

Music Series 117

COLORADO STATE BOARD
FOR
VOCATIONAL EDUCATION

RURAL WAR PRODUCTION TRAINING PROGRAM

Course No. 8

INCREASING EGG PRODUCTION

Prepared in

cooperation with the

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and issued by

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Teaching War Production Courses

The main purpose of the war production courses is to discuss with producers ways and means, and to assist them in outlining plans of action, by which the production goal can be reached in the shortest possible time and with the greatest efficiency.

Duration of Courses

All the production courses are to be planned to cover not less than twenty (20) hours of instruction extending over a period of not less than two weeks. Each meeting should be two hours in length. One meeting a week for ten weeks or five meetings a week for two weeks will meet these minimum requirements. Any arrangements of meetings within the above limits may be made. It may sometimes be desirable to hold a course a little longer than ten meetings. This is permissible providing the application for the course specifies the exact number of meetings. No course is to be extended beyond this specified number of meetings.

Determining the Course Content

Each course to be offered in this program must include only one of the commodities designated in the Rural War Production Program.

Before organizing a course the production situation of the critical farm commodity in the locality should be analyzed and the needs of the farmers determined.

In developing the course content emphasis should be placed on farm jobs and problems which lend themselves to an immediate increase in production. Some farmers may need to improve their feeding practices, some will need to use more sanitary measures, some will need to stress more careful management of their livestock and others will find it more desirable to improve other operations in the efficient production of the specific commodity made the basis of instruction of the course. Vegetable growers

may need to change the varieties grown; improve the fertility of their soils; plan ways and means of economizing on labor in harvesting and packaging their crops or improve other operations. Many changes are possible to bring about immediate increase of production.

By no means should a course be organized to cover all phases of the production and the marketing of one of the critical commodities in a general and informational way. On the other hand, the instructor should always have in mind the community practices which can be improved to secure greater or more efficient production. The instruction should, therefore, result in action on the part of each individual member of the class. This procedure definitely gears the instruction into meeting the present war needs.

Developing a Preliminary Outline of the Course

A preliminary outline of the course should be developed before the first meeting of the class. This outline will have to be made on a local community basis by each instructor.

In developing this outline he should confer with some of the leading producers in the community. It is possible that the advisory committee could be of assistance in this matter. In the second suggestive job of the outline on page 3, there is provided a scheme whereby the instructor can very definitely discover the problems that should be given emphasis in the course. The results of this meeting might naturally make some changes. However, it is always best to have a well developed plan before starting any undertaking.

A specific job or problem should be made the basis of instruction of each meeting. It is, also, very desirable in planning a course to finish at each meeting the subject taken up for discussion. Following this suggestion enables the instructor to start each meeting with a new job or problem. To aid an instructor in formulating a preliminary outline of a course there is presented on page 3 a suggestive outline of jobs and problems.

INCREASING EGG PRODUCTION

Suggestive Jobs and Problems

1. Why are we asked to increase egg production and what can we do about it?
2. Do we know the major things that should be considered in efficiently producing eggs for the market?
3. What can we do to make our poultry houses more comfortable?
4. What equipment should we provide in our poultry house to keep our flocks under good sanitary conditions?
5. Can we economically increase the size of our flocks?
6. Are we using the best and most economical feeds for our laying hens?
7. Can we improve our feeding practices?
8. What can we do to keep the laying flock healthy and free from pests?
9. Are we sure that all the hens in our flocks are good producers?
10. Are we getting all we should be getting for the eggs we are marketing?
11. Are we getting the best chicks for what we are paying?
12. Are we doing what needs to be done to cut down on chick mortality?
13. Are we efficiently taking care of the growing birds?
14. Are we sure that we are selecting only good pullets for the laying flocks?
15. What are some of the important things we should do to economically produce broilers, friers, and roasters?
16. Are we following a definite breed improvement program?
17. What are the important practices we should keep in mind to increase egg production?
18. What are some of the things others are doing that would help us produce eggs more efficiently?

