

More Cabbage Ought to Be Produced in the Salem District, and a Great Cabbage Shipping and Manufacturing Industry Ought to Grow Up Here

THE CULTURE OF CABBAGE, CAULIFLOWER AND OF KALE

The Directions Given by Mr. Gill, for the Benefit of the Growers for Dehydration in the Salem District

(Following is a circular that was distributed last year among the growers for dehydration by the Salem King's Products Co., the author being R. W. Gill of Gill Bros., the Portland seedsmen.)

In general practice throughout the United States it is the custom to grow cabbage, cauliflower, kale, etc., by the transplanting method and it is, therefore, very important to grow the right kind of a plant to produce a good crop. Poor stands are usually the result of poor plants and much of this loss can be eliminated by the proper attention to growing the plants.

Location—A well-drained location is best but the soil should not be too rich. Those grown on rich soil make a rapid growth producing tall, soft-stemmed plants, which are not sufficiently hardy to stand transplanting especially in warm weather. Any common garden soil if not too weedy will do for growing plants but do not enrich it with any fertilizer other than land plaster; sprinkle this along the rows when the plants first come up.

Time to Plant—This is dependent on the crop to be grown. Thus, if early cabbage is to be grown for fall planting the seed should be planted from August 15 to September 1. These are transplanted in November. For the earliest spring setting the seed should be planted September 10 to 20, leaving these plants to winter over for early spring planting. Plants can be started under glass in January and February and transplanted when ready. These, however, are not nearly as hardy as the wintered-over plants and are much more expensive. However, this is the proper way to grow early cauliflower plants for spring setting. Seed can be grown in the open ground about April 1 and these plants will be available to set June 1 for the July and August crop. For the main winter crop the seed should be planted about May 1. These will be ready for transplanting about June 25 to July 15. For late July setting the seed can be planted as late as May 20.

How to Plant—Have the seed bed thoroughly prepared so it is mellow,

and free from clods. Plant with a good seed drill in rows about one foot apart. Put the seed in quite thickly just about like you would plant radish seed or about three seeds per inch of space. For fall seeding the best results are obtained by planting the seed in drills between rows of corn, leaving the old stalks to protect the plants against cold winter winds. The seed should be planted from one-half to three-quarters of an inch deep according to the amount of moisture available and the weather prospects. Mark the different varieties carefully so there will be no mixture at planting time.

Cultivation—With the fall seedlings no hoeing or cultivating is necessary and very little is required for the spring planting. These will need only one good hoeing with a two wheeled hand hoe running the knives as close as possible to the row. This hoeing should be done within 10 days after the plants are up. Except for the large type of weeds do not remove them from the row as they will be of value in hardening off the plants. What we desire most is a strong, well-hardened plant such as will resist the heat when transplanting. Let the soil in the seed bed become quite dry when planting time is near at hand. This will cause a splendid growth of roots, which when transplanted to moist, well-cultured soil can be relied upon to take hold and grow rapidly.

Application—This article refers to methods of growing cabbage, cauliflower, kale, brussels sprouts, and broccoli plants with the exception that the Erfurt types of cauliflower such as Snowball, Gilt Edge, Best Early, and Dry Weather need entirely different culture. This type of cauliflower plants are more difficult to grow and need careful attention. They require good soil for a seed bed and must be permitted to make a steady growth. If they become stunted they will produce immature or fool heads. It is important then that they be not checked by weeds or drought and that they be transplanted at once when they reach the proper size. For early cauliflower varieties can be planted in a hot bed in January or February but the late or main crop is best when the seed is planted on good, moist, carefully prepared soil about June 10. These should be transplanted July 20 to 25.

Dipping the Plants—It is a great mistake to set out this class of plants without first dipping them to eliminate aphids and other pests. The following formula gives excellent results at low cost: Shave up a bar of common Savon or any yellow laundry soap and put this in an old kettle; add about one pint of boiling water and heat until thoroughly dissolved; add one-fourth pint of coal oil; stir well and add four gallons of lukewarm water. The solution is now ready for use. Take a good handful of plants and dip the roots into water, then grip the plants by the roots and dip the foliage into the solution, transferring this at once into clear rinsing water. A five-gallon coal oil can is very handy for the emulsion and two other cans or buckets are also needed—one for dipping the roots and one for rinsing. Change the latter frequently to keep the water clean from soap. This treatment will clean out all insect pests and hold them back until the plants are well established. Aphids have been so detrimental in recent years that it pays to use every precaution against them. Killing them off at the start will stop them from multiplying and will let the plant get such a start that they usually outgrow the pests.

