

Unit C: Field Records

Lesson 4: Sheep Production and Record Keeping

Student Learning Objectives:

Instruction in this lesson should result in students achieving the following objectives:

1. Understand the importance of record keeping in sheep production.
2. Understand the importance and methods of animal identification in sheep production.
3. Identify record keeping systems used in sheep production.
4. Complete different record keeping forms used in sheep production.

Recommended Teaching Time: 1 hour

Recommended Resources: The following resources may be useful in teaching this lesson:

Schoenian, Susan. *Identification and Record Keeping*.

<http://www.sheep101.info/201/recordkeeping.html>. Accessed 30 March 2009.

Animal Identification and Record Keeping. Ontario Sheep Marketing Agency.

<http://www.ontariosheep.org/Intro%20to%20Sheep%20Production/4.%20Animal%20Identification%20and%20Record%20Keeping.pdf>. Accessed 30 March 2009.

List of Equipment, Tools, Supplies, and Facilities:

- Writing surface
- PowerPoint Projector
- PowerPoint Slides
- Transparency Masters
- Copies of student worksheets

Terms: The following terms are presented in this lesson (shown in bold italics and on PowerPoint Slide 2):

- Culling
- Ear notch
- RFID

Interest Approach:

Lead the students in a brainstorming activity. Simply ask what type of record keeping systems do they know about? What types have they used on their own production facility? What types have they already learned about? Why does anyone keep records? What are the advantages? Bridge this discussion into the first objective.

SUMMARY OF CONTENT AND TEACHING STRATEGIES

Objective 1: Understand the importance of record keeping in sheep production.

Anticipated Problem: Why is record keeping in sheep production important?

(PowerPoint Slide 3)

- I. Maintaining performance records for your flock is one of the best management tools you can use to increase the efficiency of your operation.
 - A. Many types of records have a direct effect on profitability of the flock. All producers should keep some type of records.
 - B. Monitor basic statistics to indicate flock productivity.

(PowerPoint Slide 4)

- C. Keeping individual records also helps to keep track of medically treated animals.
- D. Records can also be used when making culling decisions. **Culling** is the removal of an animal, especially a sick or weak one, from a herd or flock.
- E. Some type of animal identification must be used.

Use TM: 4-1 to further the understanding of the importance of records. Begin a discussion about animal identification that connects the next objective.

Objective 2: Understand the importance and methods of animal identification in sheep production.

Anticipated Problem: What are the methods of animal identification in sheep production?

(PowerPoint Slide 5)

- II. Record keeping is an important aspect of sheep production.
 - A. Record keeping begins with animal identification.
 1. Permanent: the form of animal identification chosen must be permanent so the animal can be identified throughout its entire life.
 2. Resistant to loss or tearing: many forms of identification can be lost or torn from the animal's ear. Be sure to choose the form that is most resistant.
 3. Easy to read from a distance: in some cases, it is most convenient to look at a group of animals from a distance and still read the animal's identification.
 4. Easy to apply: whatever form of identification chosen must be simple for the producer to apply.

5. Provide information wanted: some producers appreciate more than just an animal identification number. Such information includes birth date, sire, dam, type of birth, etc.

(PowerPoint Slide 6)

- B. There are many methods used to identify sheep.
 1. Some may choose to ear tag, and in some cases, double tag their animals to offset the advantages and disadvantages of the different sizes and designs of tags.
 - a. Brass
 1. Ideal for small or newborn lambs
 2. Lightweight
 3. Difficult to read

(PowerPoint Slide 7)

- b. Plastic
 1. Easier to read without catching the animal
 2. Assorted colors
 3. Pre-stamped with numbers or blank
 4. Relatively high loss rate
 - c. DNA tags
 1. Remove ear tissue during tagging and store in a sealed, labeled tube for later use

(PowerPoint Slide 8)

- d. There are some common practices that coincide with tagging.
 1. Placement
 - a. Between the middle and lower cartilage of the ear
 - b. Far enough out to allow for future growth
 - c. Different ears for different birth type, sex of the lamb, breed, or sire. Some producers give information listed just by placement of tag.
 2. Provide other information
 - a. First number – animal's birth year
 - b. Different colors for different years, breeds, sires, owners
 - c. Name or prefix of owner can be written on the tag.

