

**The National Animal Identification System  
Sheep Working Group Report  
Cindy Wolf, DVM, Chair  
August 2006**

### **Current Status and Principles of Sheep Identification**

The sheep industry is committed to enhanced disease prevention, control and surveillance which will be accomplished through modern animal identification and tracking systems. The U.S. sheep industry, through implementation of the mandatory Scrapie regulations, implemented a national sheep identification system for breeding animals, which is being enforced at the State and national levels. This mandatory program, named the National Scrapie Eradication Program or NSEP, began in September 2001. The Scrapie ID system is necessarily a visual-based tracking system for animals that is supplemented by the use of records of ownership, registry recordation and movement. Visual-based tracking systems have many recognized short-comings, two of which are opportunities for reading errors and the lack of speed with which numbers can be read and recorded. For this reason, the sheep industry is very interested in pursuing the discovery and testing of more automated, accurate and high-throughput identification systems, yet there are no proven systems available to date.

The current visual identification system for breeding stock is adequate for the Scrapie program and is the best technology has to offer at this time for individual sheep identification systems in general. The premises (Scrapie flock ID number) and flock assignment system works well as does the ear tag distribution system. However, for slaughter and feeder sheep (all sheep under 18 months of age and not designated as breeding animals), an individual ID system that is based upon visually read ear tags for tracking would not be suitable for accomplishing 48-hour traceability. It would take too long to catch each animal for close inspection and record individual numbers plus the reading/recording errors would be expected to be substantial. It is worthwhile to note that major sheep producing trading partners are focusing on group/lot-based premises identification for sheep. Our trading partners have to be sensitive to the demands of export trade regarding meat traceability; whereas, 100% of US lamb is consumed within this country. The only practical and efficient way to accomplish 48-hour traceability for feeder and slaughter sheep in the U.S. using current technology is to identify and record the movement of groups and lots of animals. For the foreseeable future (until a more efficacious and cost-effective system is discovered and proven), 48-hour traceability can be best accomplished for sheep by using the current Scrapie ID system and overlaying a group/lot ID system.

The group/lot ID principles are:

- Applicable to animals outside the purview of the Scrapie ID system (animals under 18 months of age and not designated as breeding animals or exhibition animals):
- A group/lot receives one ID (not individual) for the group/lot. The group/lot ID (GIN) stays in effect for those animals for the life of the group/lot. Groups/lots can be combined with other animals/groups/lots and would then constitute a new group/lot. Groups/lots can be subdivided and the subdivisions would be new groups/lots. Each group must have a recorded history from their flock of birth to the slaughter plant.

Individual animals pulled out of groups/lots would receive individual IDs. A group/lot of feeder/slaughter sheep would be defined as 10 or more animals.

- The GIN numbering system would be consistent with that proposed in NAIS. The group/lot ID number (GIN) would be a 15 digit, producer-generated number that would be comprised of the seven digit NAIS premises number, the six digit date that the group was assembled and 01 at the end meaning that it was the first group assembled on that date, 02 if it was the second and so forth and so on. GIN records will be maintained and retained by the owner for a period of five years after the group is retired. These production records will be made available to USDA when warranted by a significant animal health event. Records will include: Animal additions (source PIN, date entered, number of head); Animal removals (date, reason for removal); Destination (PIN); Inventory reconciliation.
- The person sending the group assigns the GIN, but the receiving premises reports the group's physical arrival to NAIS. Note that once the group enters the feeding channels, normal practices and records will keep track of the group to the extent practical. When the animals leave the feeding site, they are given a new GIN which would be reported at the packing plant. This approach is scientifically sound for diseases of concern to sheep. The sheep working group thinks that if a Foot and Mouth Disease (FMD) exposed sheep is traced back to a feedlot (or slaughter or grazing movement), further action will not be altered whether the sheep was traced using individual ID or a group/lot ID. All of the animals in the feedlot would have to be considered potentially exposed, regardless of whether you could identify the individual animal that you are tracing. The sheep working group believes that the NAIS program should be designed for real risks such as FMD and not every 'what-if' scenario.
- Group/Lot ID permitted for movement of breeding sheep for management purposes where there is NO change of ownership. This would apply to either intrastate movements or interstate movements. This class of sheep is currently exempt from Scrapie ID requirements. The reporting requirements for interstate movement would be the same as described for feedlot and slaughter sheep. Intrastate movement under these conditions does not have to be reported, unless commingling occurs.
- Sexually intact sheep could only be pulled out of groups/lots for breeding purposes if they had official ID indicating premises of origin identification.
- All exhibition animals will continue to be individually identified, this includes wethers.