It has never been fully demonstrated why the wife insisted upon having a few small rugs instead of a carpet on the floor in the dining room. That is, unless she desired to see friend husband do the highland fling.

UNCLE SAM TELLS HOW TO GROW CABBAGE IN THE GARDEN

Late Cabbage May Be Planted July First in Some Sections and Mature Solid Heads Before Storms of Winter

(The following is the matter under the heading of Cabbage in "The City Home Garden," being Farmers' Bulletin 1044 of the United States Department of Agriculture.)

"Early Cabbage—Only a few heads of early cabbage should be grown in a small city garden. The plants may be started indoors, but may be set in the garden quite early if hardened off a little before setting them. In certain sections of the south, especially near the seacoast, the early varieties of cabbage may be started in October, planted out in November, and matured in April or May of the following spring. The Jersey Wakefield and the Charleston Wakefield are the leading early varieties. They may be set in rows 24 to 30 inches apart and 15 inches apart in the row.

Late Cabbage—Late cabbage can be planted between the rows of early

THE OREGON AGRICULTURAL COLLEGE ON THE LATE CABBAGE INDUSTRY HERE

Proper Soils, Varieties, Methods, Harvesting and Marketing, Yield Per Acre, Cost of Production, Control of Insect Pests, and Other Useful Matter.

(Following is Circular 86 in full of the Oregon Agricultural College on "The Growing and Marketing of Late Cabbage," its date being February 6, 1918; the United States Department of Agriculture co-operating in furnishing the data and conclusions.)

Soils—This crop is not adapted to a soil which does not hold moisture well during the summer and fall months, unless there be a possibility of irrigation. Moisture capacity, therefore, is an important essential. Well drained soils will produce a crop that can be marketed longer in the fall and winter than where the crop is grown on lower locations. Much of the best late cabbage grown in this state is produced on well fertilized upland soil, having a capacity of holding moisture in the summer. Large yields are obtained from many different kinds of bottom soils and swales, that are well drained. There is also a large acreage of dyke lands which are capable of producing large quantities of cabbage in profitable yields. Soils which are high in organic matter will usually produce large cabbage which gives a heavy tonnage. Cabbage lands should preferably be free from acidity; applications of lime correcting this condition in the soil. It is not wise to plant cabbage on land which has a steep slope or which has been farmed for a long time to various kinds of field crops, the fertility of which land, therefore, is somewhat run down. The success in growing the crop is largely dependent upon the amount of available moisture in the soil, and hence where there is no possibility of irrigation special care must be exercised in selecting lands for this crop.

Varieties and Plant Growing—For the main fall and winter crop Danish Ball Head is best. Oregon grown strains of this variety seem to give superior results as compared with those from imported seeds. Danish Round Head is an early strain of Danish Ball Head. One of the best varieties for home use for winter is the Giant Green Savoy, which is an especially excellent cabbage for cold slaw and for cooking.

Methods of plant growing vary considerably with individual growers. In order that the plants may be cultivated and kept clean when in the seed bed, the seed should be sown about May 1 in well prepared out door beds. In some localities the seed is sown broadcast which is more difficult to do properly than sowing the seed in straight rows. Seed which is sown broadcast should be on as clean ground as possible, otherwise the plants cannot be cultivated or weeded out. The soil in either case should be worked down fine and smooth following which the seed can be drilled in thinly so that the plants will afterwards stand about an inch apart in the row, and the rows from eight to ten inches apart. Crowding of the plants in the rows causes a restricted growth of the roots and there will be a less stocky top. It is usually advisable to make at least two sowings of seed, the one about May 1 and another about ten days or two weeks later, in order that there may be plenty of plants for use in an emergency. The seed should be covered only lightly, not more than one-half inch. It is best to sow cabbage seed after a rain rather than before a heavy rain because of the possibility of the land being packed together if the rain follows the seeding. It is best to sow about twice the amount of seed as will ordinarily be required so that about one-half of a pound of seed should be sown for every acre of cabbage which is expected to be set. If there is a surplus of plants these can usually be sold and there is a much better chance of making a good selection of good healthy stocky plants if there are a large number of plants from which to choose.

Soil Preparation and Fertilization—Cabbage land should be fall plowed if possible and allowed to lie in a rough state during the winter. In

this way more moisture will be held by the soil than otherwise. In the spring at the first opportunity the land should be worked down and manure at the rate of ten tons per acre should be evenly scattered over the soil and lightly plowed or else thoroughly disked in. Many growers make a practice of using some commercial fertilizer as well as the manure, inasmuch as the crop is a very heavy user of potash as well as nitrogen and phosphoric acid. The solidