

University of Missouri Extension

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Freeze Branding Cattle

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Freeze branding as a method of livestock identification has been received with enthusiasm. When super-cold or chilled branding irons are applied to the hide of the animal, the pigment-producing cells are destroyed or altered. When the hair grows back, it is white. The method is not foolproof, and those using it should be aware that the results may be variable. The major advantages claimed for freeze branding are:

- The brand is more legible throughout most of the year than a hot-iron brand
- Freeze branding causes less damage to the hide than a hot brand.

Equipment needed

Branding irons

Branding irons should be heavy copper or bronze with slightly rounded faces. They should be 3- to 4-inch irons, 3/8- to 1/2-inch thick and at least 1 inch deep.

Refrigerant

Dry ice is most commonly used as the refrigerant. If the branding does not take too long, 15 pounds of dry ice will be sufficient for a small herd of cattle. If the branding will not be done immediately or if the dry ice must be transported a distance, it is wise to buy more. Break part of the dry ice into very small pieces for rapid cooling; keep some larger pieces for sustained cooling. Don't handle the dry ice with bare hands as freeze burn might result. The solution most commonly used with the refrigerant is 95 percent alcohol. A less pure alcohol will not remain liquid when placed with dry ice. Either methyl, isopropyl or ethyl alcohol is satisfactory. Acetone and gasoline are good refrigerants, but they should not be used because of the danger of explosion if used around open flames. Enough solution should be available to cover the dry ice and the irons by at least 1 inch.

Clippers

Clip cattle hair closely before branding. The cutters and combs should be sharp, with extra blades available to replace dull or damaged ones.

Container for coolant

The container should be insulated to keep the solution as cold as possible. Use two metal containers, one set inside the other with an insulating

compound between, or a bucket wrapped in insulation. Styrofoam coolers are excellent, but should be set inside another container because they are fragile and easily broken. Select a container large enough to accommodate all the irons needed.

Brush and plastic squirt bottle

A stiff bristle brush is handy for brushing away loose hair and removing skin scurf after the animal has been clipped. A plastic squirt bottle, such as a container for liquid soap, works quite well for applying alcohol to the site of the brand just before applying the branding irons.

Restraining equipment

The animal must be securely restrained in a squeeze chute or headgate. Calves may be thrown on the ground on their sides.

Chilling the irons

When dry ice is added to the refrigerant solution, it will bubble profusely. As the solution is cooled, it will reach a steady rate of bubbling. The solution will be cooled to its minimum temperature in about five minutes. It will take about 10 minutes for the irons to reach minimum temperature when they are first immersed. After the irons have been used in branding, they should be put back in the solution immediately if they are to be used again. It will take approximately 4-5 minutes for them to reach minimum temperature again. When the used iron is put back into the solution, more bubbles will tend to appear. When the iron has reached the minimum temperature, the bubbling will slow to a constant rate.

Step-by-step branding

- When the animal is restrained, clip the area where you want the brand. After clipping, brush away loose hair and any scurf that is on the skin.
- Immediately before branding, apply alcohol that is at air temperature to the site of the brand. Some people feel that a solution made of 1/3 glycerine and 2/3 alcohol works better.
- Immediately after you have applied the alcohol solution, apply the branding iron to the hide. Firm pressure is required to make good contact with the skin. Hold the iron in place for approximately 40 seconds when branding mature animals.

More than one branding iron can be used at the same time. However, one person should handle each branding iron to be sure uniform pressure is applied. Branding in fall and winter usually requires a longer application than in the spring. Satisfactory brands have been noted on calves that were branded for 30 seconds. Overbranding will completely kill the hair follicles and will appear to be a hot-iron brand. Observations indicate that Herefords seem to need a longer application of the branding iron than Angus. An unclear brand when the hair grows back is an indication that the animal was underbranded. If there is prominent loss of hair, the animal was overbranded. If there is hair loss or no whiteness or hair at the top or bottom of the brand, there was not uniform pressure in the application of the iron.

Freeze branding hogs

A satisfactory method of freeze branding hogs has not been found to date. This may be partially due to the fact that the hair follicle in a hog is

surrounded by a fat globule, and it is more difficult to secure the necessary coldness at the hair follicle to alter the pigment-producing cells.

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