(PowerPoint Slide 9)

2. Tattoos are the most permanent form of animal identification.
 - a. Numbers and letters are made of needles which puncture small holes in the ears.
 - b. Ink is then applied to the holes so the numbers and letters are readable.
 - c. Disadvantage – difficult to read from a distance

(PowerPoint Slide 10)

3. Some producers may choose to ear notch their lambs.
 - a. An **ear notch** is a small V-shaped notch placed somewhere in the ear.
 - b. May be used in a universal coding system or one specific to that production facility.

- c. Used for simple differentiation and read from a distance, with some practice.

(PowerPoint Slide 11)

- 4. Electronic identification is becoming increasingly popular. **RFID** (radio frequency identification) technology is rapidly growing.
 - a. Electronic ear tags - microchip and coiled copper antenna is in a standard plastic ear tag
 - b. Microchips can be implanted under the skin of an animal or ingested by the animal. A microchip is an electronic chip with a miniature radio transponder and antenna.

(PowerPoint Slides 12 and 13)

- C. There are also forms of identification that is temporary.
 - 1. Paint brands are used for quick identification. Many producers will paint brand lambs with their parent's number. Heavy applications should be avoided to keep a high quality of wool.
 - 2. Paintsticks, chalks, and sprays have been created in different colors to assist in quick identification. These are often used on the back or head. This method of identification is often used to mark animals that are bred or may not be bred, have been vaccinated or have not, need to be sorted from the group or not, etc.

Use TM: 4-2 to review the goals that should be met by any animal identification system. To assist in discussing animal ear tags, use TM: 4-3. Use TM: 4-4 to discuss the other types of animal identification.

Objective 3: Identify record keeping systems used in sheep production.

Complete different record keeping forms used in sheep production.

Anticipated Problem: What types of record keeping systems are used in sheep production? How do you complete record keeping forms used in sheep production?

(PowerPoint Slide 14)

- III. There are many different types of record keeping systems used in sheep production. Some use very few points of information, while others are very in depth. When choosing a record keeping system, the producer must keep all production goals in mind. Before a record keeping system is put to use, the user must understand the information being asked for.

(PowerPoint Slide 15)

- A. Sire and dam
- B. Lambing date
- C. Sex of lambs
- D. ID of lambs
- E. Lambing ease
- F. Mothering ability
- G. Vigor of the lambs
- H. Birth weights of lambs
- I. Weaning weights

- J. 120-day weights
- K. Other records to meet production goals

Use TM: 4-5 to review the types of information used in record keeping systems. For further understanding, assign WS: 4-1 Ewe Record, WS: 4-2 Flock Health Record, WS: 4-3 Breeding Record, and WS: 4-4 Lamb Mortality Record.

Review/Summary: Focus the review and summary of the lesson around the student learning objectives (**PowerPoint Slide 16**). Call on students to explain the content associated with each objective.

Application: Application can involve one or more of the following student activities using attached lab sheets:

- WS: 4-1 Ewe Record**
- WS: 4-2 Flock Health Record**
- WS: 4-3 Breeding Record**
- WS: 4-4 Lamb Mortality Record**

Evaluation: Evaluation should focus on student achievement of the objectives for the lesson. Various techniques can be used, such as student performance on the application activity. A sample written test is included.

Answers to Sample Test:

Fill-in-the-blank

1. Ear notch
2. RFID
3. DNA tags
4. Paint brands *or* paintsticks *or* chalks *or* sprays

Short Answer

1. Use Objective 1 for scoring.
2. Use Objective 3 for scoring.

TM: 4-1

IMPORTANCE OF RECORDS

- Profitability
- Productivity
- Medical records
- Culling decisions
- Must use animal identification

ANIMAL IDENTIFICATION

Record keeping begins with animal identification

- Permanent
- Resistant to loss or tearing
- Easy to read from a distance
- Easy to apply
- Provide the information wanted

