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EC185 Suggestions for Organizing a County Crop Improvement Association

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JUNE 1949

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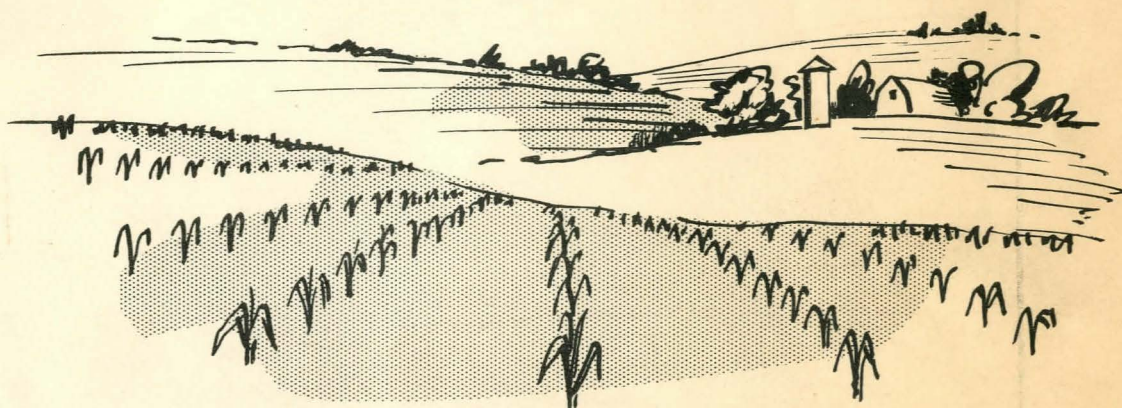
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SUGGESTIONS

for ORGANIZING

A COUNTY CROP IMPROVEMENT

ASSOCIATION



DEVELOPING LOCAL CROP IMPROVEMENT PROGRAMS

COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF NEBRASKA-LINCOLN, COLLEGE OF AGRICULTURE, AND THE UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING,
H. G. GOULD, ASSOCIATE DIRECTOR, LINCOLN.

UNIVERSITY OF NEBRASKA-LINCOLN



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General Suggestions for
County Crop Improvement Associations

C. R. Porter 1/

Several counties in Nebraska have organized a County Crop Improvement Association. Generally speaking, there is a great need for more educational work regarding seed certification procedures and general crop improvement practices.

PURPOSE: Probably the principal purposes of such an organization are to encourage the use of good seed of adapted varieties and the practices that improve the yields and produce better quality grain.

Before organizing a county crop improvement association, there should be a very definite purpose in mind. Some suggested projects which a county crop improvement association might sponsor include:

1. Assist the county agent with local variety test plots.
2. Interest 2 or 3 young farmers in becoming certified seed growers each year; encourage and sponsor 4-H Crops Clubs.
3. Emphasize the elimination of such things as rye in wheat, stinking smut, or other local problems.
4. Sponsor a grain show in the county.
5. Sponsor a Crops Field Day, assist in arranging program and publicity.
6. Sponsor a "Crop Improvement School" - preferably during winter months.
7. Promote allied projects, such as weed control, soil conservation, etc.
8. Cooperate with Nebraska Crop Improvement Association in seed certification work.
9. Support the work of the Extension Service, College of Agriculture, Nebraska Grain Improvement Association, and other agricultural agencies.

It is far better to undertake two or three projects and do them well, than to start several and not carry them through. Projects should be selected and a definite schedule of activities for the year should be planned in advance.

MEMBERSHIP: In membership drives, members need not be limited to seed growers, but all certified seed growers should be active members. Members should be well informed on all phases of crop improvement work. It is better to keep the membership limited to those who are vitally interested in the functions of the organization than to strive for large numbers.

MEETINGS: There should be an annual meeting for the purpose of electing officers, etc., and other meetings during the year as deemed advisable. Each meeting should have a definite program and purpose.

HOW TO ORGANIZE: Perhaps the first step would be for the county agent to appoint a committee of 3 or 4 certified seed growers representing the major crops in the county. Local commercial cooperation should be encouraged and to this end it would be desirable to include one or more additional members. Persons such as a progressive elevator operator, miller, farm-minded banker, vocational agriculture instructor and editor should be considered. The committee should meet and decide whether an association should be organized. If so, a general meeting should be scheduled and well publicized. Officers should be elected and a constitution drawn up and adopted.

PUBLICITY: Well-directed local publicity is essential to the success of the enterprise, hence the confidence and cooperation of the local newspaper representative should be enlisted early in the program. The newspapers must be made to feel that they are a part of this public service program and not merely another group tool. Window displays, posters, cooperative newspaper ads, and similar activities could be planned as a means of selling the project which is being emphasized.

CONSTITUTION AND BY-LAWS: A suggested Constitution and By-Laws is available as a guide to the county association. It may be revised or changed to fit local needs. A copy of the adopted Constitution and By-Laws should be filed with the Nebraska Crop Improvement Association. Each year a list of the county officers should be submitted to the Nebraska Crop Improvement Association, College of Agriculture, Lincoln, Nebraska, in order that a record be kept of those counties having an organization.

OFFICERS: The customary officers should be elected in the usual procedure. It is desirable for the county extension agent to serve as Secretary in order to maintain a close working relationship with the association and to correlate their activities with the program of the agricultural extension service.

ASSISTANCE IN ORGANIZING: The Nebraska Crop Improvement Association, the Nebraska Grain Improvement Association, and the Extension Service of the College of Agriculture will assist in the organization of a county association.

PUBLICITY AND PROMOTIONAL ACTIVITIES

J. C. Swinbank 1/

Publicity and promotional information which may be modified and applied to various crop improvement projects.

Publicity is the art of winning the public. To be most effective it should follow a definite plan similar to that which might be developed in the solution of any other problem.

Steps in a planned publicity program are:

1. Study the problem.

That means gathering and analyzing facts.

2. Establish objectives.

They should be:

- a. Desirable
- b. Attainable
- c. Definite

An objective such as "improving the quality of grain in my county" is too vague. Determine how the grain can be improved and set about to do specific jobs that will accomplish this end. The ultimate objective is usually reached by a series of intermediate goals. One step in grain improvement may be to get 50 farmers to plant certified seed this fall. Another may be to treat all of the grain in Podunk precinct. These are definite intermediate goals that can be attained and measured.

3. Define your public.

Many will not be interested in what you have to say. To be practical, publicity should be directed toward the specific group you wish to reach. Generally speaking, the more you spread out your publicity, the thinner it gets.

