Montana State College of Agriculture and Mechanic Arts and the U. S. Department of Agriculture, Cooperating.

PROGRAM FOR LOCAL POTATO CLUBS IN MONTANA.

Meeting II.
1. Roll call and minutes of last meeting read by secretary.
2. Discussion of lesson assigned at Meeting I—The best variety of potatoes for the locality. To secure cooperative marketing and standardization, ask advice of the county agriculturist, if there is one in your county. Invite him to this meeting.
3. Plan for leader to secure seed potatoes locally, or otherwise, of the variety decided upon. In Fergus, Cascade, Teton, Hill, Missoula, Dawson, Custer and Flathead counties, ask advice of the county agriculturist.
4. Assign lesson on When and How to Plant Potatoes, and on Measuring 1-8 acre or 1 acre, as decided upon. (See Suggestions for Potato Club Members on page 3 of this circular.)
5. For Meeting III each member must hand in his diagram of 1-8 acre.
6. Announcements, etc. Date for next meeting.

Meeting III.
1. Roll call and minutes of last meeting. Discussion of variety of seed potatoes.
2. Discussion and correction of 1-8 acre diagrams.
3. Have a farmer or the county agriculturist give a lesson on cutting potatoes for seed, or follow directions in bulletin (Growing Potatoes in Montana, which will be sent on application to the Experiment Station, Bozeman, Montana) or see Suggestions to Potato Club Members on page 3 of this circular.
4. For meeting IV have each club member select his 1-8 acre or 1 acre and draw a plan of the home farm, showing the location of his club plat. Get the interest and help of parents.
5. Announcements.
Meeting IV.

1. Roll call and minutes of last meeting.
2. Correction of diagrams of home farm showing location of club plat.
3. Assign lessons on How to Prepare Soil for Planting Potatoes, (see Suggestions for Potato Club Members.)
4. Invite a farmer or the county agriculturist to give advice and to start the discussion for meeting V on How to Prepare Soil.
5. Announcements.

Meeting V. Last Day of School, at Closing Exercises.

1. Invite parents; interest them in club work.
2. Plan fall exhibit of potatoes at school house with prizes for best exhibits, greatest profit, best composition on "How I Grew My Crop."
3. Plan to have a basket lunch and play festival for September or October, 1916.

SUPERVISION AND FOLLOW UP WORK.

Reasons for, and Importance of,—In 1915 success in club work was largely attributed to supervision and follow up instruction. At the early part of the season there is always greater enthusiasm up to the time of planting and first cultivation of crops; then as farm work gets harder and the sun gets hotter and other attractions come, there is frequently a waning of interest.

The Time for Follow Up Work—About June 1st is the time for parents to use their influence and for the club leader to call a meeting. Have club members tell how their crop is coming on. If possible, take photographs or get the club members to photograph their 1-8 acre or acre plat at different stages for discussion at meetings or for their compositions.

The importance of a Social Meeting in Midsummer.—Call a social meeting and have a base ball game or some form of picnic or basket lunch. For girls, arrange with the State Leader to give a canning demonstration; have mothers and girls bring in vegetables, serve lunch, and have a play time in the afternoon. Such plans are being made this year in Fergus, Cascade, Hill, Custer, Dawson, Missoula and Teton counties, where there are county agriculturists to arrange such meetings and bring out the State Leader. If you are in one of these counties, write your county
agriculturist at once concerning club work. The State Leader plans to give some personal supervision and club demonstrations in these counties.

How to Supervise—The county agriculturist and State Leader plan to give some time to supervision, but this will be limited. The ideal way is for the local leader to visit at least once during the season the club plat of each member, to give advice and encouragement and to interest parents and farmers in the club acre. In North Dakota five years ago people said you could not raise corn; but in 1914 68 boys had a yield of over 100 bu. per acre. In Montana in 1915 they said the same thing in many sections. In some sections of Montana they no longer say this because club boys have shown them yields. Remember, club work is for demonstration purposes as well as to help the individual member to grow crops at a profit and to learn home making. The club motto is to “Make the Best Better,” and to “Pass the Good Word Along.”