Note: This is merely a suggestive outline, prepared to enable an instructor to select topics for ten to twelve meetings.

Making plans for each meeting

Careful planning in advance of each meeting is highly essential. The farmers attending the class will have had considerable experience in the production of the commodity under discussion. The experiences of the farmers supplemented by experiment station data presented by the instructor should furnish the basis for the farmers to determine the approved practices necessary in attaining the production goals. Unless a farmer gets something out of each meeting that will be a real help to him, it is doubtful if he will continue in the class. All of this puts a real responsibility upon the shoulders of the instructor. Most careful planning should enable him to better assume this responsibility.

This preparation for each meeting may consist of the following:

1. Listing motivating cues; that is, ways of arousing interest.
2. Writing a number of important key questions to direct the discussion.
3. Listing in condensed outline form important functioning facts or data.
4. Recording specific functioning references.
5. Deciding upon and securing worthwhile illustrative materials.
6. Determining where and how to use illustrative material most effectively.
7. Deciding upon the possibility of getting some person to give authoritative functioning data or facts that may help in clarifying discussions and in reaching decisions.

For instance, in suggestive Job 1, "The need for increasing production" of the commodity, the important questions to direct the discussion may be:

1. What are the production goals for the commodity for 1943?
(national, state and county)
2. Why is the increased production necessary?
3. What are the price prospects for 1943?
4. How efficient is our production?
5. Do we have a responsibility in trying to help more efficient production and increased production?
6. Can we or can we not increase production?

The conference procedure

The conference procedure is recognized as one of the most desirable methods of conducting classes with adult farmers who have had considerable experience in the production of the commodity made the basis of the instruction. To give farmers an opportunity to discuss their experiences and opinions when trying to solve a managerial problem is the purpose of the conference. The members of the group may want to decide upon the value of some practice; they may want to establish a standard way of doing something; they may want to agree upon some course of action; or they may want to correct some unsatisfactory practice. Whatever may be the immediate purpose, the collective judgment of the group on some problem is obtained through a general discussion. To this discussion the instructor or some authoritative person may add needed functioning facts obtained from experimental data or other reliable sources that should be considered in reaching a decision.

The conference serves only as an effective way for helping men to think straight on some problem or on deciding upon some action. It is not concerned with the development of doing abilities in which case the instruction procedure would be used. Nor is it essentially concerned with imparting information, in which case the informing procedure would be used. This latter statement does not mean, however, that the instructor or other selected person should not add important reliable functioning facts to the pool of experiences and opinions gathered from the group in reaching a decision on the problem under discussion. Decisions should come from the group, however, and not from the instructor who is essentially a leader of a discussion group and whose primary function is to guide and direct the discussions and particularly the thinking of the group.

The use of illustrative materials

At any meeting in which illustrative materials, such as strip films, pictures, charts and the like can have a functioning value, they should be used. This material may be used to present a preview, to clarify points or to confirm points developed in the discussions. These supplementary aids need careful selection and intelligent use. A list of available U. S. D. A. strip films is appended to this outline.

Demonstration

In many instances a demonstration by the instructor or by some other person may be very appropriate and helpful in clarifying some ideas developed in a discussion. Often, too, demonstrations can profitably be given while the group is on a field trip or tour to observe some approved practices.

Since emphasis of the course should be centered on practices leading to more efficient and increased production of the commodity made the basis of instruction, everything done in a class not specifically contributing to these ends should be excluded. Time consuming activities of a general nature need to be avoided if practical results are to be immediately attained in the little time given to a course.

Conducting the meeting

- Step 1. Begin the meetings on time and close them on the scheduled time. If some members wish to remain longer to further discuss some point, this is all right, but the class should be dismissed first.
- Step 2. Before starting a meeting it is an excellent idea to write on the upper part of the blackboard, in front of the group, the problem made the basis of discussion of the meeting. Doing this will greatly help in focusing and holding the attention to what was planned for the meeting. Cautiously side-tract irrelevant discussion and controversial questions. Let those who raised them remain after the group has been dismissed if they wish to discuss them.

