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THE 4-H GRAIN SORGHUM CLUB

4-H CLUB CIRCULAR 38

COLUMBIA, Mo.

JANUARY, 1931



COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS

UNIVERSITY OF MISSOURI COLLEGE OF AGRICULTURE AND THE UNITED STATES
DEPARTMENT OF AGRICULTURE COOPERATING

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Distributed in furtherance of the Acts of Congress of May 8, and June 30, 1914

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THE 4-H GRAIN SORGHUM CLUB

Requirements

Object.—The object of the grain sorghum club is to organize boys and girls into groups for the purpose of demonstrating approved methods of producing and harvesting grain sorghums, uses of the crop, and to train the members in leadership.

Work Required.—Each club member is required to raise not less than one acre of grain sorghum, (a five acre demonstration field is recommended), use approved cultural practices and keep complete records.

Records Required.—Each club member is required to keep an accurate account of all operations, expenses, receipts, etc., as called for in the record book furnished by the Extension Service of the Missouri College of Agriculture.

Ownership Required.—Each club member is required to own the crop and to be responsible for the demonstration field, and to secure his own seed, fertilizer, and any tools necessary for cultivating the crop.

Time Required.—Time for necessary work to produce the crop.

Time for attendance at six or more club meetings.

Time necessary for making local exhibit.

Time for attendance at an achievement program at the close of the work for the year.

Organization.—The club should be organized in March or April and all reports should be completed by November.

(Judging work is not required in this project.)

ORGANIZATION OF THE CLUB

A standard 4-H Grain Sorghum Club is composed of a group of five or more boys or girls from the same community between the ages of ten and twenty-one years, who are working upon the same grain sorghum project under the direction of a local leader,

Grain Sorghum Clubs should be organized only in communities where there is a definite need for the crop. For example, in areas of low soil fertility or where dry weather often affects the yield of corn, Grain Sorghum Clubs have a definite place, but where

*Prepared by C. E. Carter, Extension Specialist in Field Crops, in collaboration with J. Ross Fleetwood, State Club Agent.

soil fertility and moisture conditions are suitable for good corn yields, Grain Sorghum Clubs have no place.

Meetings.—Standard clubs are required to hold at least six regular club meetings during the club year. These meetings may be held as often as the local leader and the members desire, however, meetings are usually held once each month.

Below are suggested subjects for a number of club meetings. It may be necessary to devote more than one meeting to some of the subjects. It is suggested, however, that these subjects be followed in the order named. Local leaders are expected to adapt these suggested subjects to local conditions.

Suggested Meetings.

I. Organization of the Club.—(See Club Secretary's Record Book.)

1. Business meeting.—The local club leader in charge.
 - (1) Explanation of the duties of the club officers and members. (See the Club Secretary's Record Book.)
 - (2) Election of officers from the membership of the club: President, Vice-President, Secretary, Song and Yell Leader, and Reporter.
 - (3) Selection of a name for the club. (It is suggested that the name be selected so as to identify the club and the project.)
 - (4) Selection of a time and place for regular club meetings.
 - (5) Appointment of a committee to work up or select an appropriate song and yell for the club.
 - (6) Adjournment of the business meeting for instruction in project work.
2. Instructions.—The local club leader in charge.
 - (1) Distribution of club literature and the record books and explanation of their use.
 - (2) Explanation of the standard 4-H club requirements. (See Club Secretary's Record Book.)
 - (3) Explanation of the club project requirements. Page 3.
 - (4) Setting one or more club goals such as:
 - a. Every member will carry out project as recommended by the Missouri College of Agriculture.
 - b. Every member will attend all meetings.
 - c. Every member will exhibit, keep records and demonstrate.
 - d. Every member will endeavor to help the club meet the standard club requirements 100%.
 - (5) Giving a brief statement of the main club events for the year, as:
 - a. Holding six or more regular club meetings.
 - b. Giving club team demonstrations before a public audience.
 - c. Planning to take part in local fairs.
 - d. Planning to attend and take part in the State 4-H Club Round-up at the Missouri College of Agriculture.
 - e. Other activities as worked out in the community.
 - (6) Assignment of work for the next meeting.
 - a. Assignment of the national 4-H club pledge to be learned by

all members before the next club meeting. (See the pledge in the suggested outline for the second club meeting.)