EAR TAGS

- Brass
 - Ideal for small or newborn lambs
 - Lightweight
 - Difficult to read
- Plastic
 - Easier to read without catching the animal
 - Assorted colors
 - Pre-stamped with numbers or blank
 - Relatively high loss rate
- DNA tags
 - Remove ear tissue during tagging and store in a sealed, labeled tube for later use
- Common practices
 - Placement
 - Provide other information



Brass Tag



Blank Plastic Tag



Plastic Tag

OTHER FORMS OF ANIMAL IDENTIFICATION

- Tattoos
 - Needles make small punctures in the ear
 - Ink is applied to holes

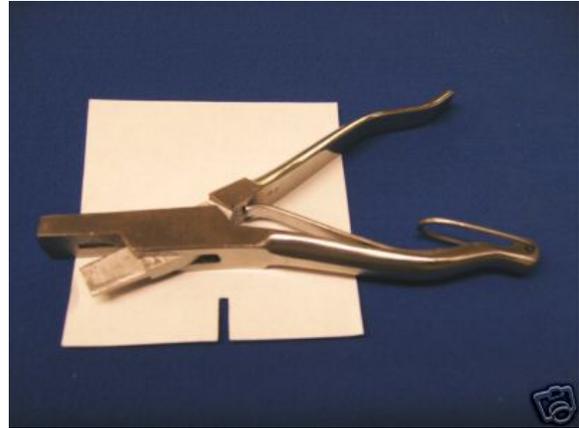
- Ear notches
 - Small v-shaped notch
 - Using a universal coding system or one specific to that production facility
 - Simple differentiation and can be read from a distance

- Electronic ID
 - RFID
 - Electronic ear tags
 - Microchips

- Paint brands
- Paintsticks, chalks, and sprays



Tattoo Set



Ear Notcher



RFID Tag



RFID Reader



Branding Set



Paint Sticks



Sprays

INFORMATION ON FORMS

- Sire and dam
- Lambing date
- Sex of lambs
- ID of lambs
- Lambing ease
- Mothering ability
- Vigor of lambs
- Birth weight of lambs
- Weaning weights
- 120-day weights
- Other records

Utilize the following story to fill in WS: 4-1.

The following record is for ewe number 627. This local-grown breed ewe was born on April 10, 2006. She was a twin out of 501 (sire) and 427 (dam). She weighed 2.7 kg at birth, 27 kg at weaning, and 56 kg at a year-old. This ewe is docile and a good milker.

She has lambed three times. Her first lambing was on March 3, 2007. She had twins – one ram lamb, one ewe lamb- and they were raised as twins. The ewe lamb weighed 3.2 kg at birth and the ram lamb weighed 3.1 kg. On May 7, 2007, the lambs were weaned. The ewe lamb's weaning weight was 32 kg and the ram lamb's was 31 kg. At one-year old, the ewe weighed 61 kg and the ram weighed 59 kg.

On March 18, 2008, 627 lambed again, but this time it was only one single ewe lamb. She weighed 3.8 kg at birth. On May 20, 2008, the ewe lamb was weaned and weighed 38 kg. At a year-old, the ewe weighed 65 kg.

627's most recent lambing was on April 2, 2009. She had twins – one ram lamb and one ewe lamb. The ram lamb weighed 3.5 kg at birth and the ewe lamb weighed 3.4 kg. On April, 10, 2009, the ram lamb died from pneumonia, leaving the ewe lamb to be raised as a single. She was weaned on June 5, 2009 and weighed 35 kg. At one year old, she weighed 62 kg.

Footnote: This story may not be an accurate representation of sheep production in Afghanistan. Please substitute real data if it is available.