4. Three general types of appeal:

- a. Educational - builds goodwill because it helps people to do their job better, easier, cheaper, etc.
- b. Familiarity - getting the name or thing mentioned over and over until it becomes completely familiar.
- c. Attention getting - usually startling in nature. Makes frequent use of stunts. Relies upon making a big impression and is most useful where quick action is desired.

5. Mediums to use:

a. Newspapers

- (1) Stories
- (2) Pictures
- (3) Educational advertising

b. Exhibits

- (1) Window displays
- (2) County Fair
- (3) Office

c. Local grain shows and field days

d. Educational tours

e. Posters

f. Illustrated letters

g. Personal letters

h. Demonstrations

i. Contests

- (1) 4-H Club
- (2) Precinct
- (3) County

j. Motion pictures

k. "Blown-up" still pictures

l. Bulletin machines

m. Radio

n. Pamphlets

o. Personal contacts

p. Group meetings

q. Telephone line rings

Concentrate on the mediums in which you believe you can do a job that is complete and convincing. You are competing with the best commercial advertising and publicity men for the attention of your public. You have the advantage of local contacts, special situations, personal acquaintances, and cooperative helpers. Make the most of it.

6. Make a Schedule of Publicity Activities with dates, topics, mediums, etc.

The above outline may seem somewhat elaborate but it is based on the experience of those who make publicity their business. Nearly all of these publicity mediums have been used by county agents at one time or another. Among those that are effective and not so commonly used are the following:

a. Arrange for local elevators to run three or four cooperative ads on recommended varieties, seed treatment, timely cultural practices, or other educational information.

b. Arrange for local merchants to include a sentence in their regular ads regarding special meetings on topics that are important to the entire community. Don't over-do it, but make the most of it for very special occasions.

c. Enlist the cooperation of your chamber of commerce or service clubs in promoting one or two important projects each year.

d. Arrange with local merchants for special, timely, window displays. Make them attractive. Bulletin machines, pictures, grain displays, etc., can be used.

e. Make more windshield surveys or otherwise gather up-to-the-minute information on problems that need attention. Then let your people know what you have found and what to do about it.

f. Supply timely posters or other attractively illustrated material to elevators and other businessmen for display or distribution to customers. Be reasonable in such requests and they will gladly cooperate on any special occasion.

g. Watch for and publicize the many local examples of practices you are trying to promote.

h. Organize special tours to include farmers and city businessmen. Plan them well and give them a real build-up.

i. Use timely demonstrations more often. Exhibits that show movement always attract attention. A new portable seed cleaner, for example, with engine running and explanatory signs would attract a great deal of attention out in the street some Saturday afternoon.

In publicizing a special project or activity, don't shoot all your ammunition in the first story. Divide up the points of interest and keep them coming. This will give a series of fresh stories instead of a re-hash of the same old material.

Don't try to give major publicity to every activity. It can't be done. In our opinion it is better to select the most important projects, plan the publicity for them and do a good job. The projects selected for major publicity may vary from year to year, thus providing variety to your program.

IMPROVING THE MARKET QUALITY OF GRAIN

J. C. Swinbank 1/

Possible Activities for County Crop Improvement Groups

I. Elimination of Rye Mixtures in Wheat

1. Make survey of fields to determine extent of rye mixtures.
2. Prepare illustrated circular letters presenting problem and situation.
3. Write (personal contact preferable) farmers with rye-mixed wheat asking their cooperation in improving grain quality by:
 - a. Roguing fields before rye grain is formed.
 - b. Establishing a seed field as a source of pure seed.
 - c. Securing new seed, if impractical to clean up the old supply.
4. Visit local elevator-managers and ask that they:
 - a. Urge farmers, through personal contacts and advertising, to eliminate rye mixtures.
 - b. Tell growers why rye mixtures are objectionable to millers.
 - c. Stop "mixing off" rye, thus lowering the quality of otherwise good grain.
 - d. Make price differential between good and poor quality grain.
 - e. See that growers get the advantage of protein and other premiums for high quality.
 - f. Secure and distribute pure seed on a cost or exchange basis.
5. Prepare window displays illustrating:
 - a. Effects of rye on wheat and bread quality.
 - b. Rate at which rye increases once a wheat field becomes infested.
6. Proclaim a "clean-up the rye" week and organize a community campaign plan for same.
7. Appeal to local pride in producing high quality grain.
 - a. News articles.
 - b. Comparing local situation with that in other counties.
 - c. Develop "clean-up the rye" contest among different precincts of the county.

II. Harvesting and Storage

1. Prepare and distribute illustrated letters and posters on harvesting hints.

Might contain information on:

- a. Highest moisture content of grain for safe storage.
- b. Time of day to combine.
- c. Separate storage or immediate sale of immature, weedy or damp grain.
- d. Cleaning and disinfecting bins before grain is stored.

2. Arrange window displays of:

- a. "Sick" wheat
- b. Heat-damaged grain
- c. Stored grain insects
- d. Fumigation materials
- e. Grain damaged and contaminated by rodents.

3. Give demonstrations on:

- a. New chemical method of testing grain to determine whether it is dry enough for storage.
- b. Cleaning and spraying of grain bins.
- c. Fumigation of stored grain.
- d. Rodent control and its relation to grain quality.
- e. Artificial drying of corn and small grains.
- f. Crib and ventilator construction.
- g. Methods of cleaning debris from corn in picking and cribbing process.

III. Increase acreage of recommended varieties

1. Organize 4-H Pure Seed Clubs.
2. Help certified seed growers to plan a balanced seed production program for the county.
3. Help certified seed growers to develop an aggressive program of seed distribution.
 - a. Group advertising:
 - 1) Local newspapers
 - 2) Posters
 - 3) Hand bills
 - 4) Radio
 - b. Exhibits at county fairs. Farmers' Day Programs, etc.
4. Organize local grain shows.
5. Sponsor tours to observe improved varieties, good cultural practices etc.
6. Make field surveys to determine needs for new seed and publicize findings.
7. Publicize advantages of improved varieties as to yield, disease resistance, grain quality.

8. Sponsor yield test plots or demonstration plantings. See that they are properly marked and attractively kept throughout the season.
9. Sponsor the field meeting at test plots, build up interest throughout the season, and make the field meeting a real community affair with every farmer and landlord in attendance. These plots are the show window for crop varieties.

- a. Highest moisture content of grain for safe storage.
- b. Time of day to machine.
- c. Separate storage or immediate sale of immediate, weekly or daily grain.
- d. Cleaning and dusting grain before grain is stored.