Mother-Daughter and Father-Son Relation—Brings best results. The local leader will try to secure this relation wherever possible. Results in club work and in community work are secured at the same time. In many Montana counties men’s cooperative organizations have grown out of Boys’ Clubs for marketing and growing potatoes. Every boy likes to work with Dad and every girl likes to work with Mother. If you have time, let’s get this most valuable assistance. Nobody can take the place of father or mother in the child’s education.

SUGGESTIONS FOR POTATO CLUB MEMBERS.

POTATO SOILS.

It is well to remember that the quality of potatoes is determined as much, if not more, by the soil in which they are grown as by any other factor. In other words, with a poor potato soil, it is almost impossible to grow potatoes that are smooth and uniform in shape and size, or potatoes with good cooking qualities. Of course, potatoes will grow on almost any soil, but if you have a choice and want to grow good potatoes, select that which is rather sandy. Choose a soil that can be worked soon after a rain without sticking to tools. If the soil on the farm is all black and heavy, a good application of well rotted manure will improve it. Fresh manure should not be used upon land which is to be planted at once to potatoes, for it is thought to have a tendency to increase
the amount of scab. If manure is used, it should be applied at least one year before potatoes are to be planted.

The best potato land is newly broken alfalfa or clover sod. If such land is available you need not use manure. Do not attempt to grow potatoes on the same land two years in succession. Potatoes do well on land previously cropped with garden or field peas.

PREPARATION OF LAND.

It is a good plan to plow alfalfa or clover sod in the fall. In the spring, work it up well with the disk and replow just before planting. After this spring plowing, the land needs about one double disking and one harrowing with a spike tooth harrow. Disk and harrow before the soil has a chance to dry after the plowing. Old land may be plowed in the spring just before planting, a double disking and harrowing completing the preparation. Heavy land may be benefited by both fall and spring plowing, while rather sandy soil plowed in the fall may not need spring plowing. On the dry farm, especially where the soil is from medium to light, fall plowing gives better results than spring plowing.

VARIETIES.

Some of the best early varieties are Early Ohio, Early Triumph, Irish Cobbler, and Early Rose. Burbank (Russet and White) and Pearl are good late varieties. The Russet Burbank is very resistant to disease and is also of high quality.

SELECTING SEED

In selecting potato seed, pick out the tubers with shallow eyes and those of the typical shape of the variety. The typical shape would be the type most commonly produced by the variety you are growing. Do not select those that are pointed at the seed end. A pointed end generally indicates that the seed is running out. In most varieties, it is best to choose tubers that are flat rather than round, and short rather than long.

In many varieties ideal tubers have the cluster of eyes on one side rather than right at the seed end of the potato. One should always select seed potatoes at digging time. As the potatoes lie in the field after digging, go over the rows first and pick out the very best potatoes for seed. One can get a much better selection in this way. You should select from sixty to seventy-five pounds of seed to plant a tenth of an acre.
TREATING SEED.

If there is any scab on the potato seed, it should be treated. Soak the uncut seed for two hours in a solution made up of one-fourth of a pint or one fourth of a pound of 40 per cent formalin, and seven and one-half gallons of water. This should be enough to treat seventy-five pounds of seed at one time. Put this in a barrel or tub and drop the potatoes in either loose or in the sack. After two hours take them out and spread them out to dry. Do not put them back in the same or other dirty sacks unless the sacks are treated with the seed.

STARTING SEED.

Potato seed should be stored in a cool cellar, where it will keep until at least the first of May without growing any sprouts. If you have such storage and the potatoes are dormant, they should be started before planting time. Such seed germinates quickly when planted, and the young plants are less likely to be injured by disease. Better stands are secured and the crop is ten days earlier.

To start the potatoes, lay them out in a thin layer on the barn floor, granary floor, or any place where they will get some heat and plenty of light but will not freeze. The sprouts will start but they will be short and stubby and will not be knocked off in planting. It will take three or four weeks to start dormant seed. Potatoes that have grown long white sprouts in the cellar should have these rubbed off and then be started like dormant seed.

CUTTING SEED.

Under most conditions it is best to cut potatoes in about two ounce pieces. On the dry farm it may be advisable to use a little larger seed piece. Each piece should have at least one eye. It is a good plan to cut the seed from end to end so the cluster of eyes at the seed end will be divided. A half pound potato should be cut into four pieces lengthwise, and a potato weighing a pound should be cut into four pieces lengthwise and then cut crosswise to make eight pieces. Never cut the seed until you are ready to plant it.