- Step 3. Start off by clearly explaining the problem or question. Motivate it as best you can.
- Step 4. Put your first key question to the group. These key questions were to be part of the instructor's preparation for the meeting as previously suggested.
- Step 5. Get from the group facts, experiences, or cases pertaining to the question. This assembling of facts is the first phase of the conference procedure.
- Step 6. Record on the blackboard, whenever practicable, in the most condensed and outlined form, the essential functioning material presented. Add what may be needed to help out. This is the selection of functioning facts and the second phase of the conference procedure.
- Step 7. In some suitable way get an evaluation of the functioning facts. This is the third phase of the procedure.
- Step 8. Get from group members suggestions as to a solution or decision; and, if essential, get majority opinion. This is the fourth phase of the procedure. The development of a plan and the execution of a plan, the fifth and sixth phases, are individual matters, and are generally done outside of the meetings of the conference.
- Step 9. In a similar way try to bring the group to a decision in the other vital questions brought up in a meeting.
- Step 10. Before closing a meeting summarize the important questions that were discussed and the things agreed upon as a basis for action.

Follow-up work

Systematic follow-up work is an essential and necessary part of the War Production Program. The improved practices actually adopted, the improvements made in enterprise, and other results of the instruction needs to be known. Then, too, there is always an opportunity during supervision of rendering farmers additional assistance in carrying out their plans.

Attendance records

A record of the names of members of a War Production Class, together with the attendance of each must be kept and reported upon.

Some things to remember

1. There is a vital need for increasing the production of the commodities made the basis of instruction in the Rural War Production Training Program; namely,

Beef	Mutton, lamb and wool
Milk	Poultry for meat
Pork	Commercial vegetables
Eggs	Home garden vegetables

2. The production of these commodities can and must be increased.
3. The 1943 production goals for these commodities are much higher than they were for 1942.
4. This special rural training program for out-of-school rural youth and adults is an emergency measure that must be and can be an important factor in increasing the production of these critical commodities.
5. Food production goals can only be met if each farm and each community produces its share.
6. Instructors and producers must fully appreciate the need for increased production of these commodities.
7. Producers must have a wholehearted desire to help out in the situation as far as economically and physically possible.
8. Producers must analyze their utmost opportunities for more efficient production and for increasing the scope of their production wherever advisable.
9. Improved or most efficient methods will in nearly every instance increase production, and often with smaller units.
10. Losses due to diseases, pests, or management can be reduced and thus increase production.
11. A better quality of the product will increase production by preventing waste.
12. Ways and means of economizing on labor in production and in marketing can and must be worked out.
13. A greater use of labor saving devices is essential.

Film Strips and Kodachrome Slides on Poultry

U.S.D.A. FILM STRIPS

The following film strips can be purchased from the Photo Lab. Inc., 3825 Georgia Ave., N. W. Washington, D. C., at price indicated. When placing a purchase order, send a request to the Extension Service of the U.S. Department of Agriculture, Washington, D. C. asking for authorization of the sale and for the supplementary lecture notes. There is no charge for the latter. Authorization blanks can be secured from the local extension service if desired.

- No. 515 Eradicating tuberculosis from livestock and poultry. 36 frames -
50 cents
- No. 413 National poultry improvement plan. 48 frames - 50 cents
- No. 126 Selecting hens for egg production. 55 frames - 55 cents
- No. 133 Standard breed of poultry. 48 frames - 50 cents
- No. 271 Marketing of eggs in the United States. 53 frames - 55 cents
- No. 571 Preparing turkeys for market. 46 frames - 50 cents
- No. 574 Grading and packing turkeys. 46 frames - 50 cents
- No. 575 Turkey marketing today. 48 frames - 50 cents
- No. 560 Cooking poultry - young birds. 51 frames - 55 cents
- No. 561 Cooking poultry - older birds. 38 frames - 50 cents
- No. 239 Care of the laying flock. Make inquiries about this
- No. 234 Chicken lice and mites. " " " "
- Misc. Pub. No. 458, U.S.D.A., obtainable from the Division of Publications of the U.S.D.A., Washington, D. C., gives a complete list of film strips.

