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SEED TESTS GIVE VARIED RESULTS IN HIGH SCHOOL

Replying to a questionnaire sent out last winter by the seed laboratory at University Farm, to all agricultural high school teachers, asking whether or not they made any seed tests either for purity or germination or both, 109 gave the following information:

Seventy schools were doing no seed testing.

Thirty-eight schools were doing germination work only.

Sixty-four schools were doing both purity and germination work.

Early last spring samples of alfalfa, red clover, and corn were sent to the 102 schools doing seed-testing work. The instructors were asked to make purity tests of the clover and alfalfa, and germination tests of all three samples. Schools doing no purity work were asked to make the germination tests only. The samples sent represented a uniform lot of seed and each sample was uniformly put together so that all were practically the same. The same amount of Canada thistle and perennial sow thistle seed was put into each separate package of red clover seed and the same amount of dodder seed was put into each package of alfalfa seed.

Eighty-two Make Tests

Out of the sixty-four schools doing purity work, twenty-six or approximately 40 per cent of the instructors, and out of the 102 doing germination work fifty-six, or approximately 55 per cent of the instructors cooperated.

The object of this investigation was to find out in what ways the seed laboratory could assist the high school instructors so that seed-testing work might be uniformly and accurately done.

In all probability the lack of uniformity which was shown in germination work was due to improper equipment. A cheap and efficient germinator is being devised by the seed laboratory and a working drawing of this germinator will be sent to all agricultural high school instructors, so that they may have one built in time for next year's testing. It is hoped that all instructors will equip their laboratories with an accurate germinator.

Teachers Should Be Trained

Purity testing should not be done by high school instructors unless they have had some training along this line. The seed laboratory is always willing to make these tests for any instructor. It will also gladly cooperate with any instructor who wishes to obtain information regarding methods of testing.

The tables, printed as a supplement, give a summary of both purity and germination work.

BOOKS RECEIVED

Publications of interest to industrial instructors which have recently come to the Divisional Library:

"Wood Work for Secondary Schools," Griffith, W. S. Provides in text book form the essentials of woodwork as usually taught in secondary schools. Manual Arts Press, Peoria, Ill.; \$1.75.

"Twenty Lessons on Poultry," Patterson, C. T. An elementary treatise covering the subject of poultry in a general way. J. B. Lippincott Company, Philadelphia; 50 cents.

"Agriculture and Life," Cromwell, A. D. J. B. Lippincott Company, Philadelphia; \$1.50.

"Productive Feeding of Farm Animals," Woll, F. W. J. B. Lippincott Company, Philadelphia; \$1.50.

"Common Diseases of Farm Animals," Craig, R. A. J. B. Lippincott Company, Philadelphia; \$1.50.

"Productive Beekeeping," Pellett, F. C. J. B. Lippincott Company, Philadelphia; \$1.50.

"Elements of Farm Practice," Wilson, A. D. A revision of "Agriculture for Young Folks." E. W. Webb Publishing Company, St. Paul. \$1.00.

"Soils and Plant Life," Cunningham, J. C., and Lancelot, W. H. Treats of soils and field, fruit, and vegetable crops in combination. The Macmillan Company, New York; \$1.10.

The agricultural department of the Nashauk-Keewatin high schools publishes a monthly sheet dealing with the activities of the department. Material for the publication is prepared partly by the instructor and partly by the pupils.

The Visitor publishes this month a report by Prof. W. L. Oswald, in charge of the seed laboratory, University Farm, showing the results of an investigation of seed testing done by high school agricultural instructors. The report helps to emphasize the necessity for instructors trained outside of the state to familiarize themselves with Minnesota methods and Minnesota conditions. A study of the returns, to Professor Oswald, by individuals shows that practically the only ones to make accurate estimates of purity of the samples sent out were those who were specially trained in seed analysis by the course especially designed to prepare for such work offered in the University of Minnesota and required for graduation from the divisions of Agricultural Education and Agronomy and Farm Management of the College of Agriculture.

FAIR DISPLAYS END GIRLS CLUB PROGRAM

The year's work in the bread-making project of boys' and girls' club work closed with the demonstration at the Minnesota state fair, September 4 to 9. To make it an educational feature, and to encourage club work in the different counties, the state fair board appropriated money to pay the railway fare of the girls winning first place in Class A and Class B of the bread-making project in each county.

This year 121 girls were sent from fifty-nine counties to take part in the final contest. These were organized into the girls' camp at University Farm, and an effort was put forth to make the week not only entertaining, but instructive. The program included visits to interesting places in the Twin Cities, evening talks about club work, instruction on the exhibits of the big fair, and practice in bread making and canning. Each girl baked bread one day, using the quick process, and was judged on her instruction, on the loaf of bread and on her story submitted about how she learned to make bread.

