

Course	Agricultural Science I
Unit	Introduction to Poultry Production
Lesson	Selection and Evaluation
Estimated Time	50 minutes
Student Outcome	

Select and evaluate poultry.

Learning Objectives

1. Identify the parts of poultry.
2. Explain the criteria for broiler breeder poultry selection.
3. Explain the criteria for turkey breeder selection.
4. Explain the criteria for selection of commercial layers and pullets.
5. Explain the proper way to handle poultry during evaluation.

Grade Level Expectations

SC/LO/3/B/09-11/a SC/LO/3/E/09-11/a

Resources, Supplies & Equipment, and Supplemental Information

Resources

1. PowerPoint Slides
 - ☐ PPt 1 – Parts of a Chicken
 - ☐ PPt 2 – Parts of a Turkey
2. Activity Sheets
 - ☐ AS 1 – Identify Parts of a Chicken
 - ☐ AS 2 – Identify Parts of a Turkey
3. *Introduction to Poultry Production (Student Reference)*. University of Missouri-Columbia: Instructional Materials Laboratory, 1999.
4. *Introduction to Poultry Production Curriculum Enhancement*. University of Missouri-Columbia: Instructional Materials Laboratory, 2003.

Supplies & Equipment

- ☐ Two or more live birds of the same breed that show differences in quality (Use pictures if live birds are not available.)

Supplemental Information

1. Internet Sites
 - ☐ Wilson, Dave. "Poultry: A Guide to Anatomy and Selected Species." Information Technology and Communication Services Instructional Materials. University of Illinois. Accessed August 17, 2007, from <http://im.itcs.uiuc.edu/ak17supp.pdf>.
 - ☐ Smith, Tom W. "4-H Poultry Judging: Contest Classes and Scoring." Cooperative Extension Service. Mississippi State University. Accessed August 17, 2007, from <http://www.msstate.edu/dept/poultry/pub900.htm>.

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- ❑ "Poultry Publications." MU Extension. University of Missouri-Columbia. Accessed August 17, 2007, from <http://extension.missouri.edu/xplor/agguides/poultry/index.htm>.
2. Print
- ❑ Field, Thomas G., and Robert E. Taylor. *Scientific Farm Animal Production*, 6th ed. Upper Saddle River, N.J. Prentice Hall, 1998.
 - ❑ Gillespie, James R. *Modern Livestock and Poultry Production*, 5th Ed. Albany: Delmar, 1997.
 - ❑ Moreng, Robert E., and John S. Avens. *Poultry Science and Production*. Prospect Heights, Ill. Waverly Press, Inc. 1991.
 - ❑ *National 4-H Avian Bowl Manual*. Cooperative Extension Service, Clemson University. Clemson, NC. 1992.
 - ❑ *National Poultry Judging Manual*. National 4-H Poultry and Egg Conference Extension Committee. Nebraska Cooperative Extension. 1998.
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Interest Approach

Show two or more live birds of the same breed with different health and productivity characteristics. Use pictures if live birds are not available. Have students visually observe the two birds to determine which is a better producer and which appears healthier. Discuss factors that influenced their decision.

Communicate the Learning Objectives

1. Identify the parts of poultry.
2. Explain the criteria for broiler breeder poultry selection.
3. Explain the criteria for turkey breeder selection.
4. Explain the criteria for selection of commercial layers and pullets.
5. Explain the proper way to handle poultry during evaluation.


Instructor Directions	Content Outline
Objective 1 <i>Familiarize students with terminology used to identify parts of a chicken and parts of a turkey. Many of these terms are used when discussing the selection and evaluation of poultry. Show PPT 1 and PPT 2 to the class.</i> <input type="checkbox"/> PPT 1 – Parts of a Chicken	Identify the parts of poultry. Parts of a chicken <ol style="list-style-type: none">1. Head2. Comb3. Beak4. Wattle5. Neck6. Neck plumage7. Neck feathers8. Wing front9. Breast10. Wing bow11. Wing coverts12. Thigh13. Lower thigh plumage14. Toenails15. Web16. Toes17. Foot18. Shank19. Rear body feathers20. Primaries21. Secondaries22. Cushion23. Main tail feathers24. Tail coverts25. Back26. Cape27. Ear lobe

Instructor Directions	Content Outline
<p>☐ PPt 2 – Parts of a Turkey</p>	<p>28. Ear</p> <p>Parts of a turkey</p> <ol style="list-style-type: none"> 1. Head 2. Eye 3. Snood 4. Nostril 5. Beak 6. Fleshlike process 7. Wattles 8. Neck 9. Caruncle 10. Breast 11. Secondaries 12. Beard 13. Keel 14. Legs 15. Shank 16. Toes 17. Spur 18. Hock joint 19. Tail 20. Tail coverts 21. Wing coverts 22. Saddle 23. Back 24. Wing Bow 25. Shoulder 26. Cape 27. Ear
<p>Objective 2</p> <p><i>Discuss the economic importance of proper selection and culling of broiler poultry. Focus on breeding, large commercial flocks, and the backyard farm. Review the body parts that are important for evaluation of broiler breeders.</i></p>	<p>Explain the criteria for broiler breeder poultry selection.</p> <p>Broiler breeders are the parent stock used to produce hatching eggs for commercial broiler production.</p> <p>General health refers to indications of disease or abnormalities.</p> <ol style="list-style-type: none"> 1. Healthy bird <ol style="list-style-type: none"> a. Very vocal b. Eyes bright, rounded, and alert c. Comb and wattles bright red, smooth, sturdy, and have a waxy texture

