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DAIRY AND POULTRY TEACHING EQUIPMENT

A list of equipment items for teaching the dairy and poultry enterprises was recently sent to Minnesota teachers of agriculture and each teacher was requested to indicate which of the items he had *available*, which items he did not have but considered *essential*, which items he did not have but considered *desirable*, which items were of *no value*. The table on pages 2 and 3 represents the checked lists of 33 teachers.

The list mentioned above was constructed by analyzing the dairy and poultry enterprises into jobs. The writer carefully considered how each job should be taught and what equipment might be utilized. The list was checked and criticized by experienced teachers before it was put in final form.

The full significance of the list will not be noted unless a certain assumption is understood. This assumption is that the equipment of an agriculture department is not limited to the confines of the school property. The community in which the department is located has many facilities such as farms, herds, buildings, creameries and the like which are available for teaching purposes and may be considered a part of the equipment of an agriculture department. Those facilities of a community which may be used in the teaching of the dairy and poultry enterprises were therefore included in the list of equipment.

The equipment of an agriculture department may be classified under four heads: (1) items which must be purchased; (2) items which may be made in the shop; (3) items which may be borrowed in the community, and (4) items which may be obtained free. All four classes are included in this study. However, no attempt has been made to list charts, diagrams or pictures which might be used.

The teachers of agriculture who checked the list were asked to add other items. A few items were added. These are (1) for the poultry enterprise, catching hook, carrying crate, brooder coop, marketing crates, poultry fence, leg and wing bands, toe punch, egg cartons, score cards, poultry house plans; (2) for dairying, score cards, churn, ear tags, funnel with stiff rubber tubing, syringe, minerals for dairy rations, specimens of cow's teeth, and rope.

Taking as 100% the total items considered essential by the 33 teachers, we find that in the aggregate the teachers have available 86.6% of the *essential* equipment for teaching the poultry and dairy enterprises. It is assumed that the equipment now available is essential. The percentage of dairy equipment is 87.9 as compared with 84.9 for poultry.

Including also the items checked as desirable and essential, the 33 teachers have in the aggregate 63.8% of the *essential* and *desirable* equipment for teaching poultry and dairying. Here again we find a larger proportion of the essential and desirable items for teaching dairying (68.4%) as compared with 58.4% for poultry. Since the items are not weighted to indicate essentiality or desirability, the percentages should be considered a rough approximation.

The second column which indicates the items which are essential but which the departments do not have is quite significant because it shows the most important equipment needs as judged by those in closest contact with the problem. Some of the outstanding items are: long handled hoop net, trap nest, eggs for grading and candling, egg scales, egg candling outfit, eggs in process of incubation, caponizing set and board, commercial lice powder, type of hoppers for chicks, red reader, hydrometer and jar, Quevenne lactometer, sediment tester, herd book, types of milk houses, veterinary thermometer, milk fever apparatus, trocar and canula, milk tube. Some of these items are costly and though essential are little used. Others, like the egg candling outfit, will be frequently used and can be constructed easily and cheaply. Items like eggs for candling and grading and milk houses should be easily available in most communities.

