

**The U.S. Animal Identification Plan
Sheep Species Working Group Report
May 4, 2004**

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 2002. It is thus wise to evolve this program toward the future rather than impose a brand new system in the beginning.
2. Recognizing that no purely visual ID system would achieve the final tracking goal, an electronic method is needed. However no proven RFID national tracking system for small ruminants currently exists in the world. The Canadian province of Quebec is commended for its steps towards installing one.
3. Strongly supporting multi-environment research within the USA to demonstrate the potential problems and solutions involved in a national RFID 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 RFID for sheep for national tracking. We thus strongly support staying in close contact with our overseas counterparts in their respective sheep industries regarding RFID ID systems for official usage
5. Recognizing that the ID devices and RFID 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 both different and have yet to be developed

Definition of Premises

The SWG suggests the following in addition to the language on page 5-6 of the USAIP version 4.1. 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 3 years.

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 premise, then those properties need to be specified at the time of premise 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.

Any newly allocated numbering system, as recommended by the USAIP, would be linked to the existing scrapie premises number through the national 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 premises number in use today, and a third with the 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;

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 RFID device that follows the standards set forth in the USAIP.

Definition of 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 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.

Identification Details of the Current National Scrapie Eradication Program

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:

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

Some states require all sheep that leave the premise 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 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:

- a. To encourage acceptance and achieve compliance.

- b. Sheep are low in value animals – particularly the aged cull breeding rams and ewes that are targeted in the scrapie program (often less than \$50 per head).
- c. 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 them from APHIS approved lists of tags and sources.

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 RFID 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 vet 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.
- Some 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 (15 digits as in the proposed USAIP plan) 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 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 numbering system.

2. Analysis of Relative Suitability of ID devices for sheep

Metal loop strip tags are low cost (plus or minus \$0.08), but difficult to read accurately and rapidly. Reports suggest higher infection problems in sheep in non-arid conditions. In arid range conditions, the retention rate of metal tags is reputed to be higher than plastic tags. A trial to appraise the efficacy of current plastic tag designs in range conditions is suggested.

Plastic sheep tags are relatively low in cost at plus or minus \$0.30 each. Retention rate varies markedly, so tests are suggested prior to approval as an official tag. These are relatively easy to read visually if the leaf/bangle type is used—less so if the strip/loop type is used. Larger plastic tags are too heavy to be inserted as baby lambs. Tamper-evident capability varies—but few are 100%— to the very determined.

Rumen RFID boluses have high retention rates if installed after sheep are 50 lbs or heavier at installation. They are not approved by the FDA due to the need to retrieve them at slaughter. They require an accompanying visual ID to indicate their presence internally. They are difficult, but not impossible to “tamper”. Their cost is plus or minus \$3.00

RFID eartags, at plus or minus \$2.00 each are expensive when installed in a lamb/ewe that's worth less than \$100 at slaughter. But this combination offers the most promise for being able to be read accurate and rapidly both visually and electronically. The SWG considers it essential

that more research be done to assess and demonstrate RFID sheep eartag insertion, retention, ear 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 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 are being tested for suitability in a current sheep ID trial using the caudal fold instead of the ear. Early indications are that they do not migrate and are recoverable at slaughter. Speed and precision of installation are currently being assessed. Costs in volume are not available.

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.
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. 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 RFID 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 resistant, shock resistant, 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.
 - d. Visual – number, size, eartag material, durability, infection rate and retention rate
6. Currently a flock identification number is printed on most official scrapie ear tags. The 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 USAIP plan 4.1. It has been demonstrated that a flock ID number can be tied to the premises number in the database. The sheep industry feels it best to continue imprinting the current 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. No negative results of imprinting state ID 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, tamperproof 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.
9. Producers that 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 be required to incorporate 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 scrapie eradication program. This means all states have cooperative agreements with USDA APHIS 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 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 maintain a Group 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 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**. 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 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 shown or exhibited at fairs, sales, exhibits, etc., that results in interstate movement of animals, must have an identification 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 such as 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 health certificate 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 (5) 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 health certificates 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, the industry will transition to electronic identification methods and tracking over a three 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 research funds are needed to develop and field test industry-friendly methods of radio-frequency identification or other technology in sheep to enhance animal tracking at points of co-mingling.

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.

Group / Lot Identification for Sheep. The SWG feels that the management systems of a large percentage of the lambs born annually can meet the overall needs of traceback with Group/Lot (G/L) ID. This includes lambs born in range conditions and moved either direct to slaughter within 12 months or via feedlot and then direct to slaughter. The details are:

A flock can have multiple G/L as long as each G/L has a unique identifying number.

- ◆ A premises identification number along with
- ◆ A two-digit alphanumeric flock number and
- ◆ A two-digit alphanumeric G/L number will identify the G/L when it is created.