PLANTING.

Early potatoes may be planted as soon as the ground can be prepared, but they should not be planted so early as to have the plants frosted. If experience shows that you may expect frost up until the middle of May, do not plant before May 1. Potatoes
that are to be irrigated should be planted in rows at least three feet and nine inches apart with the seed pieces dropped one in a place and fifteen inches apart. The seed piece should not be planted any deeper than necessary to get it into moist soil. Potatoes to be grown without irrigation should be planted at least four inches below the surface of the ground. They can be planted in furrows from four to six inches deep and covered with only two or three inches of soil. The furrow can be filled completely after the plants are up. The rows need not be over three feet apart and the plants should be eighteen inches apart in the row.

**CULTIVATION.**

Irrigated potatoes should be given deep cultivation and each time a little more dirt should be thrown up over the ridge. At the time the first water is applied, these ridges should be at least ten inches high. If the cultivator available will not ridge up this high, the final ridging may be done with a plow or better with a lister. Non-irrigated potatoes should be given level cultivation. This should not be deep, but should be frequent enough to keep down weeds and maintain a surface mulch. If the potatoes form near the surface of the ground, the plants may be slightly ridged at the last cultivation. After the vines cover the ground, cultivation is not necessary.

**IRRIGATION.**

First have the ground in proper condition for irrigation as described under cultivation. If possible, do not irrigate until the potatoes are set (this will be about blooming time), but the plants should not be allowed to wilt. In many varieties, tubers which have started to ripen for lack of moisture, will grow knobs when water is applied. Plan to irrigate early enough to avoid any check in growth. Run a small stream of water in the bottom of each furrow, and run it long enough to moisten the ground well. In many parts of the state one irrigation will be sufficient. Remember that late irrigation retards ripening and produces potatoes with poor cooking qualities. Where frosts may be expected early in September, late potatoes should not be irrigated after the first of August.

**DIGGING.**

Potatoes should be carefully dug to avoid any injury to the tubers. Bruised or cut tubers are unfit for exhibition or storage. On exhibition they will be scored down for blemishes and in storage
they are likely to rot. It is best to dig small plots with a fork, keeping well away from the vine to avoid cutting any of the tubers. Pick the potatoes up as soon as dry and always handle them carefully.

**STORAGE.**

Potatoes are best stored in cool cellars. They may be stored either in sacks or bins, and these, as well as the cellar, should be clean. It is well to leave the cellar open at first so the potatoes will cure, or dry out. The best temperature for storage is from thirty-two to thirty-five degrees.

**THE POTATO BUG.**

This is really the only insect that troubles potato vines in Montana. The old beetles appear almost as soon as the vines are up in the spring. These are seldom numerous enough to cause really serious damage. They may be picked off by hand, and this, if done soon enough, may save spraying for the young slugs which appear later. The young often appear in such numbers as to strip all the leaves off of the vines. When they begin to hatch from the clusters of yellow eggs which are usually laid on the underside of the leaves, dust the plants with Paris green. At first these young are very small, soft-bodied insects which appear almost black in color. They grow very fast and later they are more red than black. Their appetites grow even faster than they do so do not neglect the dusting too long. The Paris green can best be applied with a powder sprayer, but it can be sifted on from a cheesecloth bag. If the poison is mixed with about four times its bulk of flour, it will go farther. Dust the plants well. A pound of Paris green should be ample to dust your 1-8th acre plot twice. Remember that this material is very poisonous and should not be left in reach of small children or animals.

**SELECTING AND PREPARING POTATOES FOR EXHIBITION.**

It is a fact that those who grow the best potatoes do not always win the prizes and the reason for this is that they do not exhibit their best potatoes. First select potatoes of medium, rather than large size. In most varieties, those weighing a pound are large enough. Select those of uniform size and shape. One small or one large potato, or one of poor shape, spoils the whole exhibit. Select tubers with shallow eyes and those free from disease or injuries of any kind. In other words, if you are exhibiting twelve potatoes, have them all
the same size, the same shape and all free from blemishes. Gather them carefully, wash them carefully (a sponge is better than a brush), dry them, wrap each in paper and keep in a cool, dark place until they are placed on exhibit.

REPORT RESULTS TO MISS AUGUSTA EVANS, BOZEMAN, MONT