Only the individual identification of exhibition wethers will be outside of the Scrapie ID system to comply with the NAIS system; the Scrapie flock ID will be matched with the NAIS premises ID (PIN) in the database.

Since the purpose of the NAIS is disease tracking, epidemiologic basis for Group/Lot ID in sheep is as follows. Foot and Mouth Disease is probably the most contagious animal disease that the US livestock industry faces and is often used as an example of why we need 48-hour tracking ability. If a FMD-exposed sheep is tracked into a feedlot (or slaughter, or grazing movement) it will not alter any further action whether that sheep was traced using an individual animal ID or a

Group/Lot ID. Depending on the FMD strain, sheep can show little to no signs of the disease yet still be capable of spreading the disease to other animals. This was exactly the situation in England during their latest FMD outbreak. The exposed animal could be an asymptomatic carrier where they are infected with the virus but do not show clinical signs. This type of animal could possibly be identified on blood tests but there are drawbacks to this approach as well. The exposed animal could also be a mechanical carrier, where the virus is just carried on the wool or other body part. This animal could not be identified on any test but could still spread the disease. The point here is that if a FMD exposed animal were traced to a feedlot, all of the animals in the feedlot would have to be considered potentially exposed whether you could identify the individual animal you are tracing or not.

The SWG is convinced that for almost all diseases, if a diseased animal is traced to a feedlot, whatever action that may be necessary will have to be applied to all the animals in the feedlot.

Ear tags for the Scrapie program will continue to have the Scrapie flock ID number printed on them. Electronic ear tags for voluntary use will have the premises-based individual animal number on them and not the 840 numbers. This is necessary for the foreseeable future due to the dependence on visual number reading and the record keeping requirements of the scrapie eradication program. For future use in the impending NAIS mandatory system, standards for sheep electronic ear tags will be developed after an electronic ID system is discovered, defined and tested.

In conclusion, the U.S. sheep industry has already accomplished a large part of the NAIS principle through the ID component of the National Scrapie Eradication Program. With current technology, the industry can best accomplish 48-hour traceability through the use of 1) group/lot ID to track movement and 2) continued use of premises of origin ear tags in breeding and cull sheep sales and exhibitions.

## **Summary**

After consideration, the Sheep Working Group (SWG) concluded that moving the USA sheep industry toward the “48 hour” goal would best be achieved by:

1. Using the existing national Scrapie ID plan as the starting point. Though not ideal, it is a more complete ID system than exists for other species in the USA at this time. It has made many improvements since its hurried inception in 2001. It is thus wise to evolve this program toward the future rather than impose a brand new system.
2. Recognizing that no purely visual ID system would achieve the final tracking goal, an electronic method is needed. However no proven electronic national identification and tracking system for small ruminants currently exists in the world.
3. Strongly supporting multi-environment research within the USA to demonstrate the potential problems and solutions involved in a national electronic tracking system for the USA sheep industry.
4. Recognizing that the USA sheep industry is small relative to sheep industries in Europe and Australasia. We know that ambitious research is underway overseas to develop, test, and prove electronic ID for sheep for national tracking. We strongly support staying in

close contact with our overseas counterparts in their respective sheep industries regarding RFID identification systems for official usage.

5. Recognizing that the electronic ID devices and readers suitable for cattle and pigs may not be suitable for sheep. Eartags in sheep are more likely to be lost and more likely to cause infection. Tests in multiple countries suggest that accurate reading of RFID devices in a moving stream of sheep is more difficult than cattle. For these and other aspects, the minimum standards and features will need to be different and have yet to be fully developed.

### **2006 Recommendations:**

Because of mandatory ID requirements required by the National Scrapie Eradication Program (NSEP) since September 2001, the US Sheep industry is aware of the costs of ID programs. Producers and regulators are also aware of the importance of compliance with mandatory ID as required by the NSEP. The industry has unanimously weighed in that further changes to mandatory sheep ID at this time would be unwarranted from a disease control standpoint, costly, and unlikely to be followed by the industry. Use the existing National Scrapie Eradication Program (NSEP) as the starting point for the National Animal Identification System (NAIS) as it applies to sheep. Animals currently required to be tagged under the NSEP would continue to be tagged under NAIS. If, in the future, there is a need to progress into a more involved program then this is only practical and workable once all elements for animal movement tracking are truly possible.