Other Film Strips

The College Photo Shop, Colorado State College, Fort Collins, has a large assortment of strip films which it rents. If interested, write for its circular - Visual Aid and Photographic Service.

Kodachrome Slides

The College Photo Shop has a very complete supply of Kodachrome Slides on all agricultural subjects. A set of about 50 slides can be made and rented as desired. These slides are colored and measure 2 x 2 inches. Then, too, it is possible to add one's own local pictures to a set. Kodachrome Slides are considered the very best visual aids in instruction.

Poultry Department Slides and Film Strips

The Poultry Department at Colorado State College, Fort Collins, has sets of slides (2 x 2) on housing, brooding, rearing and cost of production of chickens and on turkey raising which can be rented at a modest cost from this department.

All of the U.S.D.A. film strips on poultry are also available from the Poultry Department of Colorado State College on a rental basis.

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Reference Material

Bulletins

1. Poultry houses and fixtures. F. B. 1554
2. Building poultry laying houses. Colo. Ext. Bul. 371-A
3. Plans of farm buildings for Western States. Misc. Pub. 319, U.S.D.A. 60 cents. See copy in County Agent's Office. Blue prints can be purchased from Agriculture Extension Service, Fort Collins, at 10 cents per sheet.
4. Building electrical equipment for the farm. Bul. 209, Voc. Division, U. S. Office of Education.
5. Remodeling poultry houses. Colo. Extension Cir. 1844
6. Build a droppings pit. Colo. Ext. Cir. 1
7. Underground heating system for brooding. Colo. Ext. Cir. 7437-38
8. Feeding chickens. Colo. Ext. Bul. 366-A
9. Selection of feedstuffs for poultry. Colo. Ext. Bul. 367-A
10. Principles of poultry feeding. Colo. Ext. Cir. 1721
11. Diseases and parasites of poultry. F. B. 1652
12. Mites and lice on poultry. F. B. 801
13. Controlling diseases and parasites of poultry. Colo. Ext. Bul. 369-A
14. Some common disinfectants. F. B. 926
15. Pullorum disease. Colo. Ext. Bul. 372-A
16. Selecting hens for egg production. F. B. 1727
17. Business records for poultry keepers. F. B. 1614
18. Standard breeds and varieties of chickens. Part 1, F. B. 1506
19. Marketing eggs. F. B. 1378
20. Production and marketing of quality eggs. (From Conn. Poultryman's Handbook, 1939. Poultry Department, Colorado State College.)
21. Colorado egg and poultry laws. Director of Mkts., Office, Denver
22. Chick brooding rules. Colo. Ext. Cir. 1688
23. Capons and Caponizing. F. B. 849
24. Marketing poultry. F. B. 1377
25. Circulars on chicken and turkey preparation - Colo. Poultry Improvement Board, Ft. Collins.
26. A practical poultry improvement program for Colo. Colo. Ext. Circ. 159
27. The national poultry improvement plan. Misc. Pub. 300, U.S.D.A.

Books

1. Poultry. Science and Practice. Winter and Funk. J.B. Lippincott, \$4
2. Poultry Production. Lippincott & Card, 6th edition, Lea and Febiger
3. Commercial poultry farming. Charles and Stuart. The Interstate Printers and Publishers; Danville, Ill. \$3.20
4. Practical poultry management, 4th ed. Rice and Botsford. John Wiley and Sons. \$2.75
5. Poultry husbandry. Jull. McGraw-Hill Book Co. \$4
6. Keeping livestock healthy. 1942 Yearbook, U.S.D.A. Secure a free copy from your Senator or Representative in Congress.
7. Food and life. 1939 Yearbook, U.S.D.A.
8. List of poultry publications and journals. Poultry Dept. Colorado State College.