2. Average window displays of:

- a. "Black" wheat
- b. Best-damaged grain
- c. Stored grain insects
- d. Fungus diseases
- e. Grain damaged and contaminated by rodents.

3. Give demonstrations on:

- a. New chemical method of treating grain to determine whether it is dry enough for storage.
- b. Cleaning and spraying of grain bins.
- c. Fumigation of stored grain.
- d. Rodent control and its relation to grain quality.
- e. Artificial drying of corn and small grains.
- f. Grid and ventilator construction.
- g. Methods of cleaning debris from corn in picking and cribbing process.

III. Increase acreage of recommended varieties

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2. Help certified seed growers to plan a balanced seed production program for the county.
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 - a. Group advertising:
 - 1) Local newspapers
 - 2) Posters
 - 3) Radio bills
 - 4) Radio
 - b. Exhibit at county fairs, farmers' day programs, etc.
4. Organize local grain shows.
5. Sponsor tours to observe improved varieties, good cultural practices, etc.
6. Make field surveys to determine needs for new seed and publicize findings.
7. Publicize advantages of improved varieties as to yield, disease resistance, grain quality.

CROP VARIETY DEMONSTRATIONS

H. Wolfe 1/

Introduction

The practical value of superior varieties can be realized only when the results can be observed in the field under farm conditions. Therefore, the Agronomy Department at the University of Nebraska makes available the seed necessary for establishing demonstrations which enable farmers to draw their own conclusions. The county agricultural agent or any organization designated by him may obtain the seed and establish such a demonstration. The value of these variety tests is in direct proportion to the amount of planning and the care taken in establishing the plots and to the amount of publicity given the demonstration throughout the period from planting to harvest.

An additional value can be obtained from the demonstration since these plots in the various districts will include all the recommended and acceptable varieties. It would be desirable to have yield samples taken from all the demonstration plots.

How to Obtain Supplies

The County Agricultural Agent can obtain the necessary seed by placing an order at the time designated by the Extension Agronomists at the College of Agriculture. This is about August 1 for winter wheat demonstrations, and about January 1 for spring small grains, sorghum, corn, and sweet clover. Orders must be placed early so that ample time is available for obtaining supplies.

Cost of the Supplies

In cases where supplies must be purchased by the Agronomy Department, the seed is sold to the county associations at cost. Shipping costs must be paid by the organization receiving the supplies.

Selection of a Location for the Demonstration

The selection of a desirable location is extremely important in obtaining maximum benefit from a demonstration. Many people will see the demonstration plots if they are located along a graveled or paved, frequently traveled road; whereas, if they are located far from the road or along a poor, infrequently traveled dirt road, few people will have the opportunity to observe the results.

The field selected should be uniform as to soil type, slope, and fertility so that the results obtained can be reliably interpreted. A fairly fertile soil is usually best for variety demonstrations. Areas should be avoided where cross drainage, poorly drained spots, weed patches or irregular drifting of snow is likely to detract from the uniformity of the demonstration site.

Seedbed Preparation

A well prepared seedbed is necessary to get uniform stands and uniform stands are necessary for reliable results. The seedbed should be prepared in

1/ Assistant Extension Agronomist, College of Agriculture, Lincoln, Nebraska

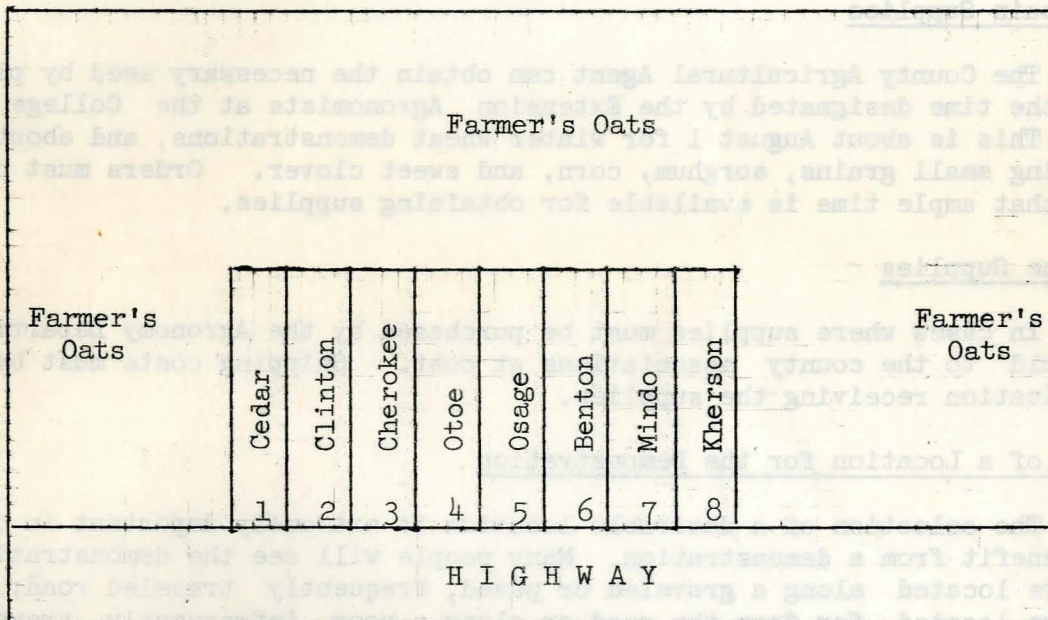
accordance with recommendations made by the College of Agriculture for the particular crop being planted.

Establishing Crop Variety Demonstrations

Small Grain: Varieties should be planted in strips side by side for easy observation. A strip of each variety one drill width wide should be planted with a standard 8- or 10-foot grain drill. The drill should be thoroughly cleaned when a change is made from one variety to another.

The seed being planted in the surrounding field can be drilled across the far end of the strips to give a solid stand (diagram below). A planting plan should be drawn up and filed in the agent's office. If the seed is to be broadcast, it will be necessary to first mark off the area to be covered with each variety and then to scatter the seed evenly over the area. Where the seed is broadcast by hand, it should be divided into two equal lots; one lot should be seeded at right angles to the other. Mixing of the varieties by overlapping must be avoided. Covering should be done by harrowing or disking the length of the plot rather than across the plots to avoid mixing the seed.