If technology advancements regarding Scrapie diagnosis warrant a change in mandatory ID, or electronic tracking becomes workable and truly affordable at the production level, then changes would be more welcome by industry regarding electronic ID and tracking. If electronic ear tags, readers, data capture devices and software become available that work reliably and efficiently at a realistic price, then electronic recording of animal movements, as animals move in intra- and inter-state commerce, may be achievable. Some of the costs of such endeavors will need to be born by the public sector in order to achieve compliance.

SWG recommends that visual and electronic sheep tags continue to be issued (printed) with the individual animal management number and the Scrapie Flock ID number. When these numbers are combined, they are one unique number. The addition of the 15 digit "840" number will force the existing Scrapie flock ID number and the individual animal ID number to be printed even smaller than they are currently and will increase the error rate when tags are transcribed during collection from sheep and goat heads/brains during routine Scrapie surveillance. Replacing the existing numbers with the 840 number would result in an unacceptable number transcription error rate. The end result would jeopardize the Scrapie surveillance efforts.

Concern that NAIS Premises numbers have either O, I or Q or 0 and 1 but not both. When sheep heads are collected during routine Scrapie slaughter surveillance, accurate recording of ID is imperative for Scrapie tracing. Having the possibility of confusing these letters and numbers could be damaging to Scrapie control efforts. This concern has been articulated by those field staff who collect this information.

Within the industry there has been a significant amount of discussion surrounding the definition of a premises and application of such. Producers need to visit with their State Veterinarians to

determine how they are interpreting which leased and/or non-contiguous premises need registration and which animal movements will require reporting. Regarding the federally proposed voluntary NAIS program, a premises is defined as “a physical location that represents a unique and describable geographic entity where activity affecting the health and/or traceability of animals may occur. The State Animal Health Official or Area Veterinarian in Charge (and when appropriate, in conjunction with the affected producer) determines what is a premises.” The movement reporting of animals should not be required for singular ownership even when these animals leave owner-owned land and move to leased land or owner-owned non-contiguous properties as long as they did not commingle with another owner’s animals. There is no scientific basis or merit to requiring the reporting of these movements. If the NAIS program is to succeed in its mission, it will need to rely on strong producer compliance, which will only be possible when requirements make sense and are not onerous.

The U.S. sheep industry must have approved Group/Lot ID for feeder and slaughter lambs for NAIS to be doable. This method of identification also pertains to groups of ewes and/or groups of ewes and their nursing lambs that are moving across state lines for management purposes, i.e. grazing but remaining under same ownership and not commingling.

Lastly it is important to publicly recognize the team spirit with which members of the Sheep Working Group have worked together. We truly have broad industry representation and have gelled as a group such that we have lively discussions and are still able to come together with our thoughts at the end of the day. The group has climbed the learning curve regarding ID/tracking and functions as a sounding board for industry concerns.

### **Identification Details of the Current National Scrapie Eradication Program (NSEP)**

About 4 million sheep are born in the USA every year. It is estimated that 1 million sheep need to be officially identified every year under current Scrapie guidelines. They are:

1. Those born on a premises that enter the national breeding flock that currently numbers 8 million. They receive an ID before they leave the premises of origin. This includes some that are culled in their first year.
2. Show sheep of any age when they leave the farm/ranch for the first time.
3. Cull sheep over 18 months of age that leave the premises of origin even if they were not used for breeding.

Some states require all sheep that leave the premises of origin be tagged with an official Scrapie tag even if they are wethers and/or are only going for slaughter. Also some producers tag all animals because it simplifies their management and recording. This increases the estimate of sheep that are identified annually under the national program to 2 million head.

The ID device used is primarily visual ear tags – either plastic or metal. A very small percentage use boluses and implants with the specific prior approval of USDA, APHIS, VS officials.

ID tags and applicators are currently free of charge to producers if they are ordered via their state VS office and accept basic designs. Reasons for providing them free are:

1. To encourage acceptance and achieve compliance.
2. Sheep are low value animals – particularly the aged cull breeding rams and ewes that are targeted in the Scrapie program (often less than \$50 per head).
3. It is a cost share effort. The cost to the producer (in time, effort and facilities) to install a sheep tag is 2-3 times the cost of the visual plastic or metal tag to the US government.

Producers who want tags other than the basic supplied design (of a different color or size) may purchase approved tag styles from APHIS-approved sources.

### **Definition of Premises**

The SWG suggests the following language. The premises is the ground, area, buildings and equipment occupied by, or used for, one or more flocks of animals. The premises is defined by the physical address of the headquarters of the owner/operator of the operation.

The above definition has functioned well in the USDA National Scrapie Eradication Program for the past 5 years. The NSEP has over 114,000 sheep and goat premises registered since its inception in 2001.