- b. Assignment of topics to be used in response to roll call at the next club meeting, as:
 - (a) Name the varieties of Grain Sorghum best adapted to Missouri conditions. See page 10.
 - (b) Name a standard 4-H club requirement and give one or more good reasons for the requirement.
 - (c) Give the conditions under which the grain sorghums are a better crop to grow than corn. See page 9.
 - (d) Give the proper time, rate and method of seeding.
 - (e) Give the amount and kind of fertilizer to use.
3. Social hour, games, etc.

II. Club Meeting—Selection of Variety, Plot and Method of Seeding.

1. The business meeting.—The club president in charge.

Duties of Club Officers. (See Club Secretary's Record Book.)

 - (1) Meeting called to order by the president who leads the club members in repeating the National 4-H club pledge, as follows: "I pledge my head to clearer thinking, my heart to greater loyalty, my hands to larger service, and my health to better living, for my club, my community, and my country."
 - (2) Roll Call by the secretary, the members responding by reporting on the previously assigned topics.
 - (3) Reading of the minutes of the last meeting by the secretary which should be adopted as a permanent record by the club when approved.
 - (4) Unfinished business:
 - a. Report of the committee on club songs and yells.
 - b.
 - (5) New business:
 - a. Appointment of a social committee.
 - b.
 - (6) Songs and yells, led by the song and yell leader.
 - (7) Adjournment for work.
2. Instruction and demonstration.—Local leader in charge.
 - (1) Discussion: See pages 9 to 11.
 - a. Selecting the plots.
 - b. Kind of soil.
 - c. Preparing seed bed.
 - d. Fertilizers and manure.
 - e. Plowing.
 - f. Selecting variety of seed.
 - g. Time, rate, method and depth of seeding.
 - (2) Demonstration on preparing planter for planting.
 - (3) Explanation of how to start records.
 - (4) Assignment of work for next meeting.
 - a. Bring record books.
 - b. Study cultivation and insect pests. Pages 11 to 12.

- c. Assignment of topics to be used in response to roll call, as:
 - a. Name a standard 4-H club requirement not previously given in response to roll call and a good reason for the requirement.
 - b. Each member names the variety of seed planted.
 - c. Give the reasons for cultivation.
 - d. Give the optimum depth of cultivation and reasons why depth given is best.
 - e. Name some of the insect pests of grain sorghums and give brief methods of control.
3. Social hour, games, etc.

III. Club Meeting—Cultivation and Insect Pests.

1. The business meeting.—The club president in charge.
 - (1) Meeting called to order by the president who leads the club in repeating the club pledge.
 - (2) Roll call by the secretary, the members responding by reporting on previously assigned topics.
 - (3) Reading of the minutes of the last meeting by the secretary.
 - (4) Unfinished business.
 - a. Report of the social committee.
 - b.
 - (5) New business:
 - a. Anything for the benefit of the club.
 - b.
 - (6) Songs and yells.
 - (7) Adjournment for work.
2. Instruction and Demonstrations.—The local club leader in charge.
 - (1) Discussion:
 - a. Cultivation
 - (a) Purposes
 - (b) Depth
 - (c) Frequency
 - b. Insect pests
 - (a) Chinch bugs.
 - (b) Sorghum midge
 - (2) Demonstration.—Control of insect pests.
 - (3) Assignment of work for the next meeting.
 - a. Schedule of tour.
 - b. Study of score card of grain sorghum plots.
 - c. Preparation of plots for the tour.
 - d. Assignment of topics to be used in response to roll call, as:
 - (a) Name a standard 4-H club requirement not previously given in response to roll call and give one or more good reasons for the requirement.
 - (b) Outline briefly the method of scoring a field of grain sorghum.
 - (c) Give three ways of feeding grain sorghum.
3. Social hour, games, etc.

