

## ELECTRONIC IDENTIFICATION OF SHEEP

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The permanent identification of domestic animals is necessary and indispensable in certain situations such as pedigree records, production records, and national health programs, but permanent animal identification has always presented problems. The ear tag is not a permanent form of identification since it can be removed or lost. Up to now, the only recognized form of permanent identification was an ink tattoo in either the ear or on the flank of the animal. Tattooing is difficult, time consuming, and in some cases difficult to read, especially when the epidermis of the animal is black or when the tattooing has not been done properly.

With the advance of technology, a new form of identification made its appearance—electronic identification. A passive radio-frequency device is inserted in the ear of the animal. This device consists of an electromagnetic coil, tuning capacitor, and a microchip sealed in a cylindrical glass enclosure. The chip is preprogrammed with a unique ID code that cannot be altered. When the device is activated by a low-frequency radio signal, it transmits the ID code to the reading system. This injectable device, called a transponder, is fairly small (.43" x .08"), and one or two weeks after its implantation close to the head of the animal, it becomes extremely difficult to locate or to remove.

The small amount of time involved in injecting the transponder in the animal and the speed and accuracy of the reading of the ID chip make electronic identification very appealing. However, the initial cost to identify all animals on a farm and the utilization of the data provided may be a deterrent for its widespread use.

### **Material needed and approximate cost.**

The cost of items presented below may vary from one manufacturer to the other also will depend on the sophistication of the reader.

-Transponders--20/cartridge	\$ 120.00
-Reader (with memory)	\$ 735.00
-Injector	\$ 69.95
-Replacement needle	\$ 8.25

Therefore, the initial cost for the identification of 100 ewes will be \$ 1413.12. The cost in subsequent years would be substantially lower since only the transponders and a few needles would need to be purchased.

### **Procedures for implantation.**

Transponders come in cartridges of 20 each which fit into the injector like a bullet clip. The injector is basically a syringe with a needle 3" long and .09" in diameter and a trigger mechanism to release the transponder.

The head of the animal is immobilized by an assistant or by a mechanical system. The needle is inserted under the skin of the upper side of the ear about two inches from the base of the head. The needle is inserted as far as possible and the trigger of the injector is gently pulled in order to place the transponder without breaking the glass capsule. The time required is no more than a few seconds. The next transponder is semi-automatically loaded in the needle.

### **Procedure for reading the code.**

The reading of the electronic chip is easily done by placing a battery-powered reader about 5 to 10 inches above the ear of the animal. The reading is instantaneous and accurate.

According to the reader model, the ID read can be stored in memory and downloaded to a computer or printer via a RS232 port cable.

This is an extremely valuable tool for a large sheep operation entering the Voluntary Scrapie Flock Certification Program. The whole flock inventory can be checked in a few minutes instead of hours spent trying to read tattoo numbers.

### **Advantages of EID.**

- Quick to insert in the ear.
- Easy and accurate to read.
- Data can be directly entered into a database.
- Many possible applications (weighing, sorting, milk production).

### **Disadvantages of EID.**

- High initial cost.
- Still need regular ear tags for everyday use.
- Reliability of the system has not been tested yet concerning the deterioration or loss of implants.
- The ID codes are difficult to manage without the help of a computer. The ID code consists of 10 digits, both letters and numbers. The combination of letters and numbers allows the possibility of a huge amount of codes without any chance of a duplicate. However, without the help of a computer, their management is difficult.

### **Names and addresses of EID manufacturers:**

Allflex USA  
PO Box 612266  
2805 E 12th Street  
Dallas/Ft. Worth, TX 75261

Destron Fearing  
490 Villaume Ave.  
So. St. Paul, MN 55075  
(612) 455-1621

Avid  
3179 Hammer Ave.  
Norco, CA 91760  
(909) 371-7505