Poultry

Item	Check if you have the item <i>available</i> for use	Check if you <i>do not have</i> but consider <i>it essential</i>	Check if you <i>do not have</i> but consider <i>it desirable</i>	Check if of <i>no</i> <i>value</i>
Catching coop for culling.....	8	1	17	7
Flocks near the school to cull.....	29	2	2	0
Exhibition coops*	10	3	14	5
Long handled hoop net.....	0	5	16	9
Fattening coop	5	1	18	8
Killing box	4	0	15	13
Killing knife	9	2	15	6
Stubbing knife	4	3	17	7
Birds for killing and picking exercise.....	15	2	11	4
Local houses for study.....	30	3	0	0
Types of feed hoppers (local).....	28	1	4	0
Types of nests (local).....	24	4	5	0
Types of watering devices (local).....	26	2	4	1
Trap nest	15	7	9	2
Broody coop	15	3	10	4
Samples of scratch feeds.....	24	4	4	1
Samples of mash feeds.....	24	3	5	1
Samples of commercial feeds.....	27	2	3	1
Oat sprouter	13	4	11	5
Crit and shell.....	22	4	7	0
Case of eggs for grading and testing (candling)	18	6	5	3
Egg scales	12	8	11	2
Egg candling outfit.....	14	7	11	1
Types of egg crates.....	9	3	15	3
Water glass	15	2	11	5
Birds to show characteristics of the important local breeds	23	3	5	1
Types of coal and oil incubators (local).....	22	2	6	3
Types of thermometers.....	18	3	10	1
Eggs in process of incubation to test for fer- tility	17	5	11	0
Types of hovers (local).....	23	1	7	1
Types of brooder houses (local).....	20	4	8	1
Caponizing set	18	6	8	1
Caponizing board	6	6	11	10
Cresol	19	3	7	3
Coal tar dip.....	17	2	10	3
Barrel sprayer (whitewashing).....	8	2	15	7
Potassium permanganate	25	1	5	1
Carbolic acid	21	1	6	4
Bichloride of mercury.....	22	0	7	3
Blue ointment	14	1	12	5
Sodium fluoride	19	1	8	4
Carbolineum	13	2	14	3
Commercial lice powder.....	17	5	7	3
Samples of chick feeds.....	23	3	4	2
Types of hoppers (chick).....	16	5	9	1
Types of watering devices (chick).....	20	4	6	1
Egg record forms.....	26	2	5	0
Incubator record forms.....	13	3	16	1
Financial record forms.....	20	2	10	1

* The number of checks on some items will not total 33 in all cases because three teachers did not check certain items.

Dairy Cattle

Item	Check if you have the item <i>available</i> for use	Check if you <i>do not have</i> but consider <i>it essential</i>	Check if you <i>do not have</i> but consider <i>it desirable</i>	Check if of <i>no</i> <i>value</i>
Babcock milk tester (12-bottle)†	27	1	3	0
Babcock milk tester (4-bottle)†	13	0	1	19
Milk test bottles	33	0	0	0
Cream test bottles	32	0	1	0
Skim milk test bottles	31	1	1	0
Acid bottle with tube	15	4	9	4
Acid measure	32	0	1	0
Red reader	13	8	8	2
Cream test balance (torsion)	24	1	6	2
Pipette	32	0	1	0
Acid burette	18	3	10	2
Dividers	32	1	0	0
Sulfuric acid for testing	33	0	0	0
Two-gallon stone jar	15	3	10	3
Sample bottles for composite tests	27	1	3	1
Brushes to clean milk test bottles	32	1	0	0
Brushes to clean cream test bottles	30	1	2	0
Cleansing powder	26	4	2	1
Test bottle rack	25	4	4	0
Milk scales (spring balance)	25	3	5	0
Hydrometer	16	4	9	2
Hydrometer jar	10	7	11	4
Butter moisture test balance	2	3	19	8
Quevenne lactometer	20	9	3	2
Sediment tester	7	6	12	6
Corrosive sublimate tablets	23	2	7	2
Dairy thermometer	31	1	2	0
Alkaline tablets	10	2	14	7
Barn book (records)	23	4	6	0
Herd book (records)	20	6	6	0
Collection local mill feeds	22	3	7	1
Collection commercial feed samples	23	2	4	3
Collection forage feed samples	21	2	9	1
Collection silage samples	17	3	10	1
Types of milking machines found locally	16	2	10	3
Animals of the important local breeds	29	2	2	0
Types of coolers found locally	15	2	13	2
Types of milk pails (local)	20	2	10	1
Types of milk houses found locally	20	5	7	1
Types of dairy barns found locally	29	2	2	1
Barn plans	31	1	0	1
Catalogues dairy barn appliances	29	2	2	0
Types of stanchions found locally	25	4	4	0
Pedigrees	27	3	3	0
Creamery or skimming station (local)	30	0	2	0
Samples of calf feeds	18	3	9	2
Calf feeders	9	4	15	3
Caustic potash	22	3	6	2
Veterinary thermometer	10	6	14	3
Milk fever apparatus	11	7	11	3
Trocar and canula	6	5	19	1
Bistoury	4	1	16	9
Dilator	6	2	17	7
Milk tube	7	8	15	2

† Three departments have 8-bottle testers and one has a 6-bottle tester.