Example of Planting Plan for Small Grain



Sweetclover: The small amount of seed supplied (usually one-half pound) of each variety can best be seeded by hand or by using a small lawn or garden seed-er. The plots to be seeded should be marked off and the seed should be divided into two lots, one to be seeded at right angles to the other. Rolling or packing following seeding is desirable. Seeding can be done in rows by using a grain drill with a grass-seed attachment by plugging all except every fourth or fifth spout, depending upon the width of row desired. Cultivation can then be used to control weeds. The best demonstrations are those where sweetclover is seeded alone. A companion crop of oats or barley makes it difficult, if not impossible, to observe differences in the sweetclover varieties during the early growing season of the first year. Most sweetclover varieties are biennial so that a demonstration can be observed over a two-year period. Annual varieties such as Hubam can be reseeded the second year.

Hybrid Corn: Hand planting is necessary to establish hybrid corn demonstrations. The best demonstrations are those planted with about four to five kernels per hill so that the corn can be thinned later to give a uniform stand of each hybrid. The rate of planting and the number of plants left per hill after thinning should vary with the moisture conditions and the soil fertility. The following stands are desired:

Area of State	40" x 40" or 42" x 42" hills Plants per hill	Listed or planted Inches between plants
Eastern	3	14
South Central		
Irrigated	4	10
Non-irrigated	2	20
North Central and Panhandle		
Irrigated	3	14
Non-irrigated	1½ (alternate 1 & 2)	28

Sorghums: Either listing or planting gives satisfactory results. Two or four rows of each variety may be planted side by side in the field so that comparisons can be made. Different plates must be used for the different varieties because of varying seed size.

Determination of Yields

Small Grain: If yield determinations are desired on small grain variety or fertilizer demonstrations, the grain must be cut from two rods of row selected at random from five different places in each plot. The total of ten rods of row may be placed in a sack and shipped to the extension agronomist or extension soils specialist at the college of agriculture for threshing. The distance between drill rows must be known to calculate yields.

Where broadcast seeding is practiced, a square yard of grain should be cut from five different places selected at random in each plot and handled as suggested above.

Corn: Husk 130 feet of row from the middle rows of each plot if the rows are 40 inches apart. With rows 42 inches apart, harvest a total of 124 feet of row.

$$\text{Yield in bus. per acre} = 100 \times \frac{\text{weight of corn sample}}{\text{Weight of one bu. of corn as picked.}}$$

Alfalfa and Grasses: Measure off two rods of strong cord and tie the ends together. When four stakes are placed within the cord to form a perfect square, the area within represents 1/640 of an acre. At the time of mowing, lay out squares at random in five different places in both the fertilized and non-fertilized plots. Rake up the hay within each square and weigh it. Calculate the average yield of the five squares and determine yield from the following formula:

$$\frac{640 \times \text{wt. of hay from one square (average)}}{2000} \times \frac{1}{2} = \text{tons of 15\% moisture hay per acre}$$

Semi-permanent Signs: The demonstration field should be plainly marked to inform farmers who drive by, and to arouse their curiosity. Each variety should be marked so that anyone who looks at the demonstration can identify the various strains. If signs are put up at planting time, farmers have an opportunity to observe differences in seedling vigor, stooling, and disease resistance as well as variations in maturity which show up later in the season.

Newspaper Publicity: Farmers in the vicinity should know that a demonstration has been established so that they may make a special effort to observe the progress of the varieties or the effects of the fertilizers. Timely publicity as certain differences become visible will stimulate interest and increase the value of the demonstrations. A summer meeting should be planned at the plots and advance newspaper publicity should be used to notify farmers of such a meeting and to induce them to attend.

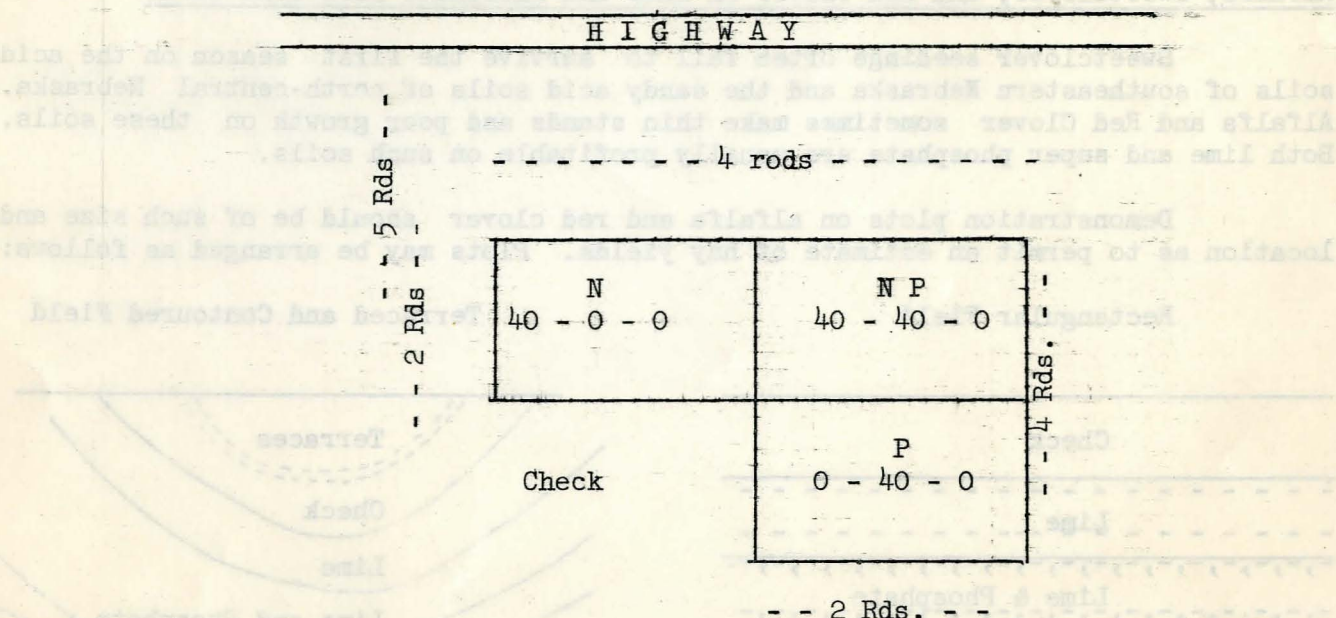
Radio Publicity: Radio publicity should be used where available to supplement newspaper publicity. It is especially good for advertising the meeting which will feature discussing by crops and/or soils specialists at the demonstration plots.