Instructor Directions	Content Outline
	<ul style="list-style-type: none"> d. Feathers around vent (posterior opening, anus) clean and dry e. Body plumage close-fitting and clean <p>2. Unhealthy bird</p> <ul style="list-style-type: none"> a. Sluggish behavior b. Comb and wattles coarse, discolored, darker or lighter than normal c. Feathers around vent dirty and damp d. Feathers disarrayed <p>Body weight of offspring should be similar to the weight of the broilers' parents at seven weeks. Select only the larger birds at the seven-week evaluation.</p> <p>Conformation refers to the general shape of the bird.</p> <p>1. Preferred shape</p> <ul style="list-style-type: none"> a. Crescent-shaped back, broad breast, and upright head b. Feathers should lay well, be close-fitting, smooth, and unbroken c. Pinfeathers present and just coming through or still under the skin <p>2. Poor conformation</p> <ul style="list-style-type: none"> a. Wedge-shaped body, hunched back, crooked breasts, backs, and legs b. Twisted feathers, broken quills, bare spots on the skin c. Too many pinfeathers cause difficult removal during processing <p>3. Fleshing refers to the commercially important muscles</p> <ul style="list-style-type: none"> a. Quality shape bird has thick, rounded breasts, good tone down the length of the vertebrae, and thick meaty legs b. Poor quality bird has inverted breast that comes to a point at the keel, thin legs and back <p>4. Fat cover</p> <ul style="list-style-type: none"> a. When pinching the skin of the abdomen, hardness indicates good fat cover. b. When pinching the abdomen, softness indicates poor fat cover. Shown by thin skin over the abdominal area, where the thigh connects to the breast, or under areas of heavy feathers.

Instructor Directions	Content Outline
	<ol style="list-style-type: none"> 5. Degree of defects <ol style="list-style-type: none"> a. Defects result in downgrading b. Defects include insect bites, bruises, callouses or blisters on the breast, bare areas, and discolorations c. Can be caused by improper handling 6. General disqualifications <ol style="list-style-type: none"> a. Black feathers found in cockerels b. Green or black pigment found on the shanks c. Crooked toes (greater than 90-degree bend) d. Swollen hock joints e. Infected foot pads <p>Performance data is measured by growth rate.</p> <ol style="list-style-type: none"> 1. Rapid growth reduces time to market and results in feed consumption savings. 2. Positive growth rate reflects good breast width, body depth, and fleshing.
<p>Objective 3</p> <p><i>Discuss how turkey breeder selection is different from broiler breeder selection. Ask students to compare the different birds and their body parts.</i></p>	<p>Explain the criteria for turkey breeder selection.</p> <ol style="list-style-type: none"> 1. Criteria is similar to broiler breeder selection. 2. Conformation is important because turkey carcasses are often marketed whole and at higher weights. 3. Unhealthy turkey may have sagging caruncles. Caruncles are the fleshy protuberances on the naked portions of the head, face, and neck.
<p>Objective 4</p> <p><i>Discuss what a producer might look for in a commercial layer. Compare egg layers and pullets to meat-producing birds. Discuss the differences.</i></p>	<p>Explain the criteria for selection of commercial layers and pullets.</p> <p>Pigmentation is the loss of color and is referred to as bleaching.</p> <ol style="list-style-type: none"> 1. Layers lose yellow pigmentation from the skin and shanks as they lay eggs. 2. Pigmentation loss is a determining factor in the approximate number of eggs laid. 3. Bleaching occurs in this order: vent, eye ring, ear lobe, beak (corner of the mouth toward the tip), bottom of the feet, loss from front, back, and sides of shank, hock, and top of toes.