The outstanding items, desirable but not available, as checked in the third column represent all four classes of equipment. Several factors account for their absence in agriculture departments, i.e., cost, infrequency of use, storage space required, local unimportance of certain jobs.

Some of the items most frequently checked in the "no value" column are, catching coop for culling, long handled hoop net, fattening coop, killing box, stubbing knife, broody coop, oat sprouter, water glass, caponizing board, barrel sprayer, blue ointment, four bottle milk tester, butter moisture test balance, sediment tester, alkaline tablets, bistoury, dilator. Some of these items are of no value because other equipment or methods are used to accomplish the same end, e.g., caponizing board, long handled hoop net. Lack of teaching value and high cost separately or jointly account for the other items.

This summary will not give any teacher definite information as to what equipment his department should have, since every department is a special equipment problem. This naturally follows from the fact that the subject matter to be taught in different communities must vary. However, the summary will show how a given department compares with other departments with respect to dairy and poultry equipment. Perhaps it will warn him against unwise investment in equipment and suggest in what respects his equipment may be improved. F.W.L.

A GREAT EVENT COMING

A meeting of great importance to the agricultural interests of Minnesota and of the Northwest will be held at University Farm, June 21 to July 27. It is the American Institute of Co-operation, an educational organization endeavoring among other objects to train and develop leaders and workers in the co-operative movement, to assist educational institutions in improving their teaching and investigational courses in co-operation, to collect and make available information about the co-operative movement in America and elsewhere.

This is the second annual meeting of the Institute, its first having been held last year at the University of Pennsylvania. It will meet in other states in the years to come. Minnesota is extremely fortunate in having the 1926 session as the nation is aroused on the subject of agricultural co-operation as it never has been before. All interested in developing agricultural co-operation in the Northwest ought to put co-operation into practice by attending and causing others to attend during at least one week of these sessions.

From 8:00 a.m. to 10:00 a.m. daily there will be college credit courses offered as a part of the program of the Summer Session of the University of Minnesota; from 10:00 a.m. to 12:30 p.m. there will be general speakers by a corps of nearly a hundred men of national prominence in co-operative fields. Each week there will be a special short course from 8:00 to 10:00 a.m. for those not pursuing Summer Session courses for college credit. The short course students will then be at liberty to attend the general sessions. The afternoons will be occupied by conference and meetings of special groups.

During each of the four weeks the short courses, general sessions, and afternoon conferences will emphasize the same features of co-operation as follows.

First week, beginning June 21, Organization and Market Analysis with special attention given to Livestock and Wool—The Annual Cattle Feeders' Day (Thursday, June 24) at University Farm will be a feature of this week. Second week, beginning June 28, Production Programs for Co-operatives, Commodities considered, milk, butter, cheese and other dairy products. Third week, beginning July 6, Membership, Educational and Public Programs, Commodities emphasized, horticulture and poultry products with special application to the farm flock. Fourth week, beginning July 12, Financing and Credit, Commodities, grain and cotton.

The general sessions will be national in character, the short courses will emphasize particularly the problems and points of view of the Northwest.

The American Farm Bureau Federation and twenty other agricultural organizations of national importance participate in the control of the Institute.

The Summer Session of the University of Minnesota, the University Department of Agriculture and the Division of Short Courses are co-operating to make this 1926 session of value to the state, the region and the nation. All Minnesotans are invited to assist the University in making these meetings successful.

Dormitory and meal facilities are available at University Farm at modest rates. Tuition is reasonable.

THE VISITOR will be glad to assist any of its readers who wish to receive further available information about this timely event.—A. V. S.