IV. Club Meeting.—Field Tour. Page 13.

1. Business meeting.—The club president in charge.
 - (1) Meeting called to order, the members repeating the 4-H club pledge.
 - (2) Roll call, members responding by reporting on the previously assigned topics.
 - (3) Unfinished business:
 - a. Report of any standing committee.
 - b.
 - (4) New business:
 - a.
 - b.
 - (5) Songs and yells.
 - (6) Adjournment for work.
2. Instruction and demonstration.—The local club leader in charge.
 - (1) Discussion:
 - a. Observations made on field tour.
 - b. Scoring of fields. Page 13.
 - (2) Demonstrations:
 - a. Scoring or judging a field of grain sorghum.
 - (3) Assignment of work for the next club meeting.
 - a. Assignment of topics to be used in response to roll call, as:
 - (a) Name a standard 4-H club requirement not previously used in response to roll call and give one or more good reasons for the requirement.
 - (b) Give the best method of harvesting.
 - (c) Give methods of storage.
 - (d) Give feeding value as compared to corn.
 - (e) Outline briefly the method of determining the yield per acre.
 - (4) Demonstration. The utilization of grain sorghum for feeding purposes.
3. Social hour, games, etc.

V. Club Meeting.—Determining Yield, Harvesting, Storing.

1. Business meeting.—The club president in charge.
 - (1) Meeting called to order by the president, who leads the club members in repeating the 4-H club pledge.
 - (2) Roll call by the secretary, the members responding by reporting on the previously assigned topics.
 - (3) Reading of the minutes of the last meeting by the secretary.
 - (4) Unfinished business:
 - a.
 - b.
 - (5) New Business:
 - a.
 - b.
 - (6) Songs and yells.
 - (7) Adjournment for work.

2. Instruction and demonstrations.—The local club leader in charge.
 - (1) Discussion:
 - a. Determining yields, page 14.
 - b. Harvesting, page 15.
 - c. Utilization, page 16.
 - (2) Individual tryouts for the club demonstration team.
 - (3) Assignment of work for the club achievement day, as:
 - a. Bring completed record books.
 - b. Give complete detailed instructions as to duties, responsibility and conduct at achievement exercises.
 - c. Appointment of committees for achievement program.
3. Social hour, games, etc.

VI. Club Meeting.—The Grain Sorghum Club Round-up.

The club round-up should be held at the close of the work for the club year. Each member should hand in to the local club leader the completed record book so that the results of all the work of the club can be summarized in the back of the Club Secretary's Record Book.

Suggested Public Program.—The local club leader in charge.

- (1) Exhibit of grain sorghum by the members. An explanation of the placings should be given by the judge, if time permits.
- (2) Regular meeting of the club. Each member should respond to roll call by giving a summary of his grain sorghum work.
- (3) A short talk on the work of the grain sorghum club for the year. This explanation may be given by the local club leader, by a member of the local grain sorghum club committee, or by the extension agent.
- (4) Team Demonstrations. The club demonstration team should demonstrate approved practices which have been learned in the grain sorghum club work.
- (5) Awards. Each member who completes the work is eligible to receive a 4-H Club achievement pin, if given.
- (6) Plans for continuing grain sorghum club work for the next year.

Suggestions

Only club members who make a complete report or have their records up-to-date should be eligible to take part in county, state, inter-state or national club contests, club camps, etc.

The events of the club achievement program and the results of the club work for the year should be carefully prepared and offered to the local newspapers for publication.

SELECTING THE PLOT, PREPARING THE SEED BED, SELECTING THE VARIETY, PLANTING THE SEED

SELECTING THE PLOT

Size of Plot.—The size of the plot should not be less than one acre and preferably five acres. It is a good plan for the club member to have a considerably larger plot than this in order that he may select the best acre or five acres at harvest time. An acre consists of 43,560 square feet.

The shape of the plot must be either square or rectangular and not more than four times as long as wide.

Kind of Land.—The better the land the more successful a crop of sorghum will be. However, under most conditions, grain sorghum will be grown on land which is either too thin or too arid for good corn. Therefore, in Missouri most of the grain sorghum clubs will be in communities where the growing of corn is not dependable. The club member can expect to grow a larger yield of grain sorghum on this type of land than he could grow of corn. In selecting the piece of land for the club member's crop, he should select the best land possible under his conditions.

PREPARATION OF THE SOIL

Manure and Fertilizers.—Since grain sorghum feeds heavily on the fertility of the soil, the club member will do well to consider very carefully the advisability of applying manure and fertilizer to his land where it is extremely poor. Manure furnishes not only organic matter to the soil but fertility as well. The organic matter in the soil will increase its water-holding capacity thus having a tendency to carry the grain sorghum over the dry spells in the summer. When manure is applied, from 8 to 10 tons should be applied before plowing.

