

Unit E: Other Poultry

Lesson 1: Exploring the Goose Industry

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

1. Describe the types of geese raised in Afghanistan.
2. Explain how to feed geese.
3. Manage the breeding geese flock.

Recommended Teaching Time: 2 hours

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

- A PowerPoint has also been developed for use with this lesson plan
- <http://www.extension.umn.edu/distribution/livestocksystems/DI1190.html>
- http://en.wikipedia.org/wiki/Chinese_goose
- <ftp://ftp.fao.org/docrep/fao/005/y4359E/y4359E00.pdf>

List of Equipment, Tools, Supplies, and Facilities

Writing surface
PowerPoint Projector
PowerPoint Slides
Live geese (optional)
Copies of Student Worksheets

Interest Approach: Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. A possible approach is included here.

Show a picture of a goose (PowerPoint slide #2) or bring a goose into the classroom. Ask the class to brainstorm ideas about how geese are different and similar to other poultry. Discuss items such as feed, housing and growth. Use this discussion to lead into Objective #1.

Summary of Content and Teaching Strategies

Objective 1: Describe the types of geese raised in Afghanistan.
(PowerPoint Slide #3)

- I. Throughout the world there are about 60 distinct breeds of geese that belong to the *Anatidae* family.
 - A. Geese were first domesticated about 6000 years ago by the Chinese.
 1. About 3000 years ago, the Egyptians domesticated wild types of geese.

- B. Geese are not commonly raised in Afghanistan, as only about 2% of the population does so.

(PowerPoint Slide #4)

- C. Common breeds that are found in Afghanistan include the following:

1. The Chinese
 - a. This breed exists in two colors: white and brown.
 - b. As its name implies, it originated in China and descended from the wild swan goose.
 - c. A distinctive feature of the Chinese goose is a knob found on its beak.
 - d. Adult ganders will weigh about 5.4 kg while the adult goose weighs about 4.5 kg.
 - e. In other parts of the world, the Chinese is popular as an exhibition and ornamental breed.

(PowerPoint Slide #5) This slide shows a picture of a Chinese goose. Notice the two colors and also the large knob on its beak.

(PowerPoint Slide #6)

2. The Pilgrim
 - a. The male Pilgrim is white and the female is gray and white.
 - b. The adult gander weighs about 6.4 kg and the adult goose weighs about 5.9 kg.

(PowerPoint Slide #7) This slide shows Pilgrim geese. Shown is the white male and the gray and white female.

(PowerPoint Slide #8)

3. Afghanistan also has a lot of common local breeds which are the result of breeding between varieties and wild types.

(PowerPoint Slide #9)

- D. Other common breeds throughout the world include:

1. The Toulouse
 - a. This goose originated in France
 - i. It is dark gray with a white abdomen.
 - ii. It has a dewlap, or a fold of skin that hangs down from the throat.
 - iii. It has a pale orange bill with deep reddish-orange shanks and toes.
 - iv. Its eyes are hazel.
 - b. The adult gander weighs about 11.8 kg and the adult goose weighs about 9.1 kg

(PowerPoint Slide #10) This slide shows Toulouse geese. Notice the dewlap on its throat.

(PowerPoint Slide #11)

2. The Embden
 - a. This is a white breed that originated in Germany.
 - b. Their weights are similar to that of the Toulouse.

(PowerPoint Slide #12) This slide shows a picture of a Embden goose.

(PowerPoint Slide #13)

3. The African
 - a. This breed is gray with a brown shade.
 - i. The head is light brown and the eyes are dark brown.
 - b. It had a knob on its beak and also has a dewlap.
 - i. The knob and bill are black.
 - c. The adult gander will weigh about 9.1 kg and the adult goose will weigh about 8.2 kg.

(PowerPoint Slide #14) This slide shows a picture of African geese. Notice the knobs and dewlaps.

Provide students with copies of **WS: E1-1** and colored pencils or crayons. Have the students color a sheet for the goose and gander of Chinese and Pilgrim breeds. On another sheet allow them to pick between a Toulouse, Embden, African or other common breed of Afghanistan. The coloring does not have to be exact, as long as they get the main body color, eye color and any colors significant to the breed. They should color for both goose and gander of the breeds. Show the pictures in the PowerPoint to the students as they need in order to refresh their memory.

Objective 2: Explain how to feed geese.

(PowerPoint Slide #15)

- II. Feeding geese is similar to other poultry.
 - A. Goslings should have feed and drinking water when they are started under the brooder or hen.
 - 1. Use waterers the birds can't get into to prevent losses from chilling.
 - 2. Waterers should be wide and deep enough for the bird to dip both bill and head.
 - 3. Pans or troughs with wire guards are satisfactory.
 - 4. They should be placed over screened platforms to aid in keeping litter dry.
 - 5. Change waterers or adjust size as birds grow.