Field Meeting: Crops and soils specialists from the College of Agriculture will be available to meet with farmers at the demonstrations to discuss the results obtained. The desirable and undesirable points of each variety and the value of different fertilizers will be pointed out. Recommendations for the area will be made, and questions which farmers may have will be answered.

ESTABLISHING SOIL FERTILITY DEMONSTRATIONS

M. D. Weldon 1/

Small Grain: Three treatments are recommended for small grain fertilizer demonstrations, viz., ammonium nitrate alone, superphosphate alone, and the two in combination. The surrounding untreated area may be used as a check plot. As a guide, the following diagram is suggested:



The figures in the diagram above represent pounds of nitrogen, available phosphate ($P_{2}O_{5}$), and potash per acre, respectively. For winter wheat, the phosphate should be applied before seeding, and the nitrate about the middle of April. For spring small grains, the phosphate should be applied before seeding, and the nitrate when the crop is 2 to 6 inches high. The grain should be drilled over the entire field including the fertilized plots, but the plots should be well marked with stakes at the corners for easy identification.

Plots should be located 4 rods or more from the field boundary, and at a distance from trees, snow fences, deadfurrows, backfurrows, and other interfering situations.

Corn: The following diagram indicates suggested treatments for fertilizer demonstrations on corn:

(plots 4 rows in width)

0-40-40 pp sd	check	0-40-0 pt sd	check	40-0-0 sd	Check	80-0-0 sd	10-40-0 pt sd
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1/ Soils Specialists, College of Agriculture Extension Service

- pt - Applied at planting time in band at one side of row at a distance of 2 - 3 inches from seed and 2 - 3 inches deep.
 sd - Side dressing, 6 - 10 inches from row at 2nd cultivation on dry land or third cultivation on irrigated land.

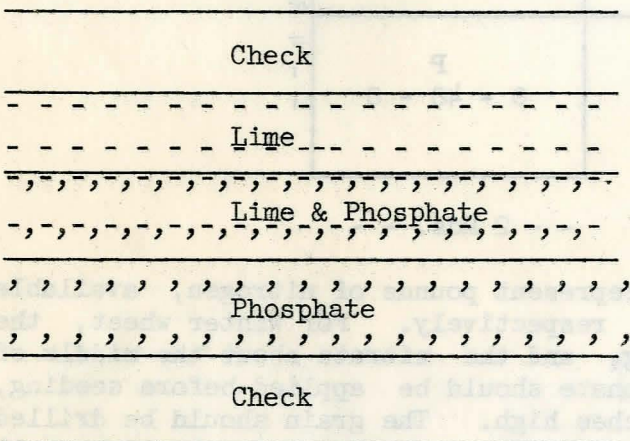
All plots should be located 4 rods or more from field boundaries, and at a sufficient distance from trees, snow fence, deadfurrows, backfurrows, and other interferences.

Alfalfa, Sweetclover, and Red Clover on Lime and Phosphate Deficient Soils:

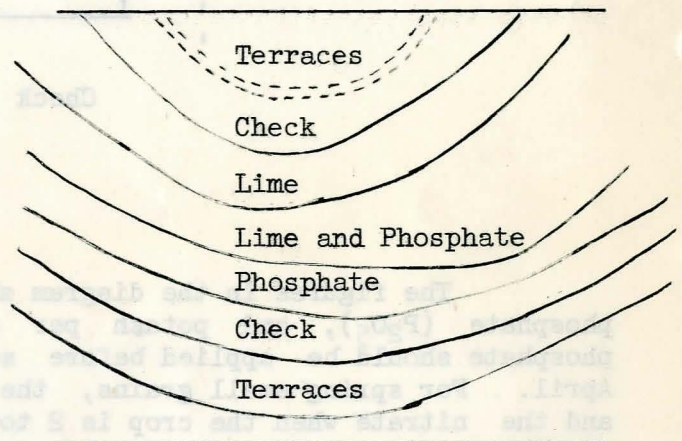
Sweetclover seedlings often fail to survive the first season on the acid soils of southeastern Nebraska and the sandy acid soils of north-central Nebraska. Alfalfa and Red Clover sometimes make thin stands and poor growth on these soils. Both lime and super phosphate are usually profitable on such soils.

Demonstration plots on alfalfa and red clover should be of such size and location as to permit an estimate of hay yields. Plots may be arranged as follows:

Rectangular Field



Terraced and Contoured Field



In the above arrangements, yields of hay may be estimated where a pickup baler is used, by counting bales in each strip. Where the hay is not baled, estimates may be made on the sweeploads of hay from each strip; estimating results on alfalfa and red clover by observation of the standing crop is usually inaccurate and misleading. With sweetclover, observations on the standing crop are often valuable.

Rate of application of lime will vary according to the fineness and purity of the material. Limestone of 80% purity or better, having 80% of 10 mesh or smaller, and at least 20% of 100 mesh or smaller size is satisfactory and should be applied at 2 tons or more per acre, except on soils of sand texture, where one ton or more is sufficient. The lime should be applied several weeks or months before seeding the legume, and plowed under or disked in.

Rate of application of superphosphate should be 40 to 80 pounds of available phosphate (P_2O_5) per acre, at or shortly before seeding time.

Alfalfa and Sweet Clover usually show severe phosphorus deficiency on limy soils. Best results are obtained by applying superphosphate at the rate of 40 to 80 pounds of available phosphate (P_2O_5) per acre at or shortly before seeding.

On established alfalfa stands, late fall or early spring topdressing are effective. Arrangement of plots should be the same as for lime and phosphate demonstration plots, except that a single treatment (0-40-0), or two treatments (0-40-0 and 0-80-0) may be used.

Agricultural Extension Service cannot supply lime and phosphate for the large plots which are suitable for alfalfa and red clover. It will be necessary for the cooperator to supply these materials. It is therefore advisable to submit soil samples to the Extension Agronomist for testing and recommendation, before applying the materials.

Grasses: Sodbound brome grass and other cool season grasses, including native cool season grasses, respond greatly to nitrogen fertilizer applied in late winter or early March. Plots receiving 40 and 80 pounds of nitrogen per acre are suggested.

Warm season grasses respond less markedly than cool season grasses. Established grass stands show little response to superphosphate, but the clover or alfalfa in grass-legume mixtures responds well to superphosphate at the rate of 40 to 80 pounds of available phosphate (P_2O_5) per acre.

CEREAL DISEASE PROBLEMS

J. E. Livingston 1/

Outline for Discussion and Demonstration on Disease Control in

Cereal Crops.