Note: F.B.(Farmers' Bulletins) are issued by the U.S.Department of Agriculture and are obtainable from county agents, Bulletin Mailing Room, Colo. Ext. Service, Fort Collins, and from your Senator or Representative, Washington, D. C.

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Teaching Suggestions and Aids for Meetings

1. Why are we asked to increase egg production and what can we do about it?
 - a. Since this is the first meeting be sure to get group acquainted.
 - b. Explain purpose of course and nature of meetings.
 - c. Explain the "Conference Procedure." See page 5.
 - d. Obtain data from County Committee on 1943 egg production goals and record these on blackboard.
 - e. Compare with 1942 estimated production.
 - f. Determine the per cent of increase for 1943.
 - g. A simple survey of group showing average egg production per hen might have a value here.
 - h. Bring out these facts:
 1. Estimated production in Colorado is 106 eggs per hen.
 2. A fair standard of production is 140 to 150 eggs per hen.
 3. A good standard of production is 160 to 175 eggs per hen.
 - i. What is the market outlook for eggs and poultry?
 - j. Can we produce more eggs?
 - k. For specific outlook material see:

The Poultry and Egg Situation, Bureau of Agric. Economics, U.S.D.A., (monthly)

Poultry and Egg Production, Bureau of Agric. Economics, U.S.D.A., (monthly)

Farm Production, farm disposition and income. (Chickens and Eggs), Agric. Marketing Service, U.S.D.A. Issued annually in April.

Poultry Outlook (Figures and charts). Bureau of Agric. Economics, U.S.D.A.

2. Do we know the major things that should be considered in efficiently producing eggs for the market?
 - a. This job might be taken up with Job 1.
 - b. Secure factors from group and record on blackboard. Suggest others to complete list. In general these are in line with the list of problems on page 3.
 - c. Make a table showing extent to which these factors are operating favorably or unfavorably.
 - d. Determine the factors which should be given special attention in the course. These should largely determine the course content.

3. What can we do to make our poultry houses more comfortable?
- a. Could start out by showing pictures of poultry houses and merely pointing out some good or bad features.
 - b. Develop essentials of a good house. If necessary add others to complete list.
 1. Economical construction: Type of house
 2. Ample light
 3. Proper ventilation
 4. Adequate floor space
 5. Convenient interior arrangement
 6. Sanitary droppings pit
 7. Proper depth and height
 - c. How efficiently are we housing our poultry flocks? What seems to be wrong?
 - d. What improvement can we make in our poultry houses to have them more comfortable?
 - e. If some members are interested in building or extensively remodeling the old poultry house see that they are supplied with proper aids. If problem is of interest to entire group, take this up at a meeting.
 - f. Write to the Poultry Dept., Colo. State College., Fort Collins, on best types of poultry houses and equipment for Colorado.
 - g. See:
 - Colorado Extension Service Bul. 371-A, Poultry Laying House.
 - Colorado Extension Service Cir. 1844, Remodeling Poultry Houses.
 - Poultry Science and Practice by Winter and Funk, Chapter 8.
 - Plans for farm buildings for the Western States. Misc.Pub. 319 - U.S.D.A.
4. What equipment should we provide in our poultry house to keep our flocks under good sanitary conditions?
- a. Some of these are:
 1. Nests
 2. Feeders
 3. Droppings pit
 4. Waterers
 5. Flooring
 - b. Pool experiences of group in regard to each of the above items and determine the success they have with each and how these might be improved.
 - c. If possible show slides or film illustrating suitable type of interior equipment and arrangements.
 - d. Some approved practices:
 1. One nest for each 4 to 5 layers.
 2. One foot of feeder space for each 3 to 4 hens.
 3. Eight inches of roost space for Leghorns and ten inches for heavier breeds.
 4. A ten quart water pail or equivalent for each 40 birds.
 5. An oyster shell or limestone-grit hopper for each mash hopper.
 - e. See:
 - Poultry Science and Practice, Winter and Funk, Chapter 8.
 - F. B. 1554 Poultry Houses and Fixtures.
 - Voc. Ed. Bul. 209, U. S. Office of Education, Building Electrical Equipment for the Farm. Has plans for making an electric poultry water warmer.

