copyright ©1960*

BRUSH BUSTERS LEAF SPRAY METHOD

Works well on: Mesquite plants that have good leaf canopy and are less than 6 feet tall. This method is also known as high-volume foliar spraying.

When to apply: Begin in spring, when mesquite leaves change color from light pea-green to a uniform dark-green; continue through July 31st for East and South Texas, while other parts of the state may be able to spray through September. If mesquite has been top killed by fire, hand cutting, herbicide methods, or any mechanical methods, allow two full growing seasons before using the Brush Busters leaf spray method.

1. Prepare the Equipment

Many types of sprayers work well for this method. Backpack sprayers are the most efficient for small acreage places or those with a high density of mesquite trees. Larger places with lower densities may find ATV or UTV sprayers more efficient. Before you start spraying, make sure that you have an adjustable cone nozzle, such as the Conejet™ 5500-X6 or X8 nozzle that can deliver a coarse spray with larger droplets to the top of a 6-foot tree.

2. Mix the Herbicide Spray

You can achieve 76 to 100 percent mortality by spraying with one of several herbicide options (see options A, B, or C in the table on the next page) under ideal conditions. To prepare the spray mix, add the selected herbicide to water. To make sure the foliage is coated thoroughly, add a high-quality (80 to 90 percent active ingredient) non-ionic surfactant (see table on the next page) to the spray mix or crop oil, methylated seed oil (MSO), or MSO-OS (organosilicone) adjuvant at manufacturer specified rates. Add a dye, such as Hi-Light™ blue dye, to mark plants that have been sprayed and ensure proper coverage.

3. Spray the Mesquite

Adjust the nozzle to deliver a coarse spray in a wide pattern. Wet ALL the leaves of each mesquite plant until the leaves glisten but not to the point of dripping.

Keep These Points in Mind:

- ▶ Follow herbicide label directions.
- ▶ For best results, do not spray when:
 - Rains have stimulated new growth at the end of the stems
 - Leaves are wet from rain or dew
 - Foliage shows damage from hail, insects, or disease
 - Working upwind of desirable trees, shrubs, or crops
- ▶ The cost of treatment rises rapidly as the brush becomes bigger and denser. Download the Brush Busters Cost Calculator app to easily estimate treatment costs.
- ▶ Controlling mesquite is not a one-time job. You will need to monitor your land every year to check for new plants.



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RECOMMENDED LEAF SPRAY HERBICIDE MIX OPTIONS*

	Ingredient	Concentration in Spray Solution	Tank Size			
			1 gal	3 gal	14 gal	25 gal
Option A	Sendero	1%	1.28 oz	4 oz	18 oz	32 oz
Option B**	Invora**	1.5%	1.92 oz	5.76 oz	27 oz	48 oz
Option C	Remedy Ultra, Clear Pasture, Triclopyr R&P and Triclopyr 4EC	0.5%	0.64 oz	2 oz	9 oz	16 oz
	Pyramid R&P and Clopyralid 3	0.5%	0.64 oz	2 oz	9 oz	16 oz
Add to option A, B, and C	Surfactant	1/4%	0.32 oz	1 oz	4.5 oz	8 oz
	Hi-Light™ blue dye	1/4-1/2%	0.32-0.64 oz	1-2 oz	4.5-9 oz	8-16 oz

*All leaf spray solutions are mixed in water.

**Invora is labeled for privately owned rangelands only (excludes hay fields) and requires Picolinic Acid Chemistry Training for all applicators.

BRUSH BUSTERS STEM SPRAY METHOD

Works well: For controlling young seedlings or older trees with three or fewer basal stems. Multi-stemmed mesquite plants are much more difficult to control than younger trees or undisturbed plants.

Research and demonstrations have shown excellent results while using minimum amounts of herbicide.

When to apply: Anytime during the year, although the best results occur during the growing season. The Invora mixture (option B) is best applied late spring through summer.

1. Prepare the Equipment

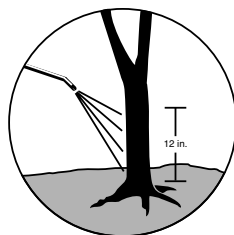
Almost any type of pump-up hand sprayer can be used, but the most efficient way to apply the stem spray to many trees is with a backpack sprayer.

Make sure the sprayer's nozzle has a small orifice. One such nozzle is the Conejet™ 5500-X1 (or X2). Compared to standard nozzles, this nozzle can reduce the amount of spray applied by 80 percent, making the use of chemicals much more cost-effective.

2. Mix the Herbicide Spray

For spraying mesquite stems, there are two mixture options.

For triclopyr ester applications (option A), pour the required amount of herbicide (trade names: Remedy Ultra, Clear Pasture, Triclopyr R&P, and Triclopyr 4EC) into the mixing container (concentration depends on mesquite stem diameter and bark roughness), and then bring to the desired total volume by addition of diesel fuel or basal bark oil, which act as coating agents to ensure good absorption. Shake vigorously to ensure thorough mixing.



For Invora stem applications (option B), fill the mixing container half full of water. Add Invora, a methylated seed oil organo-silicone (MSO-OS; 1 percent) adjuvant, and Hi-Light™ blue dye (0.25 to 0.5 percent). Then add water to the desired volume and mix well.

RECOMMENDED STEM SPRAY HERBICIDE MIXES

	Mesquite Type and Stem Diameter	Herbicide	Herbicide/ Gallon	Herbicide Carrier/Gallon
Option A	Smooth bark 1.5 in or less	Triclopyr ester, 15%	19 oz	109 oz diesel or basal bark oil
	Smooth bark 1.5 to 4 in	Triclopyr ester, 25%	32 oz	96 oz diesel or basal bark oil
	Rough bark	Triclopyr ester, 25%	32 oz	96 oz diesel or basal bark oil
Add to option A	Hi-Light™ blue dye (optional)		0.32-0.64 oz	
Option B*	Smooth bark 4 in or less	Invora*, 15%	19 oz	109 oz water
Add to option B	MSO-OS Adjuvant		1.28 oz	
	Hi-Light™ blue dye		0.32-0.64 oz	

*Invora is labeled for privately owned rangelands only (excludes hay fields) and requires Picolinic Acid Chemistry Training for all applicators.

3. Spray the Mesquite

Adjust the sprayer nozzle to deliver a narrow, cone-shaped mist. Spray the mixture lightly but evenly on all the plant stems from the ground line up to 12 inches. Apply the mixture to all sides of every stem, but do not wet it so much that it runs off the stem and puddles.

Keep These Points in Mind:

- ▶ Follow all label directions.
- ▶ The cost of treatment increases as plant density and the number of stems per plant increases. Download the Brush Busters Cost Calculator app to easily estimate treatment costs.
- ▶ Rough-bark mesquites (usually older trees) are much harder to kill than smooth-bark mesquites.
- ▶ Multi-stemmed plants are more difficult to control with this method. It is best to use this on plants with three or fewer stems.
- ▶ Do not spray when the basal stems are wet.
- ▶ Dense grass around basal stems makes this method more difficult to apply.
- ▶ With triclopyr ester, use herbicides that contain 4 pounds per gallon of triclopyr acid equivalent (ae).