Manure is rich in the element nitrogen, and low in phosphorus. Therefore, an application of 25 to 40 pounds of fertilizer high in phosphorus per load of manure will usually increase the yield. The fertilizer is spread on top of the manure before applying it to the field.

Plowing.—In preparing the seed bed it is best to disk the land before plowing to destroy the weeds and mix the organic matter with the soil to prevent the land from plowing up cloddy.

Fall plowing is usually advisable when the land does not wash badly during the winter. This allows the soil to become well compacted and the manure to decay partially before planting time. For these reasons, fall plowing is especially desirable on sod land. Allow the fall plowed land to go through the winter without disking to prevent washing, to increase its capacity to absorb rain and melting snow, and to allow the freezing and thawing of winter to break down the rough exposed surfaces into a fine mellow condition for the seed bed. When land is fall plowed, it should be disked or harrowed in the spring as soon as dry enough. Otherwise, so much moisture will evaporate in the spring before planting that the crop is apt to suffer from lack of moisture. Early disking or harrowing will help to conserve the moisture.

Spring plowing should be done as early as possible to allow time for the soil to settle. The later in the spring the plowing is done the greater the necessity for working the soil into a firm compact seed bed by disking and harrowing. On late plowing it is best to harrow each day's plowing as soon as it is done in order to prevent loss of moisture.

If any considerable number of weeds appear in the spring on either the fall or spring plowed land, they should be destroyed by disking before they get too large and waste the soil moisture. The depth of plowing will depend upon the soil. On the deeper soils the land should be plowed deeper. Fall plowing should be deeper than spring plowing.

SELECTING THE VARIETY OF GRAIN SORGHUM

Although you may have prepared the seed bed perfectly for a good crop, the yield may be disappointing unless you have good seed of an adapted variety. The three most popular grain sorghums are Blackhull Kaffir, Milo and Feterita. There are other varieties of grain sorghum grown more or less in Missouri but for most conditions where grain sorghums are grown the kaffirs are best adapted. Of these, a strain of Blackhull Kaffir known as Sunrise is the one which has given best results in our Ozark Experiment Station. Therefore, Sunrise kaffir is recommended for 4-H club work wherever it is possible to get the seed.

PLANTING THE SEED

Grain sorghum is usually planted in rows three to three and a half feet apart. Three to five pounds of seed per acre are used.

The plants of Sunrise kaffir or feterita should stand 8 to 10 inches apart in the row and the plants of milo 6 to 8 inches apart in the row. On very fertile soil the plants can stand somewhat thicker. The corn planter is the best implement to use in planting grain sorghum. The only change that is necessary is to use a special plate instead of the regular corn planter plate. These can be secured from the makers of all standard corn planters. The seed should be planted comparatively shallow. Two to two and a half inches being sufficient on most soils.

Cultivation, and Insect Pests

CULTIVATION

Purpose of Cultivation.—The purpose of cultivating grain sorghum is to destroy weeds. Other less important purposes are:

1. To conserve soil moisture.
2. To enable rainfall to penetrate the soil easily.
3. To set free or make available additional plant food.
4. To bring about better aeration of the soil or to supply air to the soil.

Ordinarily enough cultivation to keep down weeds will produce these latter results and is all that is necessary to produce most satisfactory yields.

Methods of Cultivation.—If after planting the seed, weeds appear, or the ground becomes crusted over, a harrow should be run over the field in order to destroy the little weeds and to break the crust. The harrow can be used to destroy weeds even after the sorghum is up if care is used not to injure too many of the small plants. In order to accomplish this, set the teeth of the harrow pointing backward and drive at an angle to the rows and not parallel to them.

Cultivation should be started early and the weeds destroyed while they are small and shallow rooted. The crop should be cultivated often enough to prevent the weeds from developing deep, large roots which will stop the moisture that is needed by the crop.

Depth of Cultivation.—Do not cultivate too deeply. If the crop is cultivated frequently, it will not be necessary to cultivate deep in order to destroy the weeds. Deep cultivation destroys the surface roots of the crop and usually results in decreased yield. This is particularly true in case of a severe drouth. The crop

should be cultivated frequently enough to keep down weeds. Ordinarily it is not necessary to cultivate the crop late in the season.