5. Can we economically increase the size of our flocks?
- a. Is present flock large enough to use available labor efficiently?
 - b. Is sufficient labor available on the farm for caring for an increased flock?
 - c. Are present poultry housing facilities used to their full capacity?
Leghorn require 3 to $3\frac{1}{2}$ sq. ft. of floor space per hen; heavier breeds $3\frac{1}{2}$ to 4.
 - d. Could some building be economically remodeled to house comfortably a flock increase?
 - e. Illustrate on blackboard simple ways of remodeling poultry houses to take care of an increase.
See: Colorado Extension Service, Cir. 1844, Remodeling Poultry Houses.
 - f. Discuss with the group the future outlooks for poultry expansion:
 - Demand
 - Prices
 - Transportation
 - Feed availability
 - Feed costs
 - Markets
 - g. For outlook facts see references listed under Job. 1.
 - h. Refer to sheet 9 on special poultry slides and films.

6. Are we using the best and most economical feeds for our laying hens?
- a. Develop the essential nutrients:
 - Water
 - Carbohydrates
 - Fats
 - Proteins
 - Mineral
 - Vitamins
 - b. Develop on blackboard a table showing functions of the nutrient and the sources of these in poultry feeds. See page 262, Poultry Sciences and Practice.
 - c. Make a comparison of the composition of a grain, such as barley, with that of eggs and the body of chickens, to show the inadequacy of feeding only grain. See Colo. Ext. Circ. 1721, page 4.
 - d. List on blackboard grains fed in scratch mixtures and evaluate them.
 - e. Make a study of the constituents of dry mashes being fed and evaluate them.
 - f. Develop one or two of scratch mixtures making greatest use of local grains.
 - g. Develop one or two economically suitable mashes. If this is done in advance the Poultry Depot at C.S.C. will gladly check the mash.
 - h. Make a study of available commercial mashes.
 - i. Have on hand samples of all different kinds of poultry feeds.
 - j. Give a demonstration in mixing a mash.

7. Can we improve our poultry feeding practices?
- a. Determine experiences of group in methods of feeding grain mixtures and evaluate practices.
 - b. Determine experiences of group in feeding dry mash and evaluate them.
 - c. Develop ways and means used by group in preventing waste of dry mash.
 - d. Determine experiences of group in feeding minerals, green feed, skim milk, and supplying drinking water.
 - e. For feeding schedules see:
 - Colorado Extension Service Bul. 366-A, Feeding Chickens.
 - Colorado Extension Service Cir. 1721, Principles of Poultry Feeding.
 - Poultry Science and Practice, Chapter 10.
 - f. Discuss the advantages and disadvantages of range versus confinement for laying hens.
 - g. Try to have on hand samples of feeding and watering equipment.
 - h. One could, also, use visual aids in this job.
 - i. Refer to Chapter 9 and 10, Poultry Science and Practice.
8. What can we do to keep our laying flock healthy and free from pests.
- a. Some important points:
 1. Good management practices stressing prevention.
 2. Do not allow litter to become filthy.
 3. Install droppings pit under roosts.
 4. Clean and disinfect waterers at least once a week.
 5. A healthy flock means more eggs, more meat and more profits.
 - b. Some common poultry diseases are:
 1. Range paralysis
 2. Colds
 3. Fowl pox
 4. Tuberculosis
 5. Infectious bronchitis
 6. Pullorum
 7. Laryngotracheitis (L.T.)
 - c. Determine from group symptoms of diseases that have occurred in their laying flocks.
 - d. Try to identify the diseases, bring out probable causes and methods of control.
 - e. Some common parasites are:
 1. Body lice
 2. Head lice
 3. Scaly leg mites
 4. Red mites
 5. Round and tape worms
 - f. Determine the parasites that have caused trouble and develop control measures.
 - g. See:
 - Colo. Ext. Bul. 369-A on poultry diseases and parasites.
 - F. B. 1652 on diseases and parasites of poultry.
 - Colo. Ext. Bul. 372-A, Pullorum disease.