When an owner registers a premises, in which the flock's annual management/grazing plan includes public lands or rented lands and where there is an opportunity for animals to co-mingle with those from another premises, then those properties need to be specified at the time of premises registration. It is the owner's responsibility to keep such information current.

### **Definition of Premises Identification ID System**

An APHIS-approved eartag or tattoo bearing the premises identification number, which consists of the State postal zip code abbreviation followed by a unique alphanumeric number or name assigned by the State or Federal animal health official to the premises on which the sheep originated that, in the judgment of the State animal health official or AVIC, is epidemiologically distinct from other premises; or a permanent brand or ear notch pattern registered with an official brand registry.

Premises identification may be used when official individual animal identification is required if the premises identification method either includes a unique animal number or is used in conjunction with the producer's livestock production numbering system to provide a unique identification number and when, if brands or ear notches are used, the animals are accompanied by an official brand inspection certificate. Paint brands may be used on animals moving directly to slaughter and animals moving for grazing or other management purposes without change in ownership.

The premises is defined by the physical address of the headquarters of the owner/operator of the operation. There may be more than one flock tied to that allocated premises.

The national allocator premises numbering system, as recommended by the NAIS, would be linked to the existing Scrapie flock ID number through the Scrapie generic database.

### **Premises Identification Number (adapted from Scrapie Program)**

This is a unique number (sometimes used on official eartags and tattoos) to identify the premises of origin of an animal and that is recorded in the Scrapie National Generic Database

(SNGD). The first two digits are the postal zip code abbreviation followed by a unique sequence of numbers and/or letters that does not include I, O or Q. States have had latitude in the amount of numbers used in premises identification numbers. The future plan is to have three fields in the SNGD (and GDB), one for the new nationally allocated premises number to be used with the National Animal Identification System (NAIS), a second with the previously assigned (State) premises number in use today, and a third with the Scrapie flock identification number often used on the official Scrapie eartags.

### **Definition of Flock (from Scrapie Program CFR)**

A flock is all animals maintained on a single premises and all animals under common ownership or supervision on two or more premises with animal interchange between the premises. Changes in ownership of part or all of a flock do not change the identity of the flock or the regulatory requirements applicable to the flock. Animals maintained temporarily on a premises for activities such as shows and sales or while in marketing channels are not a flock.

More than one flock may be maintained on a single geographical premises if a State or APHIS representative determines, based on examination of flock(s) records, that the flock(s) is epidemiologically distinct and that:

- No female animals have moved between the flocks;
- The flocks never commingle and are kept at least 30 feet apart at all times or are separated by a solid wall through, over, or under which fluids cannot pass and through which contact cannot occur;
- The flocks have separate flock records and identification;
- The flocks have separate lambing facilities, including buildings and pastures and a pasture or building used for lambing by one flock is not used by the other flock at any time; and
- The flocks do not share equipment without cleaning and disinfection in accordance with the guidelines published in 9 CFR 54.7 of the “Scrapie in Sheep and Goats; Interstate Movement Restrictions and Indemnity Program.”

### **Definition of Breeding Sheep (from Scrapie Program CFR)**

Any sexually intact sheep of either sex that is not moving directly to slaughter, through slaughter channels or to a feedlot to enhance its condition for movement to slaughter.

### **Definition of Wether (from Scrapie Program CFR)**

A wether is a castrated male sheep.

### **Definition of Device (from Scrapie Program CFR)**

The identification devices supported by the SWG are the visual device(s) approved for use for the Scrapie eradication program. Producers may voluntarily use an electronic device that follows the standards set forth in NAIS.

### **Definition of Scrapie Flock Identification Number (adapted from Scrapie Program CFR)**

In some states the premises number is longer than is desirable for eartag usage, so a four to five digit number is used on the eartag that is linked to the premises identification number in

the SNGD. This number is generally referred to as the Scrapie flock identification number and is generally preceded by the state abbreviation.

**Definition of Slaughter channels** (from Scrapie Program CFR)

Animals in slaughter channels include any animal sold, transferred, or moved:

- Directly to slaughter facility,
- To an individual for custom slaughter,
- For feeding expressly to improve the animals' condition for movement to slaughter, or
- Through a sales or market expressly for one of these purposes.

Markets or sale operators must notify buyers when lots of animals in slaughter channels are being sold. Sexually intact mature female animals, as evidenced by eruption of the first incisor that are maintained in the same enclosure with breeding animals from another flock are not in slaughter channels.