The difference in cultivating sorghum and corn is in the fact that grain sorghum starts slowly in the spring and great care must be used in early cultivation not to cover or in any way injure the young plants. Otherwise, the cultivation of grain sorghum and corn is very similar.

Field Meeting or Tour

After the grain sorghum is well headed out, the club should not fail to hold a series of field meetings on the various crops. A tour should be made from one member's crop to the other. Each member should score each of the other crops of the boys in the club according to the following score card.

Score Card for Judging Grain Sorghum Fields of 4-H Members

1. Seed Bed	30
(1) Preparation	15
(2) Condition	15
2. Variety	5
3. Cultural Practices	25
(1) Shallow Cultivation	10
(2) Cleanliness	15
4. Uniformity of stand	10
5. Appearance	10
(1) Evenness of Growth	5
(2) Color	5
6. Yield *	20
TOTAL SCORE	100

*Where fields are to be judged before harvest, score on the basis of 80 points for perfect performance.

When either yield or height of plant is to be considered the judging committee will consider yield or height only in relation to fertility of soil as shown by average corn yields, actual or estimated, of that or a similar soil. For example, a crop on 40 bushel corn land may be much larger, and may heavily outyield a crop on 20 bushel corn land, whereas the boy using the 20 bushel land may have done a very much better job considering the soil fertility factor. These factors must be weighed and fairly adjusted by the judging committee.

On this tour, the local leader and the county extension agent and if possible, a specialist from the Missouri College of Agriculture will go on the tour and give instructions to the members in scoring of each of the crops.

Determining the Yield, Harvesting, Storing

DETERMINING THE YIELD

One of the important parts of club work is determining the yield of your plot. At harvest time the grain sorghum plot should be accurately measured and the yield correctly determined. The best way of determining the yield is to cut the heads off the plot and weigh all the heads.

1. To determine the yield of dry grain sorghum weigh out 100 pounds of sorghum heads. Place the heads on a frame, string up in a loft or arrange in some manner so that they will dry thoroughly without being injured by birds, chickens or other animals.
2. When dry, weigh again and record the weight. Thresh the grain out of the dry heads and weigh the grain. Record this weight as the per cent of dry grain. Multiply the total weight of the heads from the plot by this per cent. The result is the yield in pounds of dry grain from the plot. Divide this weight by 45 (the weight of a bushel of grain sorghum in Missouri) which gives the yield in bushels per acre.

If the entire plot cannot be harvested and weighed, the following plan will give the yield correctly.

Select in the field at representative, and separate places, a total of six rows. Measure off 175 feet on each row and cut the heads from the measured portions of these rows. Weigh the heads and determine the yield of dry threshed grain as above under 1 and 2. The result is the yield in bushels of dry threshed grain from the selected rows.

Decide from the following table what fractional part of an acre the six rows represent.

Distance between fractional rows	fractional figure*	Distance between fractional rows	fractional figure*	Distance between fractional rows	fractional figure*
2 feet 0 in.....	20.743—	2 feet 9 in.....	15.086—	3 feet 5 in.....	12.156
2 feet 1 in.....	19.913+	2 feet 10 in.....	14.642+	3 feet 6 in.....	11.852—
2 feet 2 in.....	19.147+	2 feet 11 in.....	14.224—	3 feet 7 in.....	11.577
2 feet 3 in.....	18.438+	3 feet 0 in.....	13.829—	3 feet 8 in.....	11.314+
2 feet 4 in.....	17.779+	3 feet 1 in.....	13.455—	3 feet 9 in.....	11.063
2 feet 5 in.....	17.167—	3 feet 2 in.....	13.101—	3 feet 10 in.....	10.822+
2 feet 6 in.....	16.594+	3 feet 3 in.....	12.762—	3 feet 11 in.....	10.592+
2 feet 7 in.....	16.059—	3 feet 4 in.....	12.446—	4 feet 0 in.....	10.371+
2 feet 8 in.....	15.557+				

*This number will be the number below the line in the fraction which shows the part of an acre six rows, 175 feet long, make of the width given opposite.

Multiply the weight of the dry threshed grain from the six rows by this fractional figure.

The result will be the number of bushels of dry threshed grain per acre.