(PowerPoint Slide #16)

- B. Feeds formulated for goose feeding programs are not normally available from commercial suppliers.
- C. Goslings can be started on a crumbled or pelleted chick starter.
 - 1. Place feed the first few days on egg case flats or other rough paper.
 - 2. Use the same type of feeders as used for chicks, changing type or adjusting size as the birds grow.
 - 3. Keep feed before the birds at all times and provide insoluble grit.

(PowerPoint Slide #17)

- D. After the first 2-3 weeks, a pelleted chick grower ration can be fed, supplemented with a cracked grain.
- E. Geese are quite hardy and not susceptible to many of the common poultry diseases so medicated feed is not generally necessary.
 - 1. Certain coccidiostats used in starting and growing mashers may cause lameness or even death in goslings.

(PowerPoint Slide #18)

- F. Geese are excellent foragers.
 - 1. Good succulent pasture can be provided as early as the first week.
 - 2. By the time the birds are 5-6 weeks old, a good share of their feed can be from forage.
 - 3. Geese can be very selective and tend to pick out the palatable forages.
 - 4. They will reject alfalfa and narrow-leaved tough grasses and select more succulent grasses.
 - 5. Geese can't be grown satisfactorily on dried-out, mature pasture.
 - a. Corn or pea silage can be fed if available.

(PowerPoint Slide #19) This slide shows geese grazing. Notice that one goose is bathing in its water, which is not suggested.

(PowerPoint Slide #20)

- G. A hectare of pasture will support about 50 birds, depending on the size of the geese and pasture quality.
 - 1. A one meter woven wire fence will ordinarily confine the geese to the grazing area.

2. Be sure that the pasture areas and green feed have not had any chemical treatment that may be harmful to the birds.
3. The birds should be provided shade in hot weather.

(PowerPoint Slide #21)

- H. Although supplemental grain feeding of goslings is often continued after they have been established on good pasture, many flocks are raised on green feed alone during the pasture period.

(PowerPoint Slide #22)

- I. Geese to be marketed should be fed a turkey finishing or similar ration for 3-4 weeks before processing.
 1. Any birds saved for breeding stock should not be fattened.
 2. Farm geese are usually sold when they are 5-6 months old.
 3. They will weigh from 5 to 12 kilograms depending on the strain and breed.
 - a. Some young geese (also called green geese or junior geese) full-fed for rapid growth are also marketed at 4.5 to 5.4 kilograms when they are 10-13 weeks old.

(PowerPoint Slide #23)

4. For several weeks after this age geese have many pinfeathers which are difficult to remove during processing.
5. Growth of geese after 10-13 weeks is very slow compared with the rapid growth of the young gosling.

(PowerPoint Slide #24)

- J. Considerable attention has been given to the use of geese to control weeds in crops.
 1. One of the main reasons for the domestication of geese was for the control of weeds in crops.
 2. Development of more selective herbicides is reducing this practice.
 3. The problems in coordination of bird supply and management with weed and crop growth make goose weeding rather impractical for most producers.
 - a. It is also harder to control the birds' diet when they are foraging on weeds.

Refer back to the students' answers from the interest approach. Ask them if their ideas about how to raise geese were correct. Discuss again the differences between geese and other species of poultry.

Objective 3: Manage the breeding geese flock.

(PowerPoint Slide #25)

III. Selecting geese that appear healthy and have good traits will help improve your flock.

- A. Select geese that are vigorous and well developed, have shown rapid growth, and have compact meaty bodies.
 1. Matings should be made at least 1 month prior to the breeding season
 2. Larger breeds of geese usually mate best in pairs and trios.
 3. Ganders of some lighter breeds will mate satisfactorily with four or five females.
 4. Males will usually mate with the same females year after year.

(PowerPoint Slide #26)

- B. It is difficult to distinguish sex in geese except by examination of the reproductive organs. One method is as follows:
 1. Lift the goose by the neck and lay it on its back, either on a table or over your bended knee, with the tail pointed away from you.
 2. Move the tail end of the bird out over the edge so it can be readily bent downwards.

(PowerPoint Slide #27)

3. Then insert your pointer finger into the cloaca about half an inch and move it around in a circular manner several times to enlarge and relax the sphincter muscle which closes the opening.
4. Next, apply some pressure directly below and on the sides of the vent to evert or expose the sex organs.

(PowerPoint Slide #28) This slide shows a diagram of how to sex a goose and can be found in chapter 5 of <ftp://ftp.fao.org/docrep/fao/005/y4359E/y4359E00.pdf>

(PowerPoint Slide #29)

- C. In some birds the male organ is somewhat difficult to unsheath.
1. An inexperienced sexer may easily call a bird a female if, after slight pressure, the cork-screw-like male organ is not exposed.
 2. However, only the presence of a female genital eminence will positively identify a female.