LS KEY: 4-1

EWE RECORD

Ewe Identification: <u>627</u>	Breed: <u>local-grown</u>	Birth Date: <u>April 10, 2009</u>
Sire: <u>501</u>	Dam: <u>427</u>	Type of Birth: <u>Twin</u>
Birth Weight: <u>2.7 kg</u>	Weaning Weight: <u>27 kg</u>	Yearling Weight: <u>56 kg</u>
Comments: <u>Docile, good milker</u>		

Note: enter a new line for each lamb

Date Lambed	Sex of Lamb	Birth Weight	Type of Birth		Weaning Date	Weaning Weight	Yearling Weight	Comments
			Born As	Raised As				
<u>3-7-07</u>	<u>Ewe</u>	<u>3.2</u>	<u>TW</u>	<u>TW</u>	<u>5-7-07</u>	<u>32</u>	<u>61</u>	
<u>3-7-07</u>	<u>Ram</u>	<u>3.1</u>	<u>TW</u>	<u>TW</u>	<u>5-7-07</u>	<u>31</u>	<u>59</u>	
<u>3-18-08</u>	<u>Ewe</u>	<u>3.8</u>	<u>S</u>	<u>S</u>	<u>5-20-08</u>	<u>38</u>	<u>65</u>	
<u>4-2-09</u>	<u>Ram</u>	<u>3.5</u>	<u>TW</u>					<u>Died</u> <u>4-10-09</u> <u>pneumonia</u>
<u>4-2-09</u>	<u>Ewe</u>	<u>3.4</u>	<u>TW</u>	<u>S</u>	<u>6-5-09</u>	<u>35</u>	<u>62</u>	

Utilize the following story to fill in WS: 4-2.

Note: all the medications listed in this example may have withdrawal times. The bottle label will need to be looked at and examined for these dates. There is not one common practice.

On January 5, 2009, 782 and 604 were given overeating vaccination in prevention of overeating. On February 22, 2009, 556 and 638 had cuts from a loose gate, therefore they were given tetanus shots. On March 8, 2009, 721 was looking a little thin, so I wormed this ewe. On the same day, 766 was looking thin and was eating, so I also wormed her. On April 13, 2009, 615 and 549 had a fever, so I administered penicillin. On May 19, 2009, 623 and 772 were looking thin, so I wormed them. On June 21, 2009, 797 was not eating, so I wormed her. On the same day, 530 was looking thin and wasn't eating, so I wormed her.

Note: all the medications listed in this example may have withdrawal times. The bottle label will need to be looked at and examined for these dates. There is not one common practice.

Footnote: This story may not be an accurate representation of sheep production in Afghanistan. Please substitute real data if it is available.

LS KEY: 4-2

FLOCK HEALTH RECORD

Date	Animal ID	Condition/Signs	Treatment	Medication Withdrawal Date	Comments
<u>1-5-09</u>	<u>782</u>	<u>Preventative</u>	<u>Overeating</u>		
<u>1-5-09</u>	<u>604</u>	<u>Preventative</u>	<u>Overeating</u>		
<u>2-22-09</u>	<u>556</u>	<u>Cut</u>	<u>Tetanus</u>		
<u>2-22-09</u>	<u>638</u>	<u>Cut</u>	<u>Tetanus</u>		
<u>3-8-09</u>	<u>721</u>	<u>Thin</u>	<u>Wormer</u>		
<u>3-8-09</u>	<u>766</u>	<u>Thin, not eating</u>	<u>Wormer</u>		
<u>4-13-09</u>	<u>615</u>	<u>Fever</u>	<u>Penicillin</u>		
<u>4-13-09</u>	<u>549</u>	<u>fever</u>	<u>Penicillin</u>		
<u>5-19-09</u>	<u>623</u>	<u>Thin</u>	<u>Wormer</u>		
<u>5-19-09</u>	<u>772</u>	<u>Thin</u>	<u>Wormer</u>		
<u>6-21-09</u>	<u>797</u>	<u>Not eating</u>	<u>Wormer</u>		
<u>6-21-09</u>	<u>530</u>	<u>Thin, not eating</u>	<u>Wormer</u>		

Utilize the following story to fill in WS: 4-3.

The following is a breeding record for the local-grown breed ram number 501. He was born on March 7, 2005. He was exposed to ten ewes from October 1, 2009 to December 1, 2009. These ten ewes gave birth to 15 lambs with an average weaning weight of 32 kg and an average market weight of 63 kg.

Ewe 681 was exposed and marked during the 1st and 2nd cycle. She lambbed on April 5, 2009 with twins. Their average birth weight was 3.5 kg. Their average days to market was 152 with an average market weight of 62 kg.