**Further SWG Recommendations**

1. Official Sheep Tags need to be visually easy to read—

The need to read sheep tags visually will continue for several years after a switch to electronic tags is approved. (It is estimated that 1,000,000 sheep tags are read visually each year)....

- Show sheep tags are read multiple times at shows & fairs nationwide.
- A veterinarian must read ewes and rams moving across state lines.
- Producers must read tags on their own place for any sheep over 18 months of age that leave their property.
- Producers read the tags for management purposes.

Wherever possible, tag design should allow large enough numbers to be read easily and accurately. An exception to this recommendation might be range conditions, where tag retention is reported to be negatively impacted by the required size of the plastic tag needed to have easy-to-read numbers. In such situations, the metal clip style tag is the only current option. Practically speaking for most range flocks, the frequency of tagging and recording occurs but once in the animals' lifetime— at culling.

If long strings of numbers such as 15 digits must be visually read and recorded manually, errors are likely to occur. Metal and plastic sheep tags have too little space to provide a tag with this many characters large enough to be read accurately and rapidly. This situation suggests that it is more practical in the short term to retain the current Scrapie flock/tag numbering system.

2. Analysis of Relative Suitability of ID devices for sheep

***Metal loop strip tags***

*Cost:* low ( $\pm$ \$0.08)

*Readability:* difficult to read accurately and rapidly.



*Retention:* arid range conditions, the retention rate of metal tags is reputed to be higher than plastic tags

*Reaction:* Reports suggest higher infection problems in sheep in non-arid conditions. .

*Comments:* A trial to appraise the efficacy of current plastic tag designs in range conditions is suggested.

### ***Plastic sheep tags***

*Cost:* relatively low ( $\pm$ \$0.30)

*Readability:* relatively easy to read visually if leaf/bangle type—less so if strip/loop type.

*Retention:* varies markedly, so tests are suggested prior to approval as an official tag.

*Comments:* Larger plastic tags are too heavy to be inserted as baby lambs. Tamper-\ varies—but few are 100%— to the very determined.

### ***Rumen RFID boluses***

*Cost:* High ( $\pm$ \$3.00) (in addition will need a visual tag to indicate presence and an electronic reader to read bolus)

*Readability:* Need electronic reader – not inexpensive

*Retention:* high retention rates if installed after sheep are 50 lbs or heavier

*Comments:* They are not approved by the FDA due to the need to retrieve them at slaughter. They are difficult, but not impossible to “tamper”.

### ***RFID eartags,***

*Cost:* expensive ( $\pm$ \$2.00) when installed in a lamb/ewe that’s worth less than \$100 at slaughter. (Do not necessarily need electronic read with visual component of ear tag)

*Readability:* This combination offers the most promise for being able to be read accurate and rapidly both visually and electronically.

*Comment:*The SWG considers it essential that more research be done to assess and demonstrate RFID sheep eartag insertion, retention, ear reaction and infection, and readability rates (by an array of fixed and hand readers) — in multiple environments and circumstances (range vs. farm flock, humid vs. arid, brush vs. open large vs. small breeds)

### ***Retinal scanning***

*Comments:* is not suitable for the surveillance aspect of the Scrapie eradication program because it’s not usable when the animal is dead—and Scrapie testing is done post-slaughter.

### ***Implants***

*Cost* - in volume are not available. Will need visual to indicate presence and electronic reader

*Retention:* Research results indicate that they do not migrate and are recoverable at slaughter

*Readability:* No problems reading implants that are present. Will need electronic reader

*Comments* are being tested for suitability in a current sheep ID trial using the caudal fold instead of the ear.. Speed and precision of installation are currently being assessed.

3. More standardization is needed. Though most states use a similar numbering system for Scrapie ID, several variations exist. Variations make it more difficult to rapidly differentiate official tags from other tags even with a US shield imprinted on the tags.