Individual animals leaving the group or lot would receive individual identification per section III.C.1 of USAIP: Standards. Sub-groups or sub-lots that are created from an established group would be considered new groups/lots and would receive the National Premises ID along with the two-digit alphanumeric flock number and the two-digit alphanumeric G/L number when the G/L is established. Owners of established G/L would be responsible for maintaining adequate records to achieve a 48-hour traceback to premises where the animals in the G/L could have been exposed to disease.

Production records:

For this G/L ID concept to be put into practice, during the initial implementation phase, germane records will have to be reliably retrievable.

Production records of groups/lot will be maintained and retained by the owner for a period of five years after the group is retired, unless the animal slaughtered is under 18 months of age. These production records will be made available to USDA when/if warranted by a significant animal health event. Records will include: Animal additions (source ID, date entered, number of head); Animal removals (date, reason for removal); Destination (ID, premises); Inventory reconciliation.

Static Groups/Lots

Static Groups/Lots include a definable number of animals that are assembled and maintained for a definable period of time and are normally part of an “all in-all out” system. They remain intact as a group and may move from premises to premises.

Sheep may move from a static G/L to a dynamic group within the same production system or to slaughter without individual ID. Static groups can be combined to form a new static group in an “all in-all out” system.

Examples of a Static group would include a flock of ewes along with their lambs that reside and/or graze within a production system under single ownership.

Dynamic Groups/Lots

Dynamic Groups/Lots include sheep that are in a continuous-flow production system where animals move in and out. A sheep can exist in only one dynamic group in a lifetime without an individual ID. Sheep that leave dynamic groups can either enter a static group or move to slaughter. Feedlots are aware that a traceback may involve the entire feedlot when lambs from multiple sources are commingled.

Examples of a dynamic group include a lamb feedlot where “lots” of feeder animals enter a continuous flow feeding system and are slaughtered.

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.
- Readability (slow and high-speed throughput)
- Dual purpose use for management and regulatory traceability
- Ear infection – Ear tags depending on the climate of the region have a tendency to cause 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 the government database, 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 the information the USDA requires will need to have an alternative, other than a personal computer, to transmit the records to the government database. Along with industry personnel who do not own or 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.

We would suggest that the following proposal be used as research

APHIS, with assistance from commercial component sources, would fund an 18-month comparative **field performance evaluation** of components of RFID sheep tracking system components (tags, boluses, static antenna/readers, hand readers) used in typical environments (range and farm, humid and arid, temperature extremes, large flocks and small). A third party would do this evaluation.

Overall goal -- to identify a set of components that will both work and be seen to work in the current environments (farm, range, feedlot/pastures, auction markets, commercial transport,

slaughter plant)—and do so without unduly interfering with the normal movement of animals around the USA.

Components to be tested and proven:

1. RFID ear tags, implants, and boluses from commercial sources
2. RFID handheld readers
3. RFID antenna/readers from commercial sources
4. Animal types in which to test the components
 - i. Range ewes and rams
 - ii. Commercial farm flock ewes and rams
 - iii. Stud flock ewes and rams
 - iv. Hobby flock (including fiber) ewes and rams
5. Emphasis would be placed on addressing these issues:
 - i. What works in the primary field environments that will occur in a national system (and how well),
 - ii. What doesn't work well in any of the above environments,
 - iii. What needs improving,
 - iv. What pleases the co-operating users,
 - v. What frustrates them,
 - vi. Tag loss rates in the various environments
 - vii. Infection percentage and concerns from insertion of ear tags
 - viii. Tag reading percentage for the various tags in the range of reading systems.
 - ix. Recommended insertion sites in the ear or elsewhere
 - x. Recommended insertion/application time in animal's life
 - xi. Throughput rates – number of sheep read per hour
 - xii. Strategy for non-readable id in farm/ranch and market settings
6. Reader/antenna:
 - i. Durability in all weather and normal working conditions
 - ii. Ability to read tags from multiple sources (including tags with both FDX-B and HDX technology).
 - iii. Throughput in the field. How many animals can pass through/by the antenna per hour and be read accurately?
 - iv. Impact on animal flow in the various locations. How many/minute or hr. moved up the chute without the antenna? How many moved up the chute with the antenna(s) in place?
 - v. Effect on speed and accuracy when presented with varying sizes, ages, breeds of sheep and goats.
 - vi. Ability to cope with 110-120 volt AC power variations and battery input situations
 - vii. Ability to be set up in the field on a temporary basis for loading and unloading animals in isolated situations.

