



Beef: Individual Identification of Cattle

Cattle are identified primarily for two purposes: (1) to provide positive identity for recording performance and/or family relationships; and (2) to serve as a means of establishing legal title. To fulfill the first purpose, each animal in a herd must have a unique identity; that is, it's identification must in some way be unlike the identity of all other animals within a herd. On the other hand, ownership identity is established when each animal belonging to an individual or firm bears the same mark of identification.

To establish identity for record purposes, numbers, letters or a combination are assigned to individual animals. While individual identity is helpful in establishing ownership, it is inconclusive since many animals in different herds can bear the same number or letter identity. Furthermore, brand laws usually exclude the use of letters or numbers as legal ownership marks.

A system of identification should be developed for each herd by the owner who desires a complete record keeping system.

The identification system should provide for the following:

- (1) Unique and positive identity for each individual.
- (2) As much information about the individual as possible at a glance. For example, Calf No. 11 could mean that this was the first calf born in 1971 while 192 would mean that this was the 19th calf born in 1972. Also, cow No. 1072 could mean that she was the first cross, 1072, in an upgrading system and was the 1072 calf born in 1972. This system has been used in herds upgrading to purebred and works well for fewer than 100 cows.
- (3) Easy recognition.

Methods of Identification

Some of the commonly used methods for individual identification are discussed below.

1. **Tattoo:** An ear tattoo is required for the registration of most purebred animals. Tattoos are permanent and simple to apply by the experienced herdsman. However, the main disadvantage of tattoos is that the animal must be caught and restrained in order to identify it.

Good tattoos can be achieved if the following steps are followed:

- (1) Clean all wax and dirt from the area of the ear to be tattooed.
- (2) Set tattoo pliers to desired numerals. Check by tattooing a piece of cardboard tattooing the ear.
- (3) Firmly clamp the ear with the tattoo pliers.
- (4) Rub the tattoo punctures full of ink until the bleeding ceases.

A few tricks by experienced cattlemen to obtain legible tattoos are:

- (1) "You won't have a good tattoo unless your thumb is covered with ink." However, some successful tattoos have been made with roll-on bottles or old toothbrushes.
- (2) "Avoid the ribs in the ear."
- (3) "New tattoo numerals or letters may be too sharp to make a sufficient opening to allow an adequate supply of ink to get under the skin." Therefore, some cattlemen recommend "dubbing" the new figures with a file.

2. **Neck Chains or Ropes:** Neck chains or ropes are rapidly becoming an antiquated method of identification. This method has served well up to the time of improved techniques because neck chains are easy to install and allow for identification without restraining the animal. Neck chains are reasonably permanent if the chain is kept properly adjusted and worn links are replaced regularly. But, some problems are associated with the use of neck chains for individual identification of cattle. Chains must be adjusted frequently on growing animals and the incidence of death by strangulation due to the entanglement of the chain is not uncommon. In order to be completely safe, neck chains should be equipped with "weak links" or "spring type links" that will allow the chain to give under extreme pressure. But if this is done, neck chains become to a degree, temporary identification.

3. **Identification tags:** Tags, generally made of plastic or light metal have been used many years as a temporary means of individual identification. Up until recent years, the most permanent ear tags were small and

when placed snugly in the ears were somewhat free of snagging. Tag manufacturers have discovered that a principal of successful identification with tags is flexibility. Manufacturers of large, easily visible tags have used a flexible, almost rubber-like plastic or recommended that the tag be installed in flexible areas, such as near the end of the ear, in the loose skin of the dewlap, or the flank, rather than in the ear close to the head. Tags that have been most successful are free-swinging, flexible, and are free of corners or projections that allow them to become caught in fences, brush and equipment.