Four Clubs Are Rivals

One of the special features was a club competition by the four winning bread-making clubs of the state. The railroad fares of the members of the competing clubs were paid by the Russell-Miller Milling company.

In the individual competition, Anna Hart of the consolidated school at Oklee won the championship in Class A, with a score of 97.8, and has been awarded a gold medal and a \$100 scholarship in the School of Agriculture or in the College of Agriculture at University Farm. Second place, with a silver medal, was taken by Ida Lueck of Aitkin, with a score of 97.2. Third place, a bronze medal, went to Antonia Walenta of Hopkins, with a score of 97.15.

In Class B Ida Wiklund of Two Harbors captured the championship. Her score of 98.7 makes her the state champion. She received a gold medal and a \$100 scholarship at University Farm. Second place was awarded to Beatrice Andrist of West Concord on a score of 97.75, entitling her to the silver medal. Ada Pothoff of Dayton Bluff won third place and the bronze medal on a score of 96.45.

First club honors were won by the Maple Lake club with an average standing of 95.8. This club is composed of ten of the High School girls of Maple Lake. The Ottertail County club won second place, with an average standing of 91.63. Ottertail county has the honor of having had the largest number of bread-making clubs this year. The other competing clubs were the Comstock club of Clay county, and the Nicollet County club.

Canning Entrants Total High

One hundred and ten girls took part in the canning contest, canning tomatoes, sweet corn, and carrots by the "cold pack" method. Prof. George E. Farrell of the United States Department of Agriculture assisted the state leaders in this contest. Each girl canned two pints of vegetables and was scored on her skill, speed, cleanliness, and finished product.

First place was won by Helen Reich, Secretary of the Maple Lake Girls' club on a score of 93. Her prize is a gold medal and a canning outfit. Second place was awarded Ellen Peterson of the Alberta consolidated school, who scored 91. Her prize is a silver medal and \$10 worth of canning supplies. Opal Cupp of Mora won a bronze medal for third place, scoring 90.3. Other winners were: Martha Gould, Jarretts, score, 89.4; Anna Ryan, Pipestone, score 88.5; Georgina Flowers, Cleveland, score 87.6; Mabel Thompson, Farwell, score 86.7.

This work will be planned and carried on in the same way the coming year as it was last year.

TEACHERS HEAR SCHOOL PLANS AT SUMMER MEETINGS

At the summer conference of agricultural instructors at University Farm, July 24 to 28, plans and opinions of workers in the State Department of Education were given out. The following reports complete the summary begun in the September Visitor:

EXTENSION WORK

By C. H. Barnes

There are in Minnesota 156,000 farms. These farms contain on an average 177 acres each. All are valued at \$1,262,441,426, or about \$46 an acre.

A large part of the land area of the state is still unproductive. The development of these farms and of this unproductive land is the task that confronts our agricultural college, the state agricultural schools and experiment stations, and the numerous agricultural departments in our high schools and graded schools.

Agriculture Taught to 471,000

These vast acres, together with our many other splendid physical resources, constitute a magnificent heritage—a great trust committed to our care. Scattered throughout the state are 230 high schools, 146 of which maintain agricultural departments; 241 graded schools, twenty-nine maintaining departments of agriculture. Added to these are nearly 200 new consolidated schools, carrying on work in the industrial subjects, and over 8,000 rural schools. Attending these schools are 471,000 boys and girls. They, and not the rich physical endowment, are Minnesota's greatest resource, and her greatest need is a vision of what these young people can make of themselves.

The agricultural departments of our schools have to deal with the very best of these children—the boys and girls from the farms. Surely, every instructor in every agricultural department of a Minnesota high school is to be congratulated upon his opportunities. With 400 farms, on an average, surrounding each of our schools, against forty business houses, the subject of agriculture becomes of first importance.

Teaching Cost Nearly Two Millions During the seven years that agricultural education has been carried on in Minnesota on a state-aided basis, the legislature has expended \$2,225,000 on industrial education. Of this amount about 40 per cent, or \$900,000, has gone to agriculture. It is estimated that the local communities spent at least an equal amount, so that agricultural education in our graded and high schools has cost \$1,800,000.

"Does it pay?"

We believe that it does, and that the movement has been worth to us all and more than it has cost. However, we are convinced that we have only begun to approach its possibilities, and that we need today above all else a better vision of what can be done for the young people of the farms surrounding our country towns.

Better Conditions Needed

As has been so well said, we need a better and more definite course of study, better equipment, better agricultural laboratories, better and more carefully tended field laboratories—school plots—better class rooms, BETTER CLASS ROOM TEACHING, a more direct and definite motive for the work, and a clearer view of our responsibilities and our opportunities.

