

# THE VISITOR

Devoted to the Interests of Agricultural Education in Minnesota Schools

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## PROFESSIONAL IMPROVEMENT FOR TEACHERS OF AGRICULTURE

This is the time of the year when teachers of agriculture begin to think about summer school. The following quotations are selected from a story that appeared in the May, 1933, issue of the VISITOR. It has occurred to the writer that it might serve again as a reminder of the value of continued professional improvement for teachers of agriculture.

"Agriculture is a complex and dynamic occupation. New problems, new challenges and new procedures are constantly arising. No one who is alert to the present social and economic problems that are engaging the attention of America, and the world for that matter, needs to be reminded of the importance of agriculture as a factor in readjustment and recovery. Constantly, one hears or reads that out of our present chaos will be evolved a new agriculture and a new social order for our rural population. To keep pace with the changing agricultural situation, there must also be a change in the procedures of teaching agriculture. Objectives must be re-defined and made to harmonize with the purposes of those engaged in the new agriculture. Courses of study must be purged of old and out-of-date materials. New subject matter must be added and new points of view must be established so that the learning in the classrooms may be consistent with the changing practices on the farms.

"It is not conceivable that all teachers possess the power and initiative to make on their own accord all the adjustments that are necessary in order to be influential leaders in the new movements in agriculture. It is certain that all teachers did not learn how to meet all their teaching problems as a part of their undergraduate preparation. In fact, it is not possible nor desirable to prepare a teacher so that he will stay professionally 'put' the rest of his days.

"With the best of undergraduate preparation, many teachers come to the task of actual teaching with a large amount of professional preparation yet to be obtained while in the actual process of teaching. Teachers do not stand still professionally. They either progress or they regress. Frequently, poor teaching

is done by 'good' teachers who have stopped growing. They stop growing because they have become ensnared in a cyst of minor local routine entanglements that gradually strangles their initiative, narrows their perspective, which in turn limits their sphere of interest and leadership. They soon become impregnable to new ideas, new ideals, new attitudes and new opportunities. Professional growth ceases and professional anemia sets in because the life blood of inspiration, enthusiasm and study has been shut off."

The 1941 Summer Session of the University of Minnesota provides exceptional professional improvement opportunities for teachers of agriculture and other workers in the field of Agricultural Education. The first term begins June 16th and closes July 25th. In addition to the regular six-week term, a four-week term is provided for teachers of agriculture who do not find it possible to attend the regular six-week term. Courses carrying graduate credit are available. The term of four weeks begins Monday, June 16th and closes Friday, July 14th.

The following offerings are available for those who are especially interested in Agricultural Education. Teachers may enroll for these courses for either four weeks or six weeks.

### Agricultural Education

Agr.Ed.141su. Supervised Practice in Vocational Agriculture. The selection, planning and supervision of farming programs for individuals and groups directed toward establishment in farming. Special emphasis on the determination of needs, financing of programs and the keeping of accounts. (2 or 3 cred.; sr., grad.; prereq. 10 hrs. in ed.; MTWThF I; 301 Hort. (UF). Mr. Ekstrom.

Agr.Ed.145su. The Integrated Course of Study in Agriculture. A presentation of present trends in the practices of organization, administration and teaching in departments of agriculture in the secondary schools. Emphasis on problems of guidance and counselling as a phase of the agriculture program, course of study construction and planning programs for individual students. (2 or 3 cred.; sr., grad.; prereq. 10 hrs. in Ed.; MTWF IV and MWF VI-VII; 301 Hort.(UF). Mr. Field.

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### THE STAFF

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Agr.Ed. 232su.\* Research in Agricultural Education. Introduction to investigational work in problems of teaching agriculture in the high schools. Experience in selecting programs, preparing bibliographies, analyzing and interpreting data and preparing manuscripts. (3 to 9 cred.; grad.; prereq. 15 hrs. in Ed., lect. hrs. and individual work ar.; 205 Hort.(UF). Mr. Field, Mr. Ekstrom.

Agr.Ed.238su. Planning and Evaluating Programs of Agricultural Education. Surveying community needs and the establishment of objectives and goals to meet these needs. Developing long-time and annual programs in agricultural education with suggestions as to means of accomplishment and the evaluation of outcomes. (2 or 3 cred.; grad.; prereq. 15 hrs. in Ed.; MTWThF III; 301 Hort.(UF). Mr. Ekstrom.

Agr.Ed.286su. Special Problems in Agricultural Education. Analysis and discussion of special problems of individual teachers. Opportunity for intensive study of specific problems related to local school programs. (2 or 3 cred.; grad.; prereq. consent of instructor; ar.; 205 Hort.(UF). Mr. Field, Mr. Ekstrom.

