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Radio Frequency Identification Ear Tag Application and Management
Michigan State University Extension Service
Michigan RFID Education Task Force
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Michigan RFID Education Task Force



Radio Frequency Identification Ear Tag Application and Management

All cattle leaving their premises in Michigan starting March 1, 2007, must be tagged with an RFID ear tag approved by the Michigan Department of Agriculture.

Radio frequency identification (RFID) ear tags should be applied according to the manufacturer's instructions. General procedures are outlined here to familiarize cattle producers with RFID tag application and management of the tags to optimize retention and readability.

RFID Tag Application

Radio frequency identification tags can be applied anytime following the birth of the animal. The applicator must be specifically made for the RFID tags to be used. Use of a different manufacturer's applicator or an applicator designed for other tag types will likely destroy RFID tags. Load the applicator according to the manufacturer's directions. For example, with round, half-duplex RFID tags, the raised portion of the tag, which contains the transponder chip and capacitor, should point outward so that they will not be squeezed in the jaws of the applicator (Figure 1). Putting excessive pressure on the transponder portion of the tag may damage it and make it unreadable by RFID readers. It is advised that the piercing portion of the tag (male stud) be dipped in an antiseptic or disinfectant solution immediately before tagging

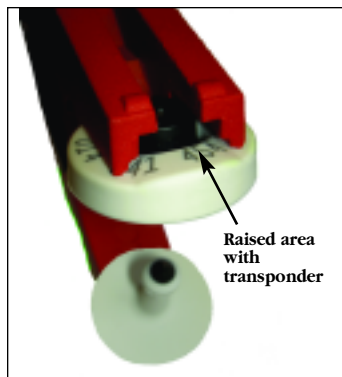


Figure 1.
Correct orientation of RFID tag in an applicator.

to speed the healing process. Some tags are available with a disinfectant preapplied. The animal's head needs to be held securely to allow the correct positioning of the tag in the ear. Applying an RFID tag generally takes more force than applying a bangle or metal tag because of the tamperproof design. The RFID tag also is applied to a thicker portion of the animal's ear than most bangle tags. When applying tags in cold weather, storing the RFID tags at room temperature will keep them pliable.

Recommended Tag Placement

Official RFID ear tags should be placed in the left ear. (The left ear is on the left side of the animal when it is viewed from behind.) The left ear is used because the U.S. Department of Agriculture (USDA) reserves the right ear for official calfhood vaccination tattoos. Therefore, RFID readers in markets and processors are optimized for a read zone on the left side of the animal. If the left ear of the animal is completely unusable (e.g., frostbitten, torn), the right ear may be used. The tags should be placed between the cartilage ribs about one-fourth of the distance from the head (Figure 2). This site will result in the greatest retention yet will allow for growth of the ear in immature animals. Tags placed too near the head will not have sufficient space between the two disks of the tag to allow the piercing to heal properly. Tags placed too far from the head will increase the probability of snagging on objects, reducing retention and making the animal's ear susceptible to tearing.

The female part of the tag should always be placed on the inside of the ear with the male stud on the back of the ear. When tagged correctly, the disk of the male stud will lie flat against the back of the ear, resulting in the best tag retention. Ensure that the animal identification number on the backing stud corresponds to the number on the matching front before placing the tag.

An alternate tag location may be used but is suggested only for use in finishing animals. The alternate location is above the upper cartilage rib toward the curvature of the ear. This placement results in the male stud disk lying on top of the ear. This location may be preferred in situations where additional management procedures require extensive use of the back of the ear (e.g., implanting, vaccination, antibiotic therapy).

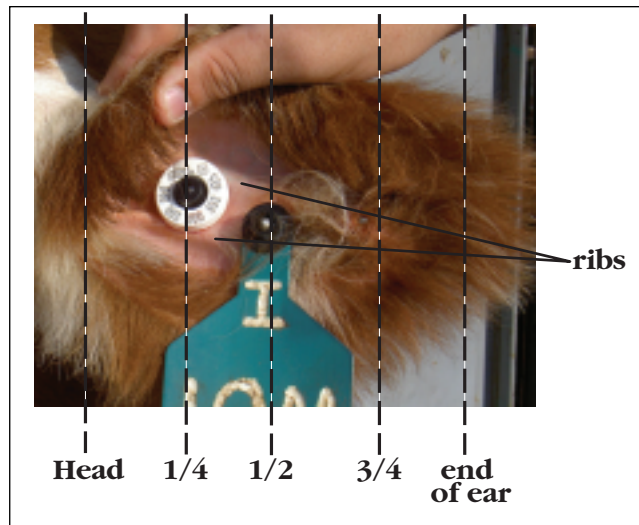


Figure 2. Proper placement of RFID and visual tags in the left ear.

- Tag retention is enhanced when the animal's environment is kept free from objects that will catch on the tags (especially the backing disk). A common cause of tag loss is the presence of baling twine, which will snag the RFID backing disk. Cutting twine and removing it from bales being fed greatly enhances tag retention.

- If an official RFID ear tag is lost and it is necessary to retag an animal with a new official number

(assigned to that premises), every effort should be made to correlate the new official number with the previous official number of the animal. A paper or computerized copy of this change should be kept on file at the animal's premises.

For more information or to obtain other fact sheets in this series, go to: www.michigananimalid.com.

Note: Brucellosis calfhood vaccination records should now use the official RFID tag animal identification number and do not require a calfhood vaccination orange metal tag.

Management Considerations

- Official RFID tags are intended to provide permanent identification of livestock and ensure the ability to find the source of animal disease outbreaks. **Removal of these tags is prohibited** except at the time of harvest. Official RFID tags each have a unique identification number, are intended for one-time use and should never be reused.

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