After this, or coupled with this, we need to concentrate our efforts on a few definite lines of extension or community work—lines of effort that shall take into account the boys and girls of the entire community, whether in school or out; home project work, growing out of school work or closely related to it; boys' and girls' farm club work; home garden work; contest work; anything and everything pertaining to the life and uplift of the boys and girls on the farm.

Work With Boys, Plan

May we suggest that during the coming year, in your extension work, you pay more attention to the farm boys and less to the farmers themselves; that you give advice to farmers only when advice is sought; that you be willing at all times to lend a helping hand, but that you be in no hurry to present your views; that you mind carefully your own affairs, but that you keep busy twelve hours a day; that you concentrate your efforts on a few well planned projects; that you cooperate with every other available agency for the agricultural development of your community, and, above all, that you make your teaching rank with the best that is done in your school.

MOTIVATION

By R. B. MacLean

Motivation is a term used to define that principle of teaching which seeks to make the school tasks significant and purposeful to each child by relating the work to the experiences and interests of the pupil.

It is essential that the work in agriculture have some definite purpose. Every teacher of agriculture should define in his own mind the purpose of the courses offered.

Definite Purpose Needed

The science of agriculture is a fundamental science, one in which the well trained citizen is interested, not only because he expects to live in the country, but because the business of farming is a basic occupation. The high school student looking forward to entering a profession as a life work should be interested in the study of agriculture from a scientific standpoint. A doctor may locate in a rural community where the knowledge of farming operations is essential. The lawyer in the rural community is continually confronted with agricultural problems. Agriculture, then, should be taught in the high school on the same basis as any of the other sciences. If any purpose or direction is given to the instruction in agriculture, it will be because the teachers of this subject have a vision of its possibilities and have sufficient personality to reveal the purpose to the pupil.

Child Must See Motive

2. The purpose must be revealed to the child. The tasks may be made significant to the pupil by appealing to him through various motives. Motive makes a thing go. The automobile is supplied with motive power; the machine, however, will not move until the parts are properly related. Many teachers find it hard to make things go. Usually, it is not that the children lack energy, but that the teacher fails to relate the work to the pupil's interests.

Instruction in agriculture offers abundant opportunities to appeal to the child's interests. The desire to own property may be a motive. Collections of weeds, seeds, grasses, and grains may be made. Thrift may be taught in connection with gardening and canning contests. The desire to compete and excel can be made a motive in gardening and in judging contests. The social instincts are strong. Class projects, keen interest in the home or the farmstead, may be utilized to make instruction vital. We sometimes emphasize the practical but we forget the value of beauty.

Work Must Bring Joy

Every pupil is interested in the development of his own home or farmstead. The habits of neatness and order have a direct commercial value. Some attention to floral culture is suggestive. It would seem fitting that the class room of the agricultural instructor should sometimes contain a bowl of well chosen and tastily arranged flowers. That the work may be properly motivated, the child should be kept in mind as well as the subject matter.

3. Results should be measured not only by the size of classes, the results of examinations, but rather by the spirit of the pupils. Pupils should be taught industry, the value of common and humble tasks done in an intelligent way. Every properly motivated task brings to the pupil a joy in doing it.

NEWS

Frank Sandhammer, for several years agricultural instructor at Rushford, is now county agent in Manistee county, Michigan.

The November Visitor will contain a directory of teachers in the industrial departments of the public schools of Minnesota, such as has been printed in preceding years.

Franz Krause, agricultural instructor at Renville, has resigned to accept the county agency of Faribault county. D. Frank Adams, College of Agriculture '16, has taken up the work at Renville.

A. L. Peterson, for the last two years agricultural instructor at Argyle, has been elected to the vacancy at Le Roy caused by the resignation of P. E. Sturges, who takes up insurance work. C. C. Lake, formerly of Stephen, will take Mr. Peterson's place at Argyle.

The school exhibits at the Minnesota state fair occupied the new building especially erected for schools in the northwest angle of the Agriculture building. The room was light, airy, and commodious. The open fronts of the booths were kept free from decorations. All signs were furnished by the fair association, hence they were uniform. Lac qui Parle, Dakota, Dodge, Washington, Big Stone, Little Medicine, Swift, Chipewa, and Koochiching counties had exhibits filling separate booths. Among the consolidated schools, St. Francis had an exhibit requiring a whole booth and Donaldson, Correll, and Brook Park made strong showings. Among the high schools, prizes were awarded in the following order to Dawson, Detroit, Pipestone, South St. Paul, Hayfield, Annandale, and Red Wing. Red Wing offered a particularly effective manual training exhibit but did not exhibit either normal training or agricultural work.