Ewe 623 was exposed and marked during the 1st and 2nd cycle. She lambbed on March 22, 2009 with a single. This lamb weighed 3.7 kg at birth. This lamb's days to market was 149 with a market weight of 61 kg.

Ewe 652 was exposed during the 1st and 2nd cycle but marked only during the second cycle. She lambbed on April 7, 2009 with a single. This lamb weighed 3.1 kg at birth. This lamb's days to market was 147 with a market weight of 60 kg.

Ewe 717 was exposed during the 1st and 2nd cycle but marked only during the first cycle. She lambbed on March 1, 2009 with twins. Their average birth weight was 3.2 kg. Their average days to market was 151 with an average market weight of 63 kg.

Ewe 764 was exposed and marked during the 1st and 2nd cycle. She lambbed on March 6, 2009 with twins. Their average birth weight was 3.0 kg. Their average days to market was 152 with an average market weight of 64 kg.

Ewe 738 was exposed during the 1st and 2nd cycle but marked only during the second cycle. She lambbed on April 10, 2009 with a single. This lamb weighed 3.3 kg at birth. This lamb's days to market was 149 with a market weight of 62 kg.

Ewe 705 was exposed during the 1st and 2nd cycle but marked only during the second cycle. She lambbed on April 13, 2009 with twins. Their average birth weight was 3.4 kg. Their average days to market was 155 with an average market weight of 67 kg.

Ewe 890 was exposed during the 1st and 2nd cycle but marked only during the second cycle. She lambbed on April 15, 2009 with a single. This lamb weighed 3.8 kg at birth. This lamb's days to market was 148 with a market weight of 62 kg.

Ewe 846 was exposed during the 1st and 2nd cycle but marked only during the first cycle. She lambed on March 18, 2009 with a single. This lamb weighed 3.9 kg at birth. This lamb's days to market was 147 with a market weight of 65 kg.

Ewe 879 was exposed during the 1st and 2nd cycle but marked only during the second cycle. She lambed on April 25, 2009 with twins. Their average birth weight was 3.4 kg. Their average days to market was 154 with an average market weight of 63 kg.

Footnote: This story may not be an accurate representation of sheep production in Afghanistan. Please substitute real data if it is available.

LS KEY: 4-3

BREEDING RECORD

Ram Identification: <u>501</u>	Ram Breed: <u>local-grown</u>	Ram Birth Date: <u>3-7-05</u>
First day of breeding season (date ram turned out): <u>October 1, 2009</u>	Last day of breeding season: <u>December 1, 2009</u>	Total number of ewes (current breeding season): <u>10</u>
Lambing % (total live lambs/total ewes exposed): <u>15/10*100=150%</u>	Average weaning weight (all lambs): <u>32</u>	Average market weight (all lambs): <u>63</u>
Comments:		

Ewe ID	Marked 1 st cycle?	Marked 2 nd cycle?	Lambing date	# of lambs	Average birth weight	Average days to market	Average market weight	Comments
<u>681</u>	<u>YES</u>	<u>YES</u>	<u>4-5-09</u>	<u>2</u>	<u>3.5</u>	<u>152</u>	<u>62</u>	
<u>623</u>	<u>YES</u>	<u>YES</u>	<u>3-22-09</u>	<u>1</u>	<u>3.7</u>	<u>149</u>	<u>61</u>	
<u>652</u>	<u>NO</u>	<u>YES</u>	<u>4-7-09</u>	<u>1</u>	<u>3.1</u>	<u>147</u>	<u>60</u>	
<u>717</u>	<u>YES</u>	<u>NO</u>	<u>3-1-09</u>	<u>2</u>	<u>3.2</u>	<u>151</u>	<u>63</u>	
<u>764</u>	<u>YES</u>	<u>YES</u>	<u>3-6-09</u>	<u>2</u>	<u>3.0</u>	<u>152</u>	<u>64</u>	
<u>738</u>	<u>NO</u>	<u>YES</u>	<u>4-10-09</u>	<u>1</u>	<u>3.3</u>	<u>149</u>	<u>62</u>	
<u>705</u>	<u>NO</u>	<u>YES</u>	<u>4-13-09</u>	<u>2</u>	<u>3.4</u>	<u>155</u>	<u>67</u>	
<u>890</u>	<u>NO</u>	<u>YES</u>	<u>4-15</u>	<u>1</u>	<u>3.8</u>	<u>148</u>	<u>62</u>	
<u>846</u>	<u>YES</u>	<u>NO</u>	<u>3-18-09</u>	<u>1</u>	<u>3.9</u>	<u>147</u>	<u>65</u>	
<u>879</u>	<u>NO</u>	<u>YES</u>	<u>4-25-09</u>	<u>2</u>	<u>3.4</u>	<u>154</u>	<u>63</u>	