9. Are we sure that all the hens in our flocks are good producers?
 - a. Bring out importance of year-round culling:
 1. Saves feed
 2. Saves labor
 3. Allows more room for good producers
 4. Increases profits
 - b. Have on hand a good, fair and poor producer and give a demonstration on culling. Let each member of group handle the birds.
 - c. Develop on blackboard the things that were discovered about each of the three birds handled.
 - d. Summarize characteristics of good layers.
 - e. This job lends itself to use of visual aids. See page 9 for list of film strips and slides.
 - f. Send for culling chart published by feed companies.
 - g. See:
F. B. 1727, Selecting hens for egg production
Poultry Science and Practice, Chapter 5.

10. Are we getting all we should be getting for eggs we are marketing?
 - a. Pool experiences of group on how and where they are marketing eggs and the prices they receive.
 - b. Determine problems group have in marketing eggs.
 - c. Give a demonstration on candling and grading eggs.
 - d. Determine causes of poor egg quality.
 - e. Determine ways and means of producing high quality eggs.
 - f. Pool opinions of group on ways and means of improving marketing practices, and economizing on labor in marketing.
 - g. Is the Egg Law or the marketing system or the farmer at fault for marketing problems?
 - h. Secure from Colo. Director of Markets, State Museum Building, Denver, Colorado, copy of regulations governing the marketing of eggs and, also, chart on "Learn to Candle and Grade Your Eggs."
 - i. Send to Poultry Dept., Colo. State College for loan of chart on grades of eggs and their uses in learning candling.

11. Are we getting the best chicks for what we are paying?
 - a. Get group to relate where chicks are purchased, prices paid, and results obtained.
 - b. From group get information on breeds raised and success with the breeds.
 - c. Record on blackboard chick troubles the group has encountered and determine extent to which these are due to sources of chicks and prices paid.
 - d. Some factors to consider in purchasing chicks.
 1. Is hatchery operating under the U. S. National Poultry Improvement Plan?
 2. In what stages of breed improvement and Pullorum control is the hatchery participating?
 - e. Send for copy of chart on "Where to buy Colorado - U. S. Chicks." Colorado Poultry Improvement Board, Fort Collins, Colo.
 - f. See:
 - Colorado Extension Bul., 372-A, Pullorum Disease
 - Colorado Extension Cir. 1591, A Practical breed improvement program for Colorado.

12. Are we doing what needs to be done to cut down on chick mortality?
 - a. Some factors in brooding chicks are:

1. Adequate housing	5. Moisture
2. Adequate equipment in good working order	6. Sanitation
3. Temperature	7. Floor space
4. Ventilation	8. Feeding
 - b. Discover which of these factors the group desires to discuss and take them up.
 - c. Obtain from group members mortality losses.
 - d. Analyze a few cases of high mortality loss to discover possible cause.
 - e. A discussion of brooder house types and construction may be valuable.
 - f. This job lends itself to the use of visual aids.
 - g. Secure copies of Colo. Ext. Service Cir. 1688 on chick brooding rules for each member of the group.