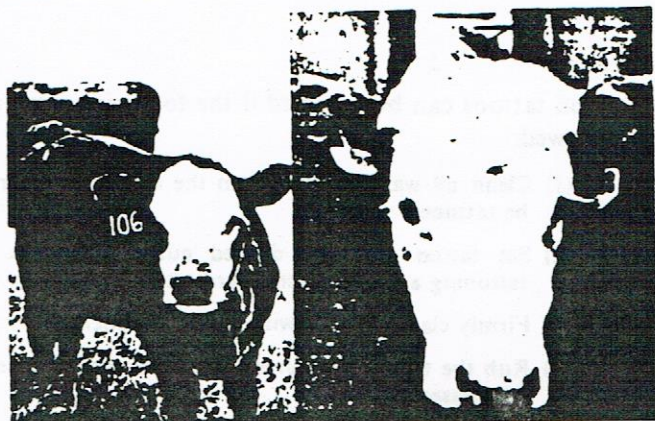


Fig. 1: Ear Tagging is a convenient method of identification

The most common place for installation of tags is in the ear. However, some producers have been satisfied with the permanency of brisket tags. Brisket tags have the disadvantage of being difficult to read when cattle are in a squeeze chute or grouped in a pen.

Application of numbers and figures to the tags is important. Most tags can be purchased prenumbered, in which case figures are embossed or bonded to the tags' surface. Many producers prefer to number their own tags, however. If this is done, an ink or paint that bonds with the tag material is preferred. If a non-bonding ink is used, tags should be numbered well in advance of their installation and then renumbered to insure permanency of the identification figure.

Different color tags and/or ink can be used to designate sire, herd, year or month of birth. A combination of up to four digits is easy to read and allows numbering of 999 calves per year with a year digit included.

4. Branding

- A. *Fire Branding* of the hide with hot irons is one of the oldest and most permanent techniques of establishing legal title to cattle. Also, the technique can be used for individual identification if numerals or letters are used. Fire branding is permanent and provides a mark that can be easily recognized at fairly great distances. The disadvantages of this technique are: (1) a certain degree of experience is required to make legible brands, (2) brands must be clipped in the winter to allow complete legibility, (3) there is damage to the skin that is objectionable to the tanning industry and (4) the technique is considered inhumane by some people.



Figure 2: A good fire brand

A few clues to good fire brands are:

- (1) Use a properly heated iron. The iron is properly heated when it looks silvery-grey in the daylight but glows a cherry-red color when held at the bottom of a 5-gallon bucket. An iron that is too hot easily burns through the skin, while a cool iron requires an extended time of application which increases the chance of blotching by movement of the animal.
- (2) Restraining the animal is absolutely necessary.
- (3) Irons must be properly constructed. A face width of approximately 1 4 - 1 2 inch is preferred and circles or corners should be vented to prevent excessive scarring (see Figure 3 below):

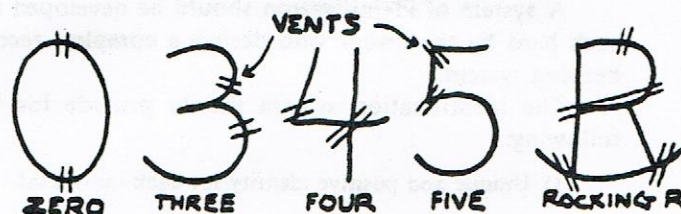


Fig. 3: Branding irons should be vented to prevent excessive scarring.

- (4) Brand only dry cattle. Branding wet cattle results in scalding and excessive scarring.
- (5) Brand when flies are not a problem. Use insecticide on brand if necessary to brand during fly time.

Brands should be 3-4 inches high. Hot iron handles should be 2-1/2 to 3 feet long.

Techniques for Fire Branding:

- (1) Restrain animal
- (2) Heat iron as described above
- (3) Select site to be branded. Shoulder, neck and thigh marks have all been used but just behind the shoulder on the rib cage of the hip are the preferred sites for identification numbers. The jaw is reserved by health authorities as a site for identifying diseased animals.