Utilize the following story to fill in WS: 4-4.

On January 13, 2009, sheep 314 died from an infection after having the symptom of a broken leg.

On January 22, 2009, sheep 537 died from a digestive problem after having the symptom of a fever.

On February 10, 2009, sheep 421 died from an infection after having the symptom of not eating.

On February 26, 2009, sheep 650 died from worms after having the symptom of being thin.

On March 9, 2009, sheep 741 died from a digestive problem after having the symptom of a fever.

On March 18, 2009, sheep 459 died from worms after having the symptom of not eating.

On April 5, 2009, sheep 515 died from an infection after having the symptom of limping and not eating.

On April 25, 2009, sheep 862 died from a digestive problem after having the symptom of not eating.

On May 7, 2009, sheep 828 died from an infection after having the symptom of a fever.

On May 21, 2009, sheep 396 died from old age after having the symptom of being thin.

On June 4, 2009, sheep 647 died from worms after having the symptom of being removed from the group.

On June 30, 2009, sheep 733 died from a digestive problem after having the symptom of a fever.

All animals had been weaned. The first number of the animal's identification number is the last digit in the year they were born.

Footnote: This story may not be an accurate representation of sheep production in Afghanistan. Please substitute real data if it is available.

LS KEY: 4-4

LAMB MORTALITY RECORD

Animal ID	Date of death	Age of lamb	Weaned (Y/N)	Prior signs of illness	Cause confirmed
<u>314</u>	<u>1-13-09</u>	<u>6 yrs</u>	<u>Yes</u>	<u>Broken leg</u>	<u>Infection</u>
<u>537</u>	<u>1-22-09</u>	<u>4 yrs</u>	<u>Yes</u>	<u>Fever</u>	<u>Digestive problem</u>
<u>421</u>	<u>2-10-09</u>	<u>5 yrs</u>	<u>Yes</u>	<u>Not eating</u>	<u>Infection</u>
<u>650</u>	<u>2-26-09</u>	<u>3 yrs</u>	<u>Yes</u>	<u>Thin</u>	<u>Worms</u>
<u>741</u>	<u>3-9-09</u>	<u>2 yrs</u>	<u>Yes</u>	<u>Fever</u>	<u>Digestive problem</u>
<u>459</u>	<u>3-18-09</u>	<u>5 yrs</u>	<u>Yes</u>	<u>Not eating</u>	<u>Worms</u>
<u>515</u>	<u>4-5-09</u>	<u>4 yrs</u>	<u>Yes</u>	<u>Limping, not eating</u>	<u>infection</u>
<u>862</u>	<u>4-25-09</u>	<u>1 yr</u>	<u>Yes</u>	<u>Not eating</u>	<u>Digestive problem</u>
<u>828</u>	<u>5-7-09</u>	<u>1 yr</u>	<u>Yes</u>	<u>Fever</u>	<u>Infection</u>
<u>396</u>	<u>5-21-09</u>	<u>6 yrs</u>	<u>Yes</u>	<u>Thin</u>	<u>Old age</u>
<u>647</u>	<u>6-4-09</u>	<u>3 yrs</u>	<u>Yes</u>	<u>Removed from the group</u>	<u>Worms</u>
<u>733</u>	<u>6-30-09</u>	<u>2 yrs</u>	<u>Yes</u>	<u>Fever</u>	<u>Digestive problem</u>