4. Distribution. The tag order is sent to the authorized tag source with the correct Scrapie flock number. The tags are then imprinted and drop-shipped direct to the producer. This system appears to be working to the satisfaction of the majority of producers in terms of timing, accuracy and service. It is felt that increasing the number of sources (i.e., retail stores, etc.) would increase the risk of errors in both distribution and database entry.
5. The SWG recognizes that the minimum identification device standards for sheep need to be different than those of cattle and pigs. We feel defining the final standards for sheep should be delayed pending:
  - a. The completion of an objective review of the standards suggested and rationale by other countries for official sheep ID.
  - b. The completion of the trials of electronic devices and readers for sheep in this country and others.
  - c. ID device standards for sheep will need to address two types of devices electronic and visual
    - i. Electronic
      - ◆ Transponders - read rates and range, security, placement, infection rate, malfunction, tag retention, migration
      - ◆ Readers – read rates and range, malfunction, battery and AC/DC, weather resistance, shock resistance, ability to download/upload data
      - ◆ Tag applicator devices – multiple applications with one loading (like a stapler), foolproof, breakage rate under all conditions, user-friendly for variable hand sizes, minimize discomfort of animals, etc.
    - ii. Visual – number, size, eartag material, durability, reaction/infection rate and retention rate
6. Currently a Scrapie flock identification number is printed on most official Scrapie ear tags. The Scrapie flock identification number is tied in the national database to a premises identification number. The SWG supports the assignment of new premises numbers as defined in the NAIS standards . It has been demonstrated that a flock ID number can be tied to the premises number in the Scrapie database. The sheep industry feels it best to continue imprinting the current Scrapie flock ID number plus individual animal ID on the visual ID tag as it has fewer digits and therefore is more user friendly for visual reading. To date there haven't been any negative results of imprinting state abbreviations on the tags.
7. Country Code. We suggest not imprinting the country code “840” on the visual tag portion of official visual and RFID eartags since the presence of the US shield already indicates this. Doing both is therefore visually redundant and uses valuable space on a small surface area. Clearly, the “840” must remain upon the OTP chip.
8. Basic ID devices that provide positive, tamper-evident identification should be the standard. Cost of the device is a major consideration for commercial sheep producers—because sheep are low value animals vis a vis cattle. If a compromise has to be made between retention and tamper-evident characteristics, the SWG urges that maximum retention is more important in an ID device regarding Scrapie control than perfecting its tamper-evident features.

9. Producers who wish to use more technologically advanced devices for other management benefits should be allowed to incorporate those devices into the program, provided that they meet the basic standards of ownership traceability. Certain segments of the sheep industry, such as those people involved in the purebred industry that merchandise animals through shows and sales and have considerably more risk of disease contact and transmission, may wish to use technology that will track movements electronically.
10. Maintaining data integrity will be the challenge of the system. Human error in recording numbers and transferring information will be a major problem and will be time consuming unless it is electronically based. The door must be left open for research and technology to continue to improve on the devices that are currently available.

## **Event Protocols**

The procedures that should be utilized by producers, dealers, feedlots, markets, transporters, packers, and sheep exhibitions should, in most cases, mirror the existing regulations in place for Scrapie. The types of animal movements that must be monitored will also closely follow the current movements that are monitored because of Scrapie regulations.

All 50 States are Consistent States in the National Scrapie Eradication Program. This means all states have cooperative agreements with USDA, APHIS, VS and have agreed to meet all the requirements to be a Consistent State. The three most important components of these cooperative agreements are animal identification, movement requirements and restrictions, and record keeping for animal movements.

The list below indicates which movements will require the animals to have official identification. Where this is a departure from the current Scrapie regulations it will be noted. We recognize that some animal movements are not covered by Scrapie regulations and that these animals can be exposed to a disease and possibly transmit the disease. However, the risk in these types of movements is very small. The biggest risk occurs when animals from different premises gather and concentrate or commingle.

- A. Interstate Movement, whether there is a change of ownership or not, need to have official identification except;
  - Animals moving for grazing or other management purposes without a change of ownership.
  - Animals less than 18-months old in slaughter channels. Because these lambs can be exposed to diseases other than Scrapie, they should utilize a Group/Lot ID.
  - Wethers are currently exempt from Scrapie ID requirements until slaughter at greater than 18 months old. They should not be exempted unless they are in slaughter channels.
  - The type of documentation for these movements should be the same that is required by current Scrapie regulations. The sheep owner or the person applying the tags and the person receiving the animals would be required to keep records of this movement for 5 years. Any intermediate handlers would keep their normal type of business records for five years.
- B. Intrastate Movement, without change of ownership. No requirements.

- C. Intrastate Movement, with change of ownership, would require official ID and the same record keeping described for Interstate Movement.
- D. Exhibitions. All animals need official ID. Current Scrapie regulations exempt wethers but they should be identified and some States require their ID. Record keeping requirements will need to be made. Current Scrapie requirements apply only if there is a change of ownership. Some records are created when a Certificate of Veterinary Inspection (CVI) is required but this usually only applies to interstate movement. To ensure compliance and consistency throughout the United States enforcement of this regulation should be targeted. Exhibitions are the highest risk movement for highly communicable diseases due to extensive commingling and then returning to a producer's property.