- (4) Clip heavy hair coats on site to be branded (This is necessary only when hair coats are extremely heavy or dirty.)
 - (5) Hold the hot iron (firmly) on the hide until the branded area is a rich tan in color or looks like new leather.
 - (6) Brands will probably need to be clipped annually to insure legibility.
 - (7) Smaller, specially designed irons can be used for fire branding the horn on horned cattle.
- B. *Freeze Branding* of cattle with super-chilled irons (also called cryogenic branding) has been developed in recent years with the exception of producing hide marks that are more humane and more easily read than fire brands. Also, it was hoped that freeze brands would not have to be clipped, since the hair of the branded area would be discolored or white due to damage by the extreme cold to the melanocytes (color producing cells) of the hair.



Figure 4: Freeze branding

Freeze branding has not fulfilled all of the early expectations for the technique, even though some people have been satisfied with it. Generally, the greatest disappointments have been: (1) brands still needed to be clipped in the winter for complete legibility, (2) the process is relatively expensive on small numbers of cattle, (3) the visibility of the brand is not as good on yellow, white, or red cattle as it is on black cattle.

Materials Needed for Freeze Branding:

1. Chute or restraining device.
2. Hair clippers, brush and squirt bottle.

3. Branding "irons."

4. Insulated container for coolant.

5. Alcohol (95% ethyl, methyl or isopropyl) or acetone.

6. Dry ice or liquid nitrogen.



Figure 5: A freeze brand-summer.



Figure 6: A freeze brand-winter.

Technique for Freeze Branding:

Essentials of successful freeze-branding are properly cooled irons, uniform pressure and correct timing. Key steps follow:

1. Cool "irons" in alcohol and dry ice or liquid nitrogen.
2. Restrain animal.
3. Clip area on fleshy part of rump or side.

4. Clean by brushing, and wet thoroughly with alcohol from a squirt bottle or sponge.

5. Firmly hold the iron for the necessary time.

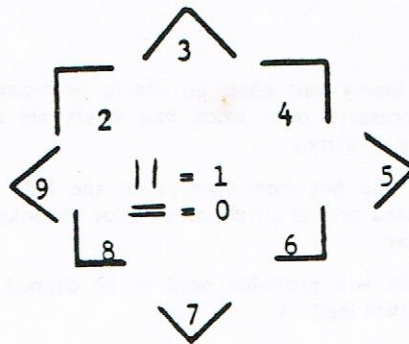
Timing	Calves	Mature cattle
Alcohol and dry ice	40 seconds	60 seconds
Liquid nitrogen	10-15 seconds	20-30 seconds

C. *Chemical Branding* is done by applying a caustic liquid or paste to the hide with a specially designed iron. The chemical causes irritation to the skin, removal of the hair and a scar to form. While a minimum amount of skill and equipment is required for this method, ideal weather is necessary and smearing of the chemical by riding or tail switching must be avoided. Results with chemical branding have been highly varied. If this technique is chosen, directions supplied by the manufacturer of the chemical should be closely followed.

Angle Brand System

A universal identification system, based on two concentric squares, has been devised by U.S.D.A. ARS workers. In the basic square, numbering starts with 2 and continues clockwise 4, 6, 8. Odd numbers are shown by a second square, rotated an eighth turn to the right as shown in figure 7.

These marks can be applied by either hot or cold branding techniques. In recognition trials these were more easily read than numbers.



11 = 7L is read 1048.

Figure 7: Angle brand system.

Summary

Identification is a must in modern beef production. A good identification system may combine two or more methods, such as ear tags and tattoos for individual identification and fire or cold branding for establishing ownership. One simple principle of identification that is frequently violated is that every time a number is changed on an animal the chance of a record mix-up is increased. Where possible, numbers on brands, tags, tattoos and neck chains should correspond, and once an animal is assigned a number, that should be his for life.

This information was prepared for the Southern Regional Beef Cow-Calf Handbook by Curtis Absher, Fred Thrift and Nelson Gay, University of Kentucky.

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