(PowerPoint Slide #30)

- D. Geese do not do well if enclosed in a house.
1. They should be confined to a yard with a house for shelter protection during winter storms.
 2. When green pasture is not available, breeders can be maintained on roughage such as leafy clover or alfalfa hay, corn or pea silage, with a small amount of grain.
 3. If breeding stock becomes overly fat, poor fertility and hatchability may result.

(PowerPoint Slide #31)

- E. Start feeding a pelleted breeder ration at least a month before egg production is desired.
1. Provide water at all times, as well as a supply of oyster shell and grit.
 2. Lights in the breeder house can be used to stimulate earlier egg production if desired. Geese start laying in February or March and often lay until early
 3. summer. Nest boxes should be provided to aid in obtaining a maximum number of eggs and reduce the amount of cleaning required.

(PowerPoint Slide #32)

4. Boxes should be at least 40 centimeters square and built with partitions or spread some distance apart to reduce fighting.
5. Large boxes or barrels are frequently used for range nests.
6. The heavier geese lay from 20-50 eggs per season, depending on the amount of selection for egg production in the strain being raised.

(PowerPoint Slide #33)

- F. Eggs should be gathered twice daily, especially during cold weather.
1. They should be stored at 12.7°C and a relative humidity of 75 percent until set for hatching.
 2. Eggs should not be held for more than 7-10 days, and should be turned daily if kept more than a few days.

(PowerPoint Slide #34)

- G. The incubation period for eggs of most breeds of farm flock geese varies from 29-31 days.
1. Four to six eggs can be incubated under a setting hen and 10-12 under a goose.
 2. Mark the eggs so that they can be turned by hand twice daily if the setting hen does not turn them.
 - a. Better hatchability is reported by some growers if the eggs are lightly sprinkled or dipped in lukewarm water for half a minute daily during the last half of the incubation period.

(PowerPoint Slide #35) This slide shows a comparison between a chicken egg and a goose egg.

(PowerPoint Slide #36)

3. Remove goslings from the nest as they hatch, and keep them in a warm place until the youngest are several hours old.
4. Since it takes some time to complete the hatch, if the goslings aren't removed as hatched, the hen may desert the nest leaving with the hatched goslings before the hatch is completed.

(PowerPoint Slide #37)

- H. Goose eggs can be hatched in either still-air or forced-draft incubators.
1. Follow the instructions from the machine's manufacturer.
 2. You may increase the success of your hatching operation if you can talk with a person who has had success with machine incubation of goose eggs.

Find goose eggs to hatch in the classroom. Alternately, invite somebody who raises geese into the classroom to discuss their goose production methods.

Review/Summary: Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used to determine which objectives need to be reviewed or re-taught with a different approach. Questions on **PowerPoint Slide #38** can also be used.

Application: Have the students pick a breed of goose. The goose can be common to Afghanistan or grown anywhere in the world. Provide them with books and internet access and have them write a report about their goose breed. <ftp://ftp.fao.org/docrep/fao/005/y4359E/y4359E00.pdf> provides an excellent source of information regarding goose production throughout the world. A rubric is attached to this lesson (WS: E1-2) for grading purposes.

Evaluation: Evaluation should focus on student achievement of this lesson's objectives. A sample written test is attached.

Answers to Sample Test:

Part One: Matching

1. C
2. B
3. A
4. D

Part Two: True or False

5. T
6. T
7. F

Part Three: Short Answer

8. 2%
9. 5-6 months
10. Select geese that are vigorous and well developed, have shown rapid growth, and have compact meaty bodies

Test

Unit E Lesson 1: Exploring the Goose Industry

Part One: Matching

Instructions: Match the term with the correct response.

- A. Toulouse B. Embuden C. Chinese D. African

- _____ 1. The goose breed has a knob on its beak.
_____ 2. The male of this breed is white and the female is gray and white
_____ 3. This breed originated in France
_____ 4. This breed is gray and brown, and also has a knob on its beak and a dewlap.

Part Two: True or False

Instructions: If the statement is true write *T* in the blank, if it is false write *F* in the blank.

- _____ 5. Geese are quite hardy and not susceptible to many of the common poultry diseases so medicated feed is not generally necessary.
_____ 6. Geese are excellent foragers.
_____ 7. Geese can be sexed by looking at their eyes.