All animals being shown or exhibited at fairs, sales, exhibits, etc., that result in the interstate movement of animals, must have official ID in place that is consistent with current Scrapie regulations. (This includes all registered breeding animals, jackpot wethers, market lambs, and any animals being exhibited at state fairs, petting zoos, breed exhibits, wool sheep, etc.) A Federal, State, or accredited veterinarian must inspect all animals at each state fair upon arrival. All animals that are exhibited from another state must have a current Certificate of Veterinary Inspection that includes each animal's individual Scrapie tag number and this number must match the number on the animal. All animals must be inspected for said numbers prior to exhibition at each state fair. Any animals not in accordance with the above regulations will not be allowed entry to said exhibition. All records of the animals exhibited in these shows must be kept by fairs for five years and shall be made available to USDA, APHIS, VS to allow for a forty-eight hour trace back in case of any disease threat. Identification of all animals at exhibitions may be updated as technology permits. New CVIs must be issued if change of ownership and interstate movement occurs.

### **Implementation Time Table**

The national sheep identification system will remain the same as is currently mandated by the USDA National Scrapie Eradication Program. When electronic identification for national tracking of sheep has been proven to work in actual industry settings and is mandatory, the industry will transition to electronic identification methods and tracking over an appropriate multi-year time frame assuming that there is an appropriate ratio of cost-sharing of the new system by participating stakeholders.

### **Financial Support**

We support continuation of the current cost-sharing approach to a national sheep identification system. Responsibility of the producer includes the identification device placement as well as the mandated record-keeping and retrieval. Producer-provided sheep handling systems are a necessary component for device placement. Responsibility of state and federal government would continue to include infrastructure support at the state and federal levels to allocate premises numbers, place tag orders, distribute tags, and maintenance of the database that houses the above information.

The working group feels strongly that continued research funds are needed to further develop and field test industry-friendly methods of electronic identification or other technology in sheep to enhance animal tracking at points of commingling.

When the technology glitches of electronic identification are resolved thus affording the national sheep identification program the option of utilizing electronic identification, then the market structure needed to utilize electronic identification and download/upload data must be supported in a cost-sharing approach between all affected parties. Recording and reporting of movement data will need to be simple with options that are computer-based, fax-based and/or telephone-based.

### **Research and Field-Testing**

Recognizing that USA sheep numbers are small relative to sheep industries in Europe and Australasia the SWG strongly supports multi-environment research within the USA to demonstrate the potential problems and solutions involved in installing a national RFID tracking system for sheep. Though the US sheep industry size is smaller than other countries, the pace that sheep are processed (animals per minute/hour) is similar. The US sheep industry expects high-throughput and high capacity with automated readability and therefore, tracking of identified animals at all places through which animals will move.

A coordinated effort to research and thoroughly field test in multiple settings/sites with quarterly reports to Sheep ID Working Group and annual field demonstrations of identification devices and systems (visual and electronic) is needed. The SWG would require the following data to assess the devices' acceptability for the National Animal ID system for sheep are:

- Longevity of the device, will it work for the life of the animal.
- Retention and recovery of the device, will the sheep retain it, will it migrate, fall out or easily tear out, etc. and at slaughter can the device be recovered easily.
- Readability (slow and high-speed throughput)
- Dual purpose use for management and regulatory traceability
- Ear reaction & infection – Ear tags depending on the climate of the region, age at placement, placement site, and ear tag design have a tendency to cause reactions and infections in the sheep's ear.
- Database retrieval and security

Software needs to be developed that will allow the electronic ID to be downloaded into different software programs. It will need to interact/ upload to relevant databases, however, for these devices to be readily accepted by the sheep industry as whole, the data should be accessible by different software programs.

For industry personnel who do not own/use computers, there will have to be alternate methods to transmit the required records to the relevant databases (fax or phone-in system). Along with industry personnel who do not own/use computers, there are a variety of exhibitions where collecting the required animal data on the exhibition premises would ensure compliance. Conceivably a wireless device that collects and downloads to the appropriate databases could be used in these instances.

To enable all of the sheep industry to benefit from research that studies electronic ID systems, the SWG requests that the USDA review panel includes members of the work group. This review panel would assist the USDA in awarding research grants and critiquing the study reports.