Instructor Directions	Content Outline
	<p>General health</p> <ol style="list-style-type: none"> 1. Productive hen <ol style="list-style-type: none"> a. Comb and wattles bright red, waxy, smooth, and full b. Bright, round eyes c. Eye lids and eye rings are bleached d. Beak bleached or in process of bleaching e. Supple and moist vent, fully bleached 2. Unproductive hen <ol style="list-style-type: none"> a. Comb and wattles scaly, small, and discolored b. Eyes droopy and sunk in c. Beak yellow d. Vent dry and yellow <p>Conformation determines high rate-of-lay.</p> <ol style="list-style-type: none"> 1. Good conformation <ol style="list-style-type: none"> a. Broad head, smooth face b. Large body capacity c. Soft and flexible abdomen d. Supple skin e. Flat, smooth shanks f. Pubic bone thin, flexible, and spread wide enough to fit two to four fingers between them 2. Poor conformation <ol style="list-style-type: none"> a. Long, crow-shaped head b. Thin back c. Poor body capacity d. Hard abdomen e. Leathery skin f. Round, scaly shanks g. Pubic bones close together and inflexible <p>Pullets are sexually mature chickens less than 22 weeks old.</p> <ol style="list-style-type: none"> 1. Selected by potential for high production in the future 2. Good comb and head development show signs of reaching sexual maturity 3. No sign of disease in healthy pullet 4. Eyes round and prominent with smooth head of a normal color 5. Strong, wide back; broad body; roomy heart girth 6. Smooth feathers with no bare spots 7. Skin color on the shanks normal for breed

Instructor Directions	Content Outline
	<p>8. Legs straight and even with no abnormalities in the feet and toes</p>
<p>Objective 5</p> <p><i>Explain the importance of proper handling of birds to avoid defects and injuries. If possible, demonstrate the proper way to handle a live chicken. Discuss why handling is necessary to accurately evaluate the quality of the bird.</i></p>	<p>Explain the proper way to handle poultry during evaluation.</p> <p>Provides ability to observe areas of the bird not observable from a standing position.</p> <p>Good control of the bird is necessary to reduce chance of getting away and causing injury.</p> <ol style="list-style-type: none"> 1. Put one hand on the back of the bird and gently pin the bird down. 2. Slide the other hand under the breast and rest in palm. 3. Place hand on back to hold wings down and steady the bird. 4. Place index finger between hocks. 5. Place thumb around one leg and fingers around the other leg. 6. Gently lift bird while keeping hand on back. 7. Hold the head down with back resting against examiner's stomach. <ol style="list-style-type: none"> a. Allows observation of the vent, abdominal capacity, and bleaching of feet and shanks. b. Pubic bones and softness of abdomen can be felt. c. Place fingers between keel bone and pubic bones to measure capacity. d. To check for molting, tuck hen under elbow and gently open the wing and count the feathers. 8. Return the bird to the coop with the breast in the palm and fingers holding the legs. 9. Place the bird in head first. 10. Be sure both feet are completely on the floor before releasing.
<p>Application</p> <p> AS 1 – Identify Parts of a Chicken</p>	<p>Answers to AS 1</p> <ol style="list-style-type: none"> 1. Head 2. Comb 3. Beak 4. Wattle 5. Neck 6. Neck plumage 7. Neck feathers

Instructor Directions	Content Outline
<p>📄 AS 2 – Identify Parts of a Turkey</p>	<ol style="list-style-type: none"> 8. Wing front 9. Breast 10. Wing bow 11. Wing coverts 12. Thigh 13. Lower thigh plumage 14. Toenails 15. Web 16. Toes 17. Foot 18. Shank 19. Rear body feathers 20. Primaries 21. Secondaries 22. Cushion 23. Main tail feathers 24. Tail coverts 25. Back 26. Cape 27. Ear lobe 28. Ear
	<p>Answers to AS 2</p> <ol style="list-style-type: none"> 1. Head 2. Eye 3. Snood 4. Nostril 5. Beak 6. Fleshlike process 7. Wattles 8. Neck 9. Caruncle 10. Breast 11. Secondaries 12. Beard 13. Keel 14. Legs 15. Shank 16. Toes 17. Spur 18. Hock joint 19. Tail 20. Tail coverts

Instructor Directions	Content Outline
	<ul style="list-style-type: none"> 21. Wing coverts 22. Saddle 23. Back 24. Wing Bow 25. Shoulder 26. Cape 27. Ear <p>Other activities</p> <ul style="list-style-type: none"> 1. Practice handling birds according to guildines. 2. Let students select and evaluate birds from live birds, if available, or pictures.
Closure/Summary	<p>Selection is very important to improving flocks. Criteria for selecting broiler breeders and turkeys are general health, body weight, conformation, and performance data. Criteria for selecting commercial layers are pigmentation, general health, and conformation. Criteria for selecting pullets are their potential to be highly productive laying hens, general health, and conformation. Handling techniques are very important to avoid injury and potential defects.</p>
Evaluation: Quiz	<p>Answers</p> <ul style="list-style-type: none"> 1. d 2. a 3. f 4. b 5. g 6. c 7. e 8. Any of the following three: general health, body weight, conformation, and performance data. 9. Conformation is most important because the turkey carcasses are often marketed whole and at higher weights. 10. Bleaching is the loss of pigment or color. By observing the amount of pigment in certain areas, one can determine whether the hen is productive. 11. The bird should be held facing the examiner with the head under the elbow. 12. The bird should be released head first with both feet completely on the floor before release.