The following courses which may also be of interest to Teachers of Agriculture will be offered during the summer session:

Ag.Econ.105su. Advanced Farm Management. A study of the principles involved in the analysis and planning of a farm business and of the factors affecting success in farming operation. Special attention is given to measures and standards of quality, efficiency and balance in the farm business. (2 cred. for 4 weeks, 3 cred. for 6 weeks; jr., sr., grad.; prereq. 102 or equiv.; II, MTWThF; 312 HH.) Mr. Pond, Mr. Engene.

40su. Mechanical Training. Instruction and laboratory practice in the mechan-

ical trades, including belts, pulleys and lacings, cement work (including construction of lily pools, seats, bird baths and flagstone walks) leather sewing and riveting, electric wiring, rope splicing, knots and hitches. (2 to 4 cred.; no prereq.; lect. TWThF VI; lab. arr.; 106 Eng.) Mr. Dent.

41su. Metal Work. A course in metal work, including soldering and sheet metal work, hammered pewter and copper work, cold metal work (including lamps, flower brackets, etc.), pipe fitting and valves, forage work (including tempering and heat treatment) oxy-acetylene welding, brazing and cutting, electric arc welding. (2 to 4 cred.; no prereq.; lect. TWThF, VII, lab. arr.; 106 Eng.) Mr. Dent.

104su.\* The Soil Moisture Relation in Agriculture. A study of principles and practices in this field which comprises irrigation, farm drainage and soil erosion by water. (2 to 3 cred.; not open to engineers but to Ag. seniors and to graduates; prereq. soils 9 or equiv. and 9 cred. in Ag.Eng. including physics, MTWThF, II.) Mr. Roe.

119su. Live Stock Management. A study of the essential management principles involved in each of the several types of specialization in live stock production, covering beef cattle, sheep, hogs and horses. (2 cred., for 4 weeks; sr., grad.; no prereq. for college graduates, for undergraduates prereq. 56-57, 112, MTWThF, II, 3 st.) Mr. Peters.

213su.\* Research in Animal Husbandry.

214su.\* Research in Poultry Husbandry.

\* Course offers an opportunity to meet 9-hour research requirements for Plan B candidates of the Master's degree.

## THE HYBRID SEED CORN PRODUCTION PROJECT

Carl Borgeson

Division of Agronomy and  
Plant Genetics

The advent of hybrid corn has given Vocational Agriculture instructors a project in the crops field which possesses considerable appeal. The experience of teachers during the last few years seems to indicate that the production of hybrid seed corn is very interesting and fascinating to young people. Any meeting on hybrid seed corn production is largely made up of members of the younger generation. Their fathers who have selected seed from their open-pollinated corn fields year after year are willing to admit the superiority of hybrid corn, but would prefer to leave the many details of hybrid

seed production to the younger, more vigorous generation. A teacher must have a thorough appreciation of the details of hybrid seed corn production if he is to guide a student to the successful completion of a hybrid seed corn project.

The effects of some projects, whether they are good or bad, will not reach beyond the farm of the student. However, a hybrid seed production project results in a product that is distributed throughout the community. If the seed is poor through failure at some point along the line, the boy and his father, the teacher, the school and sometimes the experiment station that supplied the seedstocks will be in for considerable criticism. If the seed gives satisfactory results, the student may be in a position to continue with a profitable sideline in his community. Therefore, let us consider the main points in hybrid seed production and point out where some of the difficulties are and where failures occur.

### Seedstocks

In Minnesota, the Agricultural Experiment Station through the Division of Agronomy and Plant Genetics increases and distributes seed of the parent lines of its own varieties, called Min-hybrids. These are the only parent stocks available for project use since commercial seed companies do not release their parent lines to the public.

Instructions are available which give the methods for the production of each hybrid. Both the student and the teacher should become thoroughly familiar with these directions for producing the seed. Some hybrids require planting of the male and female line at different dates. In some cases, the ratio of female to male rows may be 3-1 and in others 2-1. The teacher should not recommend or permit the student to widen these ratios since very poor pollination may be obtained, resulting in a large percentage of the hard to sell "round" kernels.

Persons planting the parent lines for the first time may not realize the importance of being unusually careful in planting since seed may be carried over from one parent row to the next by the planter, resulting in a mixing of the parent lines. Naturally, this leads to the production of inferior seed.

### Isolated Plots

A student should know the requirements for isolation of a seed plot. In some cases, cooperation with the neighbors may be needed to insure isolation on all sides. A definite understanding of this is necessary; otherwise, valuable seed

may be planted on ground that will be "condemned" because of failure to meet isolation requirements.

### Detasseling

Assuming that the isolation is satisfactory, the inheritance is next definitely determined by detasseling the seed or female parent. The importance of careful detasseling cannot be over emphasized. Inasmuch as the job comes at the time when the student may be badly needed in the harvest field, previous arrangements should be made with the parents so that the project can be taken care of.