## Addendum #1

### Explanation and Examples:

Producer Ann takes lot #AD23Z4408010601 of 20 lambs born on her premises to Market A. At Market A:

- Lamb lot #AD23Z4408010601 containing 20 lambs,
- lamb lot #BF78Y0008010601 containing 32 lambs,
- lamb lot #CJ780V008010601 containing 15 lambs, and
- lamb lot #TT78F0208010601 containing 33 lambs
- are sold to lamb feeder Joe NAIS PIN NK34T56 and form a new group lot #NK34T5608010601

(Producer Ann will record formation of lot #AD23Z4408010601 of 20 lambs born on her premises and movement of that lot to market A. Likewise, each owner of the other three lots will record formation and movement of the groups/lots using the record of sale/receipt provided by market A.)

Market A will report to NAIS formation of lot #NK34T5608010601 as a combined lot of,

- lot # AD23Z4408010601 of 20 lambs,
- lot # #BF78Y0008010601 containing 32 lambs,
- lot #CJ780V008010601 containing 15 lambs,
- lot # TT78F0208010601 containing 33 lambs and
- sale of that lot to Joe NAIS PIN NK34T56.

Lamb feeder Joe unloads lot #NK34T5608010601 at his feedlot,

- He divides this lot by lamb type and condition into 4 groups of 25 each
- He mixes these with other lamb lots of similar type and condition.

When he is sorting lambs to load for slaughter he pulls some from each of 2 pens. He reports formation of the new group/lot #NK34T5609250601 listing its component lot numbers to NAIS. The slaughter plant reports slaughter of group/lot #NK34T5609250601 to NAIS. Joe must be able to verify when all lambs from all of his purchased lots have been moved to slaughter and that all were slaughtered at under 18 months of age.

In normal industry practice, most lambs are moved to large custom feedlots where owner-lot performance is tracked for business purposes. The major change in responsibility for feedlot operators would be NAIS recordation (and reporting). In nearly all cases under industry practices, lambs are moved to slaughter long before they approach 18 months of age since the definition of “lamb” refers to sheep under 12 months of age (determined by FSIS inspection); sheep exceeding 12 months of age when slaughtered are considered mutton and are price-discounted. Sheep products exceeding a “yearling” classification would enter different marketing channels than lamb, would not fit lamb fabrication standards and are thus not desirable to be processed at major lamb slaughtering establishments.

## Addendum #2

### Sheep Working Group Members

Dr. Cindy Wolf,  
Chair  
Producer, University of  
Minnesota  
Rushford, MN

Dr. Michael Bishop  
MB Genetics  
Rio, WI

Mr. Bill Brennan  
Iowa Lamb Corporation  
Hawarden, IA

Mr. John Cargile  
Mr Charlie Christenson  
Producers Livestock Auction Co.  
San Angelo, TX

Mr. Chico Denis  
Lamb Feeder  
San Angelo, TX

Mr. Paul Frischknecht  
Producer  
Manti, UT

Mr. David Greene  
Producer  
Whitehall, MD

Dr. Dave Morris  
Mr. Neil Hammerschmidt  
USDA APHIS  
Riverdale, MD

Dr. Lyndon Irwin  
Producer  
Bois D'Arc, MO

Dr. Cleon Kimberling  
Retired Extension Veterinarian  
Fort Collins, CO

Dr. Rodney Kott  
Montana State Univ.  
Bozeman, MT

Ms Judy Malone  
American Sheep Industry  
Association Centennial, CO

Dr. Chuck Palmer  
Veterinary Medical Officer  
Redding, CA

Mr. Jay Parsons  
Optimal Ag  
Fort Collins, CO

Dr. Stan Poe, Sr.  
Producer  
Franklin, IN

Mr. Stan Potratz  
Producer, Premier 1 Sheep  
Supplies, Ltd.  
Washington, IA

Mr. Paul Rodgers  
American Sheep Industry  
Association  
Ronceverte, VA

Mr. Rob Rule  
Iowa Lamb Corporation  
Hawarden, IA

Mr. Bill Salina  
National Lamb Feeders  
Association  
Great Falls, MT

Dr. Bill Seals  
Producer  
Morgan Hill, CA

Ms Sandy Snider  
Producer and Special Projects  
Coordinator - Mountain States  
Lamb Cooperative  
Powell, WY

Dr. Diane Sutton  
Dr. Gary Ross  
USDA APHIS  
Scrapie Program Coordinator  
Riverdale, MD

Ms. Linda Campbell  
Goat Working Group Chair  
Luray, VA

### Affiliated parties

Dr. Joe David Ross  
Hair Sheep and Goat Producer  
Sonora, TX

Ms. Bonnie Kline Colorado Wool  
Growers Association  
Arvada CO

Dr. Pam Smith  
IA Dept of Ag &  
Land Stewardship  
Des Moines, IA