INTRODUCTION

The loss to Nebraska farmers from the smut and rust diseases of small grains in most years will exceed \$5,000,000. The smuts can be effectively controlled and rust can be reduced if proper measures are taken. In addition to the smuts and rusts, considerable loss occurs from root rots in certain areas. Less is known about their control. However, certain types of demonstrations should give interesting results.

The importance of various plant diseases in the various counties can be determined from surveys by local growers, county extension agents, or by the state extension plant pathologist. The diseases to be emphasized in the county crop improvement program can be determined from these surveys and from experience of the previous year.

In carrying out a program for the control of diseases of cereal crops, full advantage should be taken of all the various means of publicity. In recent years excellent cooperation has been obtained from local elevators, newspaper editors, fungicide dealers and millers in putting up displays, running full-page newspaper ads, calling to the attention of farmers the presence of smut in their grain, and even going as far as purchasing and installing seed cleaning and treating equipment. Use should be made of the commercial units in the program to encourage seed treatment. A number of these are being located in the state with elevator men, service companies, individuals, and weed districts. By cooperating with these units it should be possible to keep them operating on a sound basis and practically eliminate the smuts that are controlled by seed treatment.

I. Smuts of wheat, oats, barley, sorghum and corn

1. Discussion topics -

(a) Symptoms and effect of smut

Compare symptoms

Discuss which are seed-borne

Discuss which are controlled by dust seed-treatments

Effect of weather on infection, particularly bunt of wheat

Effect on market quality of the grain

Effect on yield

(b) Control of smuts

Reasons for cleaning and treating

Value of different seed-treatment materials

Time of application, storage following treatment, and danger of feeding treated grains

Availability of resistant varieties and the agronomic merits of each

1/ Plant Pathologist, Extension Service, College of Agriculture

2. Demonstration -

- (a) There are various methods of treating seed. Some are efficient and some are not. In most instances the effectiveness of the treatment is closely related to the care exercised by the operator.

Some of the commonly used treaters are: portable cleaners and treaters, stationary cleaners and treaters, commercial treaters of various types, home-made treaters such as the Minnesota gravity treater, cement mixers, placing the grain and the treating material in the storage bin of a combine, then running the mixture through the elevator into a wagon or bin, and mixing with a scoop shovel.

- (b) The use of the combination cleaner and treater -

This type of equipment is particularly valuable because the grain is cleaned as well as treated. Weed seed, other foreign material, and cracked kernels are removed. This reduces the weed hazard, insures a more uniform stand, and removes the small, shriveled kernels that may carry diseases such as scab. In addition, the grain is treated thus controlling most of the grain smuts and reducing infection from those diseases that cause seedling blights.

- (c) How to apply and use the different seed treatment chemicals -

There are now three common types of seed treatment chemicals. The most widely used is the dust form. The dusts are easy to use but are somewhat objectionable to the operator. The slurry form of treating material is essentially the same in effectiveness as the dusts and is less objectionable to the operator.

Formaldehyde is the only liquid commonly used. It gives satisfactory smut control but is less effective in controlling seedling blights than the dust and slurry materials. Formaldehyde has the advantage that the treated grain can be fed to livestock after it has been thoroughly aerated.

- (d) Field demonstrations -

Bunt of wheat - Inoculate Chiefkan winter wheat, then treat half of the sample and leave half untreated. Plant side by side for comparison. Also, inoculate some Nebred and Pawnee and plant beside the Chiefkan. Pawnee and Nebred are resistant.

Oat smut - A demonstration similar to the above can be made by inoculating Kherson oats then treating half of the sample and leaving half untreated. Clinton or Cedar can be inoculated for the resistant varieties and planted beside the Kherson.

3. Extension Plant Pathologist can:

Provide movie film
Provide kodachrome slides
Provide literature relative to the above topics
Assist at some discussion meetings

Assist in setting up demonstrations
Provide specimens for observation and discussion
Furnish inoculum for demonstrations

II. Rusts

1. Discussion topics -

Compare symptoms of leaf and stem rust of small grains
Compare effects on yield and quality
Effect of environment on rust development
Factors necessary for a severe rust outbreak
The role of barberry in the stem rust picture
The hazards encountered in the development of resistant varieties
Agronomic practices that help reduce rust losses

2. Demonstrations

Wheat - plant Pawnee wheat which has some resistance to stem rust beside Cheyenne.
Oats - Plant Clinton, Cedar and Nemaha beside susceptible varieties such as Kherson, Kanota and Otoe.

Tours can often be arranged which will bring out the advantage, from the standpoint of rust control, of using rust resistant varieties, early maturing varieties that escape serious rust damage, and the hazard of late maturing fields resulting from poor cultural methods such as poorly prepared seed bed. Occasionally the spread of stem rust from barberry bushes can also be shown.

The use of sulfur dust on a rust susceptible variety should prove interesting. There is considerable evidence to show that dusting wheat with sulfur at 5-day intervals beginning about the 15th of June will satisfactorily control stem rust of wheat. If such a demonstration is attempted the sulfur applications must be applied properly and regularly.

3. Assistance from the Extension Plant Pathologist

Provide movie film
Provide kodachrome slides
Provide literature
Provide specimens for observation
Assist in meetings
Assist in setting up demonstration plots

III. Root rots and blights

1. Discussion topics

Symptoms - (Hessian fly confusing)
Effect on crop
Environment influences
Control measures
Rotation
Time of planting
Seed treatment
Seedbed preparation

2. Demonstration

Wheat - Early planting encourages the development of root rot thus planting on several different dates would be desirable.

Information on the use of fertilizers in the control of root rots is meager. A fertilizer test would make an interesting demonstration whether or not there was any effect on root rot development.

A tour of various fields to point out and discuss various cropping sequences, tillage practices, etc., and their effect on root rot development could be arranged.

Oats - Victoria blight of oats has been very serious in the eastern third of the state. A good demonstration of the control of this disease can be set up by planting Clinton, Nemaha, Cedar and Osage side by side in drill width strips. The use of the resistant varieties, Clinton, Nemaha and Marion, is the only satisfactory way of controlling this disease.

GOOSE ROOT WORMS:

1. Encourage better and more practical crop rotation practices.
2. Assist in trial tests of chemical control.
3. Arrange for chemical control tests to be located near crop variety and fertilizer test plots. A field day could be arranged cooperatively.
4. Lay out demonstration in fields known to have high root worm loss the preceding year. Strip treating of the soil, for instance, taking every other 4 rows will show up well in test plots. Treatment need not go more than 100 yards back from the road. At any rate, leave some untreated land for comparison.