The teacher should familiarize himself with the correct technique of detasseling so that this information can be imparted to the student. The necessity of everyday detasseling should be pointed out to the student so that the plot will not be neglected for several days at a time. If students are to be given the hybrid seed production project, the teacher should be in the community during the detasseling period to supervise the work. Cooperation between the seed inspection department and the teacher will result in seed plots that are not neglected during this time.

### Harvesting and Drying

High germination is a necessity in good seed corn. This is obtained by harvesting the crop before a damaging, killing frost, and by proper drying.

The average date of the first killing frost in the fall in central and southern Minnesota is about October 10th. Facts are available comparing the moisture content of seed corn, temperature and the subsequent germination. These data should be studied and the seed plots harvested as soon as good quality seed can be obtained. A few days of delay in harvesting may reduce a product worth \$5.00 per bushel to one worth \$.50 per bushel.

The problem of drying the seed should be definitely solved long before the seed is ready for harvest. Seed brought in from the field with 25-30 per cent moisture should not lay around for several days before heat and air circulation through the seed is begun. The best quality seed is obtained by reducing the moisture content below 14 per cent in 5-7 days. It is possible that a large grower in the community will be willing to custom dry the seed in a bin drier at a reasonable price. Hatcheries have been used for this purpose with good success. Brooder houses have been used for small quantities of seed but are not entirely adequate for larger lots.

### Final Processing

Shelling, cleaning, grading, treating and sacking come under the heading of final processing. Any method of shelling which does a clean job without cracking the seed can be used. Cleaning and grading usually are done at the same time. The old-fashioned hand crank graders or worn out fanning mills with an inadequate supply of screens will not turn out corn graded sufficiently accurate for good planting. Poorly graded corn will not sell, or if sold, will result in unsatisfied patrons. However, there are a number of custom graders of seed corn who can be called upon to put the seed corn in good shape for planting.

In discussing seed treatment, do not forget to include the treatment of seed corn. Improved stands will result and large growers are adding this finishing touch to their seed. If all of the processes mentioned previously have been carefully executed, a product should be available that would justify an attractive container. Bags with the grower's name on them can be obtained at a reasonable price, and the student will take pride in selling seed put up in an attractive container. Sacks that are dirty, stained, patched, thread-bare and of odd size are not a credit to the seed or its producer.

### Selling

If the seed corn project is an acre in size, it is possible that after the home seed supply is reserved there will still be 20-30 bushels of seed available for sale. A few years ago this seed could be readily sold to farmers who would call at the door for it. However, the large increase in hybrid seed acreage has made it necessary for the larger companies to put on vigorous selling campaigns involving farm to farm canvassing by agents. This fact may make it necessary for the student to call the attention of his neighbors to his production field and to the fact that he will have seed for them.

Price cutting is a practice that demoralizes any industry and should not be necessary if a good product is offered for sale. The good will of other seed producers who depend upon seed corn sales for their livelihood will be obtained if the Agriculture Department sets its prices on a par with the trade.

### Summary

The hybrid seed corn project extends over a period of about 12-16 months, that is, from the time the parent seed stocks are applied for until the commercial seed produced is sold.

This project leads up to a discussion of many problems in the classroom such as the following:

1. A botanical study of the corn plant involving plant structure, mode of pollination, functions of the tassels and silks.
2. Fertilizer requirements and effects of different fertilizers.
3. Cultural operations in preparing the seed bed and cultivation during the season.
4. Harvesting and final processing.
5. Seed corn diseases and their treatment.

From the standpoint of the individual teacher, this project involves considerable responsibility and should not be attempted if the teacher is to be away from the community during the detasseling season. The student no doubt will need considerable assistance in the final drying and processing of the seed. If the community happens to be short of good Minihybrid seed, there is an opportunity for providing farmers in the area with good seed of adapted hybrids.

### ANNOUNCEMENT OF HIGH SCHOOL CONGRESS

The Annual Congress for students of Vocational Agriculture will be held at University Farm, Friday and Saturday, May 9 and 10, 1941. In general, the program for the event will follow the plan of last year when the State Convention of the Future Farmers of America and the Ag. Royal show sponsored by student organizations on the Campus were held as parallel events. There were nearly 1400 persons from 133 schools in attendance last year.

The schedule of activities for the Congress program will include the following competitive events:

Judging and Identification Contests

Crops judging and identification;  
Dairy cattle judging; Entomology identification; Horticulture identification; General livestock judging; Meat identification; Poultry judging.

Farm Mechanics Contest

Achievement Contests

Crops; Dairy; General livestock;  
Farm management; Poultry.

The tentative plans for the 1941 Congress provide for optional tours to points of interest at the University and in the Twin Cities. Educational and recreational programs are sponsored by the University for Friday afternoon and Saturday morning after the various contests have been completed.