PRIZES FOR PIGS AT STATE FAIR GO TO CLUB MEMBERS

Educationally the pig club exhibit at the Minnesota State Fair, September 4 to 9, was of unusual interest. Seven hundred boys and girls have been enrolled. Forty-one counties checked up the work in time to send the winning pig in the county to the state fair, the fair managers paying all expenses. There was a marked improvement in quality of these pigs over those shown last year. Nearly all were pure-bred. A record showing the rate of gain in weight and the cost of production of a pound was shown with each pig. A few of the boys who had evidently fed a good deal of kitchen waste, had records which were very low.

Twenty of the boys spent the week at the fair and were present when the judging was done. D. A. Gaumnitz did the judging, and gave the boys a fine talk on selection and type.

Yorkshire Is Champion

In the bacon class Melvin Sansness of Farwell, Pope county, won first on a Yorkshire. He also won the championship over the lard class, taking a prize of \$45. Other winners were: Roman Paulson, Thief River Falls; James Palmer, Excelsior; Carl Boyce, Madison; Geoffrey Churchill, Montevideo.

First place in the lard type class was won by Owen Roberts of Austin on his Duroc-Jersey pig. Here are other winners: Ward Smith, Worthington; Lloyd Champine, Sherburne; Harold Brown, Sauk Centre; Oscar Peggarr, Loman; Eddie Havlik, Appleton; Theo Luchsinger, Lake Elmo, and Robert Jude, Maple Lake.

The special Poland China prizes were awarded to: Robert Jude, Maple Lake; Butler Hanson, Kragness; John Quiring, Mountain Lake; Ruth Cunningham, Pipestone.

Gain and Cost Win

The special Duroc-Jersey prizes were awarded on a pro rata basis, the scores being based on daily gain, cost of gain, quality of pig, and report and story of the contestant's work.

The records follow:

Name	Daily Gain, pounds	Cost of Gain, pound	Prize
Ernest Burtness, Bloomington Prairie	1.55	3.25	\$7.00
Edward Bertrand, McGregor	2.08	6	6.00
Cecil Ryan, Cedar	1.49	2.86	5.50
Russell Payne, Belveue	1.51	1.3	4.50
Thorwald Jorgenson, Audubon	1.47	3.22	4.00
Ward Smith, Worthington	1.46	6.35	3.00
Eddie Havlik, Appleton	1.28	7.00	2.00
Warren Legg, Anoka	1.17	4.58	2.00
Perry Latham, Tracy	1.20	3.17	2.00
Charles Anderson, Faribault	1.20	4.3	2.00
Myrtle Kieven, Mahanomen	1.12	2.81	2.00
Arthur Norstrom, Mora	1.00	2.95	2.00
Patsy Murphy, Bruno	1.16	5.8	2.00
Gerald Tapin, Hastings	.69	1.09	2.00
Owen Roberts, Austin (Report incomplete)			2.00
Lloyd Rieke, Fairfax (Report incomplete)			2.00

The low cost shown by two of the boys is due to their feeding kitchen waste, for which no price was set.

Most awards in the regular state contest have been made, reports indicate, and will be announced later.

Club Work Still Includes Pigs

The pig club work is continued as a project for the coming year of boys' and girls' club work. Nearly all of those showing at the state fair are active members of wide-awake clubs.

The acre-yield corn club boys had a good exhibit of corn, showing 120 ten-ear samples. Rex Jacob, of Pipestone, won the championship. Club prizes were awarded as follows:

Pelican Rapids Club	\$25.00
Sleepy Eye Club	20.00
East Grand Forks Club	15.00
Jordan Club	10.00
Detroit Club	5.00

NEWS

Frank J. Brown, for the last year agricultural instructor at Luverne, has resigned to accept a position with the agricultural extension division of the University of Minnesota.

The farm clubs of Anoka county presented an elaborate pageant depicting the history of agriculture, in the stadium at Anoka, August 18 and 19. Thirteen scenes made up the pageant. Each scene was given by a farm club. Three of the ten clubs participating gave two scenes each. The pageant was written for the occasion by Roe Chase of Anoka. It was probably the most extensive social community enterprise undertaken among the farmers' clubs in Minnesota. L. O. Jacob, agricultural instructor, at Anoka, was business manager of the enterprise.

Fulda, Morristown, Deephaven, and several other schools have combined the agricultural and manual training departments under one instructor. State aid is drawn for both agriculture and manual training in proportion to the time given to each. This combination appears to be growing in popularity among the smaller schools. There is, however, some difficulty in securing instructors trained in both lines.