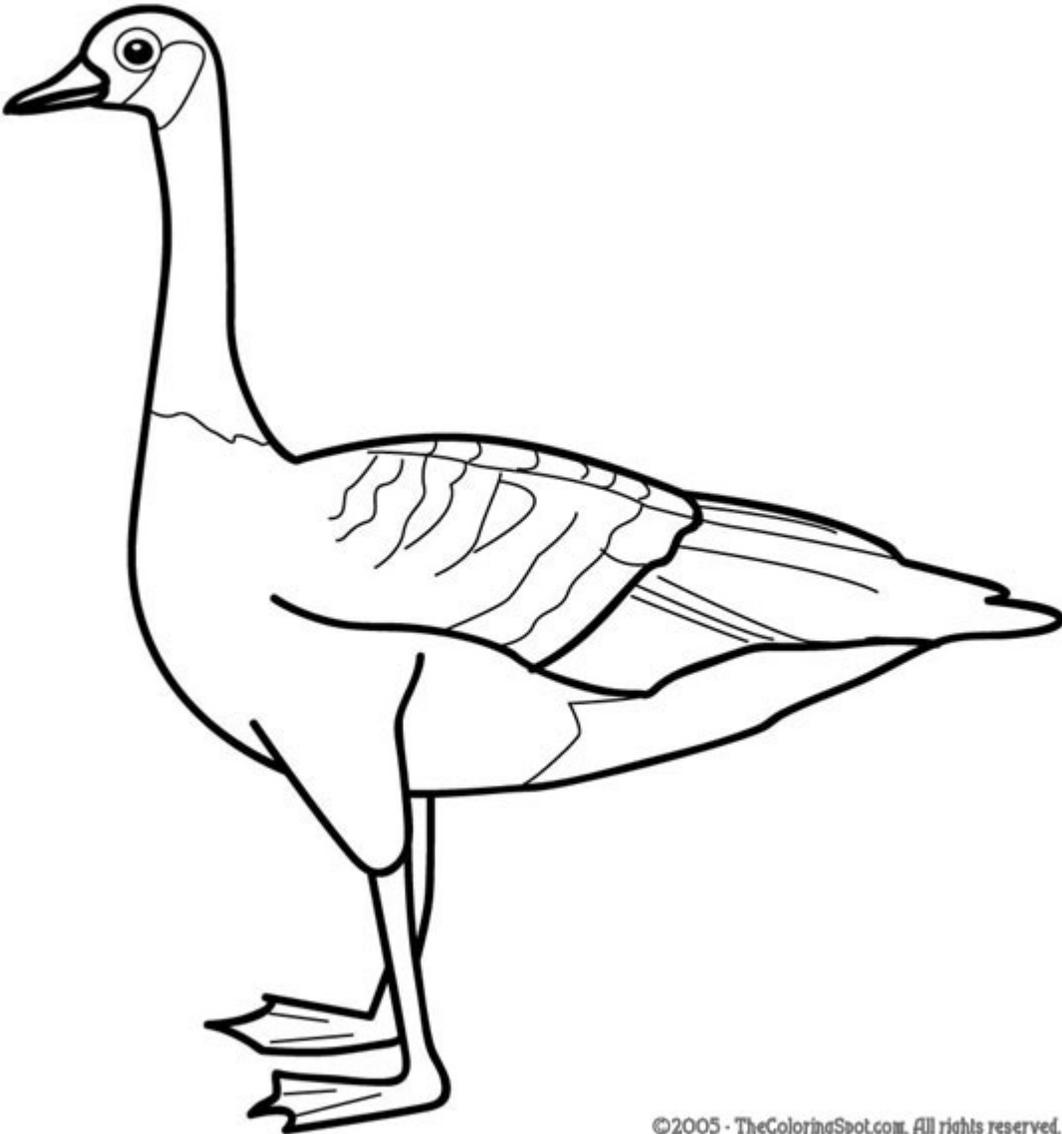
Part Three: Short Answer

Instructions: Provide a short statement to correctly answer the question.

8. What percentage of people in Afghanistan raise geese?

9. How old are geese when they are sold off of the farm?

10. When improving your flock, what are three factors to look for when choosing a goose?



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Goose Report Rubric

| Item | 3 | 2 | 1 | Total |
|---|---|---|--|-------|
| Breed Identified: -Latin and Common name -Origination | All information is included and detailed. | Information is included but is missing some detail | Missing important information or data | |
| Physical Characteristics -Color -Size -Weight | Discusses physical characteristics in depth for both goose and gander | Information is covered but some is missing | Missing most of the important information | |
| Breeding and Hatching -Differences between goose and gander -Requirements for egg hatching | Breeding and hatching is thoroughly discussed | Missing some pertinent information | Not covered extensively or missing information | |
| Feeding -Feed rations discussed -Feeds identified for different stages of development | All aspects of feeding are covered | Missing some pertinent information | Not covered extensively or missing information | |
| Report Mechanics -Sentence structure -Spelling -Grammar -Punctuation | Punctuation and capitalization are correct . | There is one error in punctuation and/or capitalization. | There are two or three errors in punctuation and/or capitalization. | |
| Picture | Pictures of goose, gander and gosling are shown. | Missing one of the three | Missing 2 of the three | |
| | | | | |