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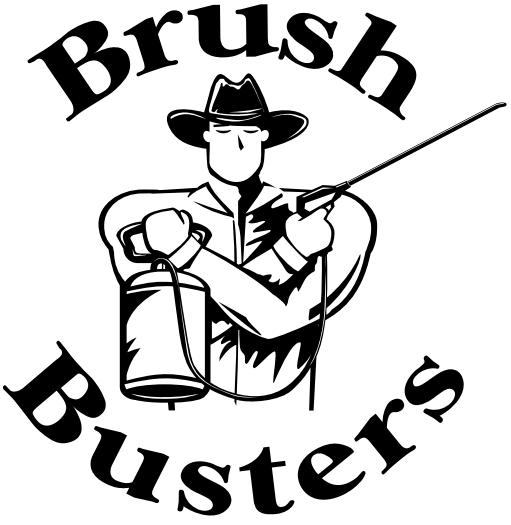

How to Estimate Costs for Controlling Pricklypear

A simple way to estimate the density of pricklypear on your rangeland or pastures and the cost for control.

Individual Plant Treatment Series

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A simple, three-step method for effectively controlling pricklypear and other cacti is described in L-5171, "Brush Busters: How to Take Care of Pricklypear" (Texas Agricultural Extension Service.) This method controls low densities of plants before they mature, thicken and require expensive broadcast chemical control methods. Brush Busters recommends only "select" treatments, which normally kill at least 7 out of 10 plants treated. The Brush Busters methods allow you to selectively eliminate the plants you don't want, and to leave those you value. Brush Busters methods often are less expensive than broadcast chemical control methods.

By following the simple directions that follow, you'll be able to determine the density (abundance) of pricklypear and then estimate the cost of controlling these plants with the Brush Busters pad or stem spray method. Your actual costs may vary considerably from the estimate you develop using this brochure, depending upon the size of your plants, the efficiency of your workers, and the type of equipment used. Costs given for spray ingredients are 1998 retail prices. Labor is estimated at $6 or $12 per hour. The cost data were collected on rangeland in west central Texas infested with the low-growing types of pricklypear that rarely exceed 2 feet in height. Therefore, the cost data will likely underestimate actual cost for controlling the taller and larger colonies of pricklypear common in south Texas.

Step 1. Estimate pricklypear density (number of plants per acre).

- Select a representative area in your pasture. Pick a landmark on the horizon or some object in the pasture and walk 363 feet (this is about 121 big steps) toward that landmark or object. Stop. (If large brush prevents seeing 363 feet or walking in a straight line, see the Note below).
- Turn around and slowly return along a straight line to your starting point. As you proceed, count every pricklypear rooted within 3 feet of your path (about an arm's length on both your right and left sides).
- To calculate the number of pricklypear per acre, multiply the number of pricklypear counted along the line by 20. For example, if you counted eight plants, then the density is 160 plants per acre (8 x 20).
- Repeat this procedure in at least three more representative areas.
- Total the samples, then divide by the number of samples to calculate an average plant density for your pasture. This average will be the "plants/acre" value you will use in Step #2. Example: If you had four estimates of 160, 100, 60 and 80 plants per acre, then your average plant density is 100 plants per acre (160+100+60+80 = 400; 400÷4 = 100).

Note: An alternative method is to mark off a square area 66 feet (about 22 big steps) on a side. Count the number of pricklypear plants rooted in this area, then multiply the number by 10 to calculate the number of pricklypear per acre. Repeat this procedure in at least three more representative areas, then calculate the average pricklypear density for your pasture.

Step 2. Use the graphs to estimate cost per acre.

- Find the graph in Figure 1 that is best for your situation. The upper graph shows the cost for the spray only. The center graph shows total cost for spray plus labor at $6 per hour. The bottom graph shows total cost for spray plus labor at $12 per hour.
- Locate your average plant density (the average calculated in Step #1) on the lower, horizontal axis (density axis) of the appropriate graph. Draw an imaginary line straight up from your average plant density to the center of the bold sloping line.
- From the point at which the imaginary vertical line intersects the bold sloping line, draw an imaginary, horizontal line to the vertical axis (cost axis) on the left of the graph. Make a mark on the cost axis. This point is an estimate of what your cost per acre should be in $/acre. Example: If you have an average of 100 pricklypear plants per acre, and your labor cost is $6 per hour, then the estimated cost of treatment is about $7.50 per acre (Fig. 1, middle graph.)

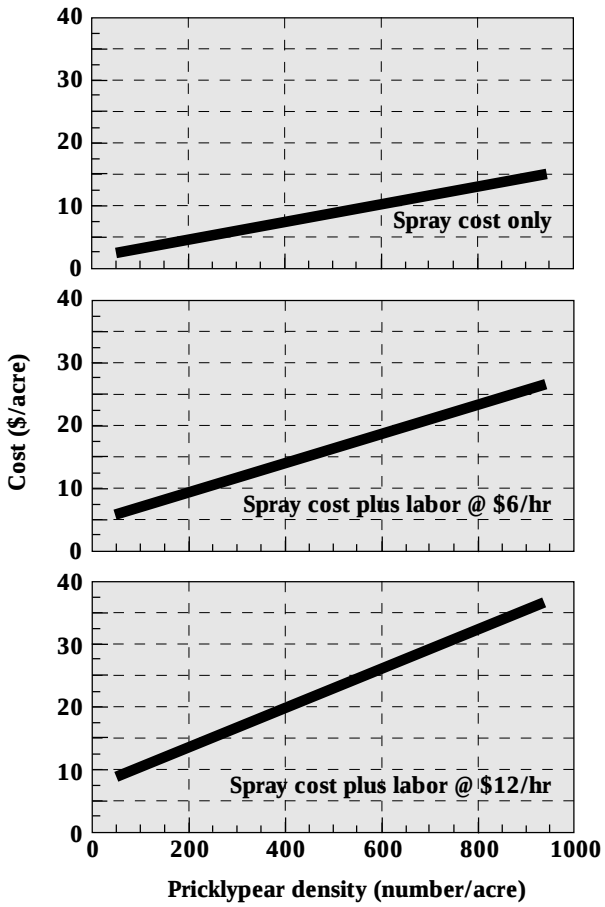

Figure 1. Costs for controlling various densities of pricklypear with the Brush Busters pad or stem spray method.

Keep these points in mind:

- If the estimated cost exceeds $25 to $30 per acre, you may wish to consider alternative cacti control treatments, such as broadcast herbicide application, prescribed fire, or a combination of fire plus broadcast herbicide applications if the acreage and location of your infestation will permit the use of these practices.
- Plant size is a major factor affecting the cost of using Brush Busters methods. Costs escalate rapidly as plant size increases.
- Costs can escalate rapidly if you apply excessive amounts of the pad or stem spray using excessive pressure or nozzles with large orifices.
- Labor is usually a major component of total cost with Brush Busters methods. Costs escalate rapidly as hourly labor cost increases and when workers are inefficient in the use of their time.
- Follow directions in L-5171, "Brush Busters: How to Take Care of Pricklypear," very carefully.
- Pricklypear control must be used in conjunction with proper stocking rate and livestock grazing management to realize the benefits of increased forage and livestock production.

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