SUGGESTIONS FOR INSECT CONTROL

Jack W. Lomax ^{1/}

Insect control is quite often an emergency problem and therefore it is difficult to make scheduled plans ahead of time. Consequently, a more or less generalized outline is given here. Not all of these suggestions will apply to every county association since they are not all faced with the same insect problems. County associations should supplement this outline as they see fit, or as the need arises.

GRASSHOPPERS:

1. Assist in organizing early concerted effort to control young hoppers and egg beds.
2. Assist in organizing community control program. Cooperation is the best aid to a hopper control program.
3. Assist in arousing interest in community survey of infestation to be done by specialists.
4. Publicize and encourage use of bait where available and new chemicals on heavily infested areas.
5. Assist county commissioners on bait preparation project.
6. Keep bait distributors informed of local infestation situations.
7. Assist proper authorities with baiting of roadsides, and fall baiting as a preventative measure.
8. Investigate and cooperate in purchasing of community sprayers, dust-ers, chemicals, etc.
9. Demonstrations of chemical treatment on roadsides, weeds, etc., with benzene hexachloride make spectacular operations and arouse much public interest. For best results apply a dust or spray at least 6 and not more than 12 hours before the meeting. Cover more than a couple of rods in length. A half mile of fence row treated shows up better than a small corner weed patch. Never use forage crops unless it is hay alfalfa or grass left in a trap strip where the hoppers can congregate. When using chlordane or chlorinated camphene on hoppers, allow at least 24, but not more than 72 hours before inviting the public to see it.

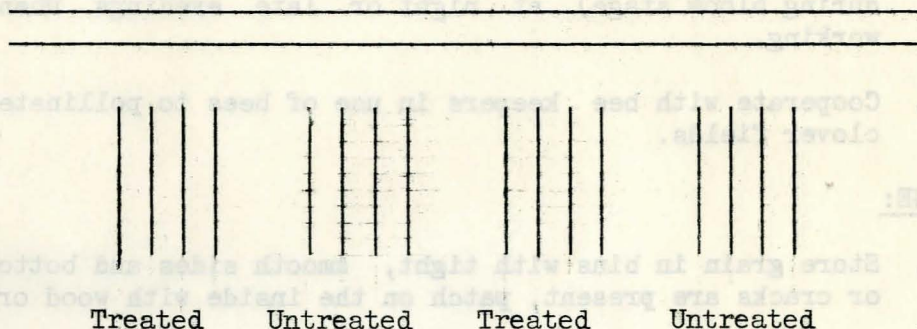
CORN ROOT WORMS:

1. Encourage better and more practical crop rotation practices.
2. Assist in trial tests of chemical control.
3. Arrange for chemical control tests to be located near crop variety and fertilizer test plots. A Field Day could be arranged cooperatively.
4. Lay out demonstrations in fields known to have high root worm loss the preceding year. Strip treating of the soil, for instance, taking every other 4 rows will show up well in test plots. Treatment need not go more than 100 yards back from the road. At any rate, leave some untreated land for comparison.

^{1/} Extension Entomologist, College of Agriculture, Lincoln, Nebraska

SUGGESTED TEST PLOW PLAN FOR CORN ROOT WORM CONTROL

--100 yds. is sufficient--



EUROPEAN CORN BORER:

1. Encourage farmers to plow corn stubble deep and clean to decrease emergence of over-wintering borers.
2. Advocate use of resistant varieties of corn (adapted varieties or hybrids with stalks that remain standing are recommended.)
3. Encourage and publicize regular planting time to promote shortest seasons for spread of borers. (High populations in previous years were found where early planting of corn was practiced.)

HESSIAN FLY:

1. Encourage and practice the planting of approved and resistant varieties, and observing of fly-free date.
2. Advocate destruction of volunteer wheat.

SWEET CLOVER WEEVIL:

1. Encourage and practice planting of new fields well isolated from second year stands.
2. Deep plowing (6 inches) immediately after harvesting a seed crop will destroy the weevils but is also conducive to soil erosion. Hence this practice should be followed only on fields where erosion is not likely to be a factor.
3. Advocate late spring plantings to insure stands in infested areas.
4. Clean and deep plowing (6 inches) of second clover when turning under for green manure in spring.
5. Treating seeding stands with 5% DDT or 10% Toxaphene dust (20 to 25 lb. per acre) for controlling infested areas.

LYGUS BUGS & OTHER ALFALFA INSECTS:

1. Treat when conditions warrant. Treatment for insect control does not insure seed crop.
2. Distribute and study Extension Circular No. 1551.

BENEFICIAL INSECTS:

- A. Encourage treating to control destructive insects at times when bees, wasps and other pollinating insects will be damaged the least.

- B. Treat for insect control in pre-bloom stage of alfalfa (up to 1/10 bloom).
- C. Practice and encourage treating of alfalfa fields (when necessary during bloom stage) at night or late evenings when bees are not working.
- D. Cooperate with bee keepers in use of bees to pollinate alfalfa and clover fields.

GRAIN STORAGE:

- 1. Store grain in bins with tight, smooth sides and bottoms. If holes or cracks are present, patch on the inside with wood or tin.
- 2. Before putting a new crop in an old bin, it should be thoroughly cleaned and sprayed with 5% oil solution, DDT, or 2% wettable dust DDT.
- 3. Fumigate or treat seed when infestations discovered.
- 4. Store dry grain; when less than 10% moisture is present a minimum of insect damage results.
- 5. Keep loose grains, bran, grain dust, etc., from collecting around and under the bin. Many insects breed in such trash. Sanitation around the grain bin is a big aid to storing clean grain.

ANNUAL MEETING AND FARMERS DAY

D. L. Gross 1/

The holding of an interesting annual meeting and farmers' day is a good way to stimulate interest in county crop improvement association projects.

1. Time of Meeting

January or February (Avoid first week in February because of conflict with Organized Agriculture.) Suggest an all-day meeting with community luncheon, program could include High School Band, interesting speakers, and representatives of local community groups, businesses, etc.

2. Recognitions

Primary interest should be given local farmers for outstanding practices and results. Introduce at meeting, encourage participation in panel discussions, etc.