13. Are we efficiently taking care of the growing birds?
- a. Pool experiences of members of group on how they care for their growing stock.
 1. Do they let young birds run with old birds?
 2. Do they keep them on a clean new range each year?
 3. Do they provide ample, proper feed and water?
 4. Do they provide for shade?
 5. Do they provide roosts when birds are 4 week old?
 - b. Have a discussion on what constitutes a good range on which to grow chickens.
 - c. Pool experiences of group on controlling external and internal parasites of growing birds.
 - d. Pool experiences on use of and success with different kinds of colony houses and range shelters.
 - e. If possible have on hand, for demonstration, watering and feeding devices.
 - f. Discuss the immediate separation of sickly, unthrifty and undersized birds from the flock as soon as observed.
 - g. Are the sexes being separated as early as possible.
 - h. See:

Plans of Farm Buildings for Western States, a copy of which is in County Agents' Office. Plan 5400 shows a good summer range shelter and 5431 a colony brooding house. Poultry Science and Practice, Chapter 7.
14. Are we sure that we are selecting only good pullets for the laying flocks?
- a. Characteristics of good laying pullets are:
 1. Early sexual maturity
 2. Active healthy and vigorous
 3. Broad and deep
 4. In good flesh
 5. Good size for age
 - b. Pool experiences of group in selecting good pullets for the laying flock.
 - c. Determine with group time to house pullets in their permanent laying quarters.
 - d. It might be profitable to consider the purchase of additional pullets when facilities are available. Point out dangers.
 - e. Discuss ways and means of efficiently handling cull pullets and fattening them.
 - f. See Chapter 5, Poultry Science and Practice.

15. What are some of the important things we should be doing to economically produce broilers, friers and roasters?
- a. Bring out characteristics of good broilers, friers and roasters.
 - b. Determine market demands and prices of the different classes of market birds.
 - c. Pool experiences of the group on ways and means of getting the different classes of market birds in condition for the market.
Feed requirements Space Care
 - d. Discuss advantages and disadvantages of range, confinement and battery finishing.
 - e. Pool experiences of group in raising capons and discuss the advantages and disadvantages of capon production.
 - f. Consider the advisability of having an experienced person giving a demonstration of caponizing.
 - g. See:
 F. B. 1377 Marketing poultry
 Poultry Science and Practice, Chapter 13.
 F. B. 849 Capons and caponizing.
16. Are we following a definite breed improvement program?
- a. This outline was prepared for emergency war training to speed up production. However, it might be profitable to devote at least one meeting to a definite breed improvement plan.
 - b. Some problems in connection with this job are:
 1. Are chicks of known breeding purchased?
 2. Are improved or pedigreed males used?
 3. Are male birds secured from the same source each year?
 4. Is one getting back from the hatchery his own chicks?
 - c. For aids in this connection see:
 Poultry Science and Practice, chapter 5 and chapter 14.
 Colo. Ext. Cir. 159, A practical poultry improvement program for Colorado. Misc. Pub. 300, U.S.D.A. The national poultry improvement plan.

17. What are the important practices we should keep in mind to increase egg production?
- a. This job is merely a summary of the practices discussed in the course.
 - b. List on the blackboard these practices and have a summary of the important points of each.
 - c. It might be worthwhile to have each producer prepare a chart showing:
 1. The important practices.
 2. Whether or not the practice was followed.
 3. The number of chicks purchased or hatched.
 4. The number of chicks raised to two months.
 5. The number of laying hens and pullets in the flock.
 6. The average monthly production.
 - d. Checking these sheets on the farms would be excellent follow-up work and means of evaluating the instruction offered in the course.
 - e. See chapter 14, Poultry Science and Practice.
 - f. Make clear and emphasize the fact that this course could be followed by another distinct course (O.S.Y.A. Course No. 5) in which all the time could be devoted to the making of and to the repair of poultry equipment and appliances.
18. What are some of the things others are doing that would help us to produce eggs more efficiently?
- a. This job means taking several tours to permit members of the class to observe good poultry practices.
 - b. These tours could be planned for Sunday afternoons.
 - c. Tours should be planned to economize on the use of cars and amount of travel.

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