Six rows each 175 feet in length (1,050 feet of row) represents the following fractional part of an acre. The fraction in each case is one over the number given: Thus, 1

20.743

To illustrate the method of determining the yield per acre, we will propose the following case:

The weight of grain sorghum in the head from six rows is 387 pounds. The distance between the rows is three feet, four inches. The 100 pounds of grain sorghum in the head when dried out and threshed weighs 50 pounds, which is the amount or per cent of threshed grain. Fifty per cent of 387 is 193.5 pounds.

This number divided by 45 equals 4.3 bushels multiplied by 12.446 (fractional part of an acre which the rows 3 feet, 4 inches apart represent) equals 53.52 bushels of dry threshed grain sorghum per acre on the field under consideration.

HARVESTING

If the yield is determined by cutting off all the heads from the field, of course the harvesting is already done. But, if the yield is determined by taking only a fractional part of the field, the club member may want to harvest his crop by cutting it up and shocking it like corn. In that case it should be cut and harvested as corn would be and shocked in the field where it will be allowed to dry until it is fed.

STORING

In order to thoroughly cure and store grain sorghum, the heads should be strung on a string or laid on boards in a dry, well aerated place. Hanging the heads in the barn or in a shed is satisfactory. If the club member has a considerable acreage of the crop like 5 acres, then, of course, stringing it is impractical. In this case it can be put in an open crib like corn if care is used to prevent it from packing too closely until it is thoroughly dry. In order to prevent too close packing in the crib, a good method is to take poles or rails and cross them through the crib at intervals.

UTILIZATION

After the heads are thoroughly dry, if put in a crib or dried in the field if the crop is cut, it can be threshed in an ordinary threshing machine. In case the heads are cut off, they are allowed to run through the machine like wheat or oats. In case they are still on the fodder the heads are stuck into the cylinders and as soon as the grain is knocked off, the bundle is thrown aside. In case the grain is fed to poultry, hogs or sheep, the heads can be fed without threshing if desired. On most farms, the latter method is followed.

The feeding value of threshed grain sorghum is comparable to shelled corn, being about 90 per cent as efficient.

Grain sorghum may be fed to poultry up to 50% of the grain ration, provided the rest of the grain ration is yellow corn. In the grain ration the grain sorghum may be fed in the head. It may also be used in the laying mash, up to 25 per cent, replacing the shorts in the mash.

In feeding dairy cattle, grain sorghums may be substituted for corn in the ration. They should, however, be ground either in the head or as threshed grain.

For hogs grain sorghums may be used to replace corn, in a properly balanced ration, with good results. The grain should be ground preferably but if used unground should be fed in the head since the hogs will chew the small grains better this way than when fed as threshed unground grain.

For beef cattle ground grain sorghum heads have been found to be equal to ground snapped corn.

For sheep feeding the grain sorghum heads have given nearly as good results as feeding corn and is to be recommended over feeding as threshed grain or ground.

INSECT PESTS

Chinch bugs and sorghum midge are the worst enemies of grain sorghums.

Chinch bugs attack grain sorghum the same as they do corn in seasons favorable for development. They are very difficult to control when they appear in abundance and the same methods for controlling them are used as with corn.

Sorghum midge, sometimes called blast, attacks grain sorghum in some seasons and if in large numbers may completely destroy the heads. The only known method of control is the use of early varieties. The Sunrise variety is as good as any other for avoiding this pest under Missouri conditions.

Reference.—Summer Chinch Bug Control Extension Service Circular No. 176.

Grain Sorghum Club Round-up

DEMONSTRATIONS

The Demonstration as a Method of Learning and Teaching.—In so far as possible, all club members should be instructed in the regular club meeting by the demonstration method. As a usual thing, one or more members of each club can begin doing before the club useful phases of the work program soon after the processes have been demonstrated to the club by the club leader.

After two or three months of practical experience in handling real things, all mature club members should be able to give public team demonstrations. The scope of the team demonstration usually should be limited to the essential processes of one phase of the club work of the current year. A team of two or three of the best demonstrators, according to the number needed, should be selected from the membership of one club by individual try-outs in competition.

All teams should have an opportunity to demonstrate before the local club group and the people of the home community, and the championship team should represent the local club at the county round-up, if one is held.