Include:

1. New members in county association
2. Winners in state or county corn yield contests
3. Cooperators on whose farm test plots were located

Remarks from farmers having experience with:

1. Rotation pasture on brome-grass-alfalfa
2. Comparative contour and non-contour yields
3. Irrigated sudan pasture
4. Use of silage to replace pasture
5. Silage from alfalfa and sweet clover
6. Barn drying of alfalfa hay
7. Yield comparisons of varieties
8. New types of crop rotation
9. Grassland awards
10. Certified seed

3. Speakers:

1. Insect Control
2. Soil Conservation
3. Use of Fertilizers
4. Regrassing
5. Sub-tillage -- Stubble Mulch
6. Weed Control
7. Plant Diseases
8. Certified Seed Production

4. Annual Business Meeting:

1. Election of officers
2. Reports
3. Roll Call

(Discussions by specialists or local farmers with actual experience)

1/ Extension Agronomist, College of Agriculture, Lincoln, Nebraska

(Suggested)

Constitution and By-Laws for

County Crop Improvement Association

C. R. Porter 1/

ARTICLE I.

Name

This organization shall be known as the _____ County Crop Improvement Association.

ARTICLE II.

Purpose and Activities

1. To assist the county agricultural agent in encouraging the use of seeds of adapted varieties for certified seed production, and to assist in carrying on educational work, publicity, etc., for improving the agronomic practices and furthering agricultural interests in the county.

2. To cooperate with the Nebraska Crop Improvement Association, the Nebraska Grain Improvement Association and the Agricultural Extension Service in furthering their respective crop improvement programs.

3. To ascertain amounts of certified seeds needed of recommended crop varieties and to attempt to make such seed available to farmers in the county through members of the association.

ARTICLE III.

Membership

1. Under the terms and conditions prescribed by the by-laws, this Association may admit into membership any person, partnership or corporation interested in the betterment of Nebraska Agriculture.

2. Members whose dues are paid and who otherwise are in good standing as defined in the by-laws shall be entitled to one vote at any regular or special meeting of the members of the Association. Votes shall be cast in person, and no membership shall be transferable.

ARTICLE IV.

Board of Directors

1. The business of this Association shall be conducted by a Board of Directors, all of whom shall be active members of the Association.

1/ Secretary, Nebraska Crop Improvement Association.

2. Board members shall be empowered to adopt by-laws for the conduct of business and to amend same. By-laws shall be subject to approval and change by majority vote of membership at any regular or special meeting.

ARTICLE V.

By-Laws

The by-laws shall provide for regular annual meetings and special meetings of this Association. They shall provide for a quorum for the conduct of business and the method of voting. There shall be no voting by proxy. They shall also provide organization and election of directors and the conducting of the business.

ARTICLE VI.

Amendments

The Constitution of this Association may be amended at any annual meeting or special meeting called for that purpose by a two-thirds majority of those present, provided notice of the special meeting shall be given to each member by mailing to him, at his last known post office, at least ten days before the time when such meeting shall be held, a copy of the proposed amendment/s.

(Suggested)

BY-LAWS OF THE _____

County Crop Improvement Association

ARTICLE I.

Purpose

The purpose for which this association is formed is set forth in the Constitution.

ARTICLE II.

Directors and Officers

Section 1. The business of this Association shall be controlled by a Board of Directors with five members, each of whom shall be an active member of the Association.

Election of directors shall take place at the annual meeting of the members and shall be by ballot. Insofar as possible, all crops certified in the county shall have actual representation on the Board at all times.

The directors shall be elected for a term of two years, and two or three shall be elected each year, excepting to fill a vacancy which shall be for the remainder of the unexpired term. Directors shall hold office until their successor/s have been elected and qualified and have entered upon the discharge of their duties. No director after having served for two consecutive terms shall be eligible to succeed himself, but after a lapse of one year shall again be eligible.

Section 2. Election of Officers: The Board of Directors shall meet immediately after their election and shall elect by ballot a president, vice-president, secretary, and a treasurer, who may or may not be a member of the Association. The office of secretary and treasurer may be held by one and the same person. Each of these officers shall hold office until the election and qualification of his successor, unless earlier removed by death, resignation, or for other cause.

Section 3. Vacancies: If any vacancy shall occur in the Board of Directors, other than from the expiration of a term of office, the remaining members of the Board shall appoint a successor to hold office until the next regular or special meeting of the members of the Association.

Section 4. Quorum: A majority of the Board of Directors shall constitute a quorum at any meeting of the Board, but no motion shall be declared carried unless it shall receive three favorable votes.

ARTICLE III.

Duties of Directors

Section 1. Management of Business: The Board of Directors shall have general supervision and control of the business and the affairs of the Association and shall make all necessary rules and regulations not inconsistent with law or with these By-Laws for the management of the business and the guidance of the officers and employees of the Association.

Section 2. Meetings: The Board of Directors shall meet at such times and places as will be set by the Board. Special meetings of the Board shall be held upon call of the president or upon request of a majority of the members of the Board.

ARTICLE IV.

Duties of Officers

The duties of the officers shall be those commonly incident to their respective offices.

Each officer of the Association upon being superseded in office shall turn over to his successor all books, papers, and properties of the Association that may be in his possession.

ARTICLE V.

Quorum

One-third of the members shall constitute a quorum for transaction of business. If, upon meeting, one-third of the members are not present, the meeting shall be adjourned from time to time, but upon the second meeting or any meeting thereafter, business may be transacted.

ARTICLE VI.

Fiscal Year

The fiscal year shall be January 1, to December 31.

ARTICLE VII.

Membership

Membership shall be open to any person interested in the crop improvement program in the county. Admittance to membership must be approved by the Board of Directors.

ARTICLE VIII.

Dues

All members shall pay an annual membership fee of one dollar. If membership is discontinued, reinstatement is possible only by approval of the Board of Directors.

ARTICLE IX.

Meetings

Section 1. Annual Meeting: The annual meeting of the members for the election of Directors and transaction of any other business shall be held on the last week of January or at a time within sixty days thereof and at a place designated by the Board of Directors.

Section 2. Special Meetings: Special meetings of the Association may be called at any time by the order of the Board of Directors or on a written request of 10 per cent of the members, provided that in no case the required number of signatures for such a request be less than five (5). The request shall state the time, place, and object of the meeting.

Section 3. Notice of Meetings: Written or printed notices of meetings for every regular or special meeting shall be prepared and mailed to the last known post office address of each member not less than ten days prior to the date of such meeting. At special meetings, no other business shall be transacted except that stated in the notice.

Section 4. Order of Business: The order of business for the annual meeting shall be:

1. Roll Call
2. Proof of notice of meeting
3. Reading and disposal of minutes
4. Annual reports of officers and committees
5. Election of Directors
6. Unfinished or old business
7. New business
8. Adjournment