- viii. Ease of rapid repair/replacement if a reader or antenna fails for any reason.
- 7. User acceptability & "friendliness" of ID devices.
- 8. Ease/speed of installation
- 9. User evaluation of applicator comfort.
- 10. User acceptability of reader/antennas. User evaluations to be obtained from:
 - i. Auction markets
 - ii. Loading facilities (on/off semi trailers at sites other than slaughter plants and auction markets)
 - iii. On farm
 - iv. Entry point to slaughter plants
 - v. Shows/fair
- 11. Numbers on the ear tags:
 - i. Determination of valuable numbers to be printed on an RFID tag?
 - ii. How useful to the sheep industry is the visual individual ID number? Should the industry request that this be a larger size to make it more readable.
- 12. Suggested funding approach - direct USDA dollars through selected State Veterinarians with university personnel to conduct the field trials. Project to be in place by Oct 2004 dependent on funding so that evaluations can be made.
 - i. How should funds be allocated to each location for labor and materials?
 - ii. \$50,000 per trial site. For 5 locations that is a total of \$250,000 plus an additional \$30,000 to one lead university to summarize, analyze and report the collective findings of the five pilot projects. Grand total is \$280,000.
 - iii. Ask commercial entities to supply, free of charge, 1 handheld reader and 1 stationary reader/antenna per site
 - iv. Antenna/ readers beyond this amount desired by the trials will be provided at \$500 each re-imbusement to the company.
 - v. Initial installation of the readers at each primary trial site would include assistance from the source.
 - vi. Commercial sources to supply up to 500 tags/boluses for sheep of each design free of charge. Tags needed in excess of this amount will be provided at \$1 each – reimbursed by APHIS.
- 13. Trials to start on or before Oct. 1, 2004 - and continue through Mar 30, 2006 if sheep industry & APHIS deem necessary. Reports of progress sent monthly to the lead university and APHIS as well as to the sources of commercial equipment.
- 14. Timing of the switch from the current scrapie premises number-based system to the national ID system occurs when the national system is functioning fully. In the meantime, the users continue to install tags with the present premises numbering system.

Phase II.

- 1. If tests of RFID components suggests that a tracking system is practical and issues regarding payment are resolved, then the switch from solely visual to RFID/visual devices would begin

voluntarily in July 2005. They would become mandatory in July 2006 at which time no other form of official tag can be used. It can begin earlier on a voluntary basis if the first year of field trials suggest RFID tags are satisfactory to users in a range of circumstances and if APHIS will agree to pay for the RFID tag devices.

2. RFID devices to be printed with AIN number, premise ID number and other necessary information such as the state postal code. The visual ID will be necessary for accurate data recording during field necropsies and other scenarios where a reader isn't available.
3. Stationary readers and antennas can begin to be installed at official movement sites (markets, loading yards, packing plants) from July 2005 onwards. USDA or government entity will be expected to provide these devices. A training program to educate the primary users needs to be developed and made available prior to this time.

Phase III.

1. Based on the assumption that Phases I and II have progressed satisfactorily.
2. All sheep that move from premises to premises must now have official RFID tags in their ears.
3. Reporting movements via electronic data transfer to national database is now mandatory. Target date is July 2008.

Respectively submitted,

Sheep Species Working Group members

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

Mr. Bill Brennan
Iowa Lamb Corporation
Hawarden, IA

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

Mr. Paul Frischknecht
Producer
Manti, UT

Mr. David Greene
Producer
Whitehall, MD

Mr. Neil Hammerschmidt
USDA APHIS
Riverdale, MD

Dr. Lyndon Irwin
Producer
Bois D'Arc, MO

Dr. Cleon Kimberling
Extension Veterinarian
Fort Collins, CO

Ms. Judy Malone
American Sheep Industry Association
Centennial, CO

Dr. Chuck Palmer
Veterinary Medical Officer
Redding, CA

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
USDA APHIS
Scrapie Program Coordinator
Riverdale, MD

Ms. Linda Campbell
Goat Working Group Chair
Luray, VA

Affiliate members

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

Ms. Bonnie Kline
Colorado Wool Growers Association
Arvada, CO

Production Education and Research Council and Health
Committee
8:30-11:30
January 28, 2005
Bonanza C

- Overview of ARS sheep & wool programs—
(Dr. Antoinette Betschart, Associate Administrator USDA/ARS)
- Sheep Disease Research Programs at the Animal Disease Research Unit
(Dr. Don Knowles USDA/ARS/ADRU)
 - Scrapie Research--Dr. Janet Alverson and Dr. Katherine O'Rourke
USDA/ARS/ADRU
 - OPP Research--Dr. Lynn Herrmann USDA/ARS/ADRU
 - MCF Research--Dr. Hong Li USDA/ARS/ADRU
- National Research Council, Nutrient Requirements Series up-date, Minor
Use/Minor Species Drug Program up-date, Sheep & Wool Grant Programs
(Dr. Larry Miller USDA/CSREES)
- Overview of VS programs affecting sheep producers
(Dr. John Clifford, Deputy Administrator for Veterinary Services
USDA/APHIS)
- National Scrapie Eradication Program Progress
(Dr. Diane Sutton, USDA/APHIS/VS)
- National Animal Identification Up-date
(Dr. Cindy Wolf, National Sheep Representative)

Resolutions and Discussion