SUGGESTED SUBJECTS FOR TEAM DEMONSTRATIONS

1. Value of grain sorghums under adverse conditions.
2. Utilization of grain sorghums.

Any approved practice may be demonstrated which lends itself to demonstration methods of presentation.

SUGGESTED OUTLINE OF TEAM DEMONSTRATIONS

Utilization of Grain Sorghums for Feeding Purposes

Team.—Two members from one club designated in this outline as "A" and "B".

Reference.—The Grain Sorghum Club circular.

Equipment needed.—A bundle of grain sorghum fodder, some threshed sorghum grain ground. Some grain and head ground together, charts and if possible equipment for threshing on a small scale.

Time.—Fifteen to twenty-five minutes.

Procedure

A Speaks and Demonstrates

Leads in repeating the 4-H club pledge; gives a brief history of the club; introduces his teammate and himself; and then states the problem on which the team will demonstrate; namely, "Utilizing grain sorghums for feeding purposes."

1. State conditions under which sorghums are profitable:
 - a. Low soil fertility.
 - b. Drouth areas
 - c. Comparative yields.
2. Gives feeding value as compared to corn.
3. Demonstrates how to prepare for poultry feed:
 - a. May be feed in head up to 50% grain ration.
 - b. When threshed and ground may replace shorts up to 25% of mash ration.
 - c. Practically equal to white corn.

B. Assists

Joins in giving the pledge.

Stands at attention.

Exhibits chart if possible showing comparative yields.

Exhibits chart if possible showing comparative value.

Secures material and helps to Demonstrate. Exhibits chart showing place in grain and mash rations.

A Assists

Quietly collects demonstration equipment and gets in readiness to assist further with demonstration.

Prepares sample of head and grain ground together for showing.

Prepares sample of grain threshed and ground for showing.

B Speaks and Demonstrates.

1. Gives place in ration for:
 - a. Horses
 - b. Dairy cattle.
 - c. Hogs.
 - d. Sheep.
2. Explains necessity of grinding:
 - a. Increases palatability.
 - b. Increases digestibility.
3. Demonstrates method of heading and grinding head and grain together.
4. Demonstrates method of threshing and grinding grain alone.

Summarizes briefly the points made in the demonstration:

1. Adaptability to adverse weather conditions.
2. Feeding value as compared to corn.
3. Preparation for feeding various kinds of live stock.

Asks for questions, concludes demonstration by thanking audience for attention.

Stands at attention.

Answers questions regarding his part of Demonstration.

SCORE CARD FOR JUDGING DEMONSTRATION TEAMS IN MISSOURI

	Perfect Score	Actual Score
1. Subject Matter -----	30	
(1) Importance of the subject-matter presented and relation to fundamental problems of home or farm.		
(2) Accuracy of statements made in oral presentation and proper methods in doing the work.		
(3) Completeness with reference to the giving of all steps necessary to clear understanding of process.		
(4) Clearness and definiteness of statements made in simple language easily understood.		
(5) Replies to practical questions. Judges' questions only should be considered in team scores. Team should give authority for subject-matter presented.		
2. Team Work -----	20	
(1) Preparation, arrangement and use of materials. The team will be responsible for the arrangement and preparation of equipment and its use.		
(2) Organization of work, each member in so far as practical to be kept busy with a definite part so that the work and instructions given will proceed without delay, but each member of the team should be able to demonstrate the whole process.		
(3) Appearance and conduct of the team. Appearance and conduct include the personal appearance of the members, and of the team as a whole. They should be businesslike, pleasant and, in so far as possible, a unit in action and appearance.		
(4) The team member not actually directing the demonstration should reinforce the point at hand or at least should not detract from the theme of the demonstration.		
3. Skill -----	20	
(1) Ease in procedure.		
(2) Workmanship and efficiency of manipulation.		
(3) Neatness and cleanliness in doing work.		
(4) Speed, system or dispatch.		
4. Results -----	15	
(1) Effect upon the audience, and also upon materials used in the demonstration, as may be shown in the finished product.		
(2) All processes made clear.		
5. Practicability -----	15	
(1) Value of principles given for the home and community.		
(2) Actual club practices shown.		
Total Score-----	100	

Date-----Demonstration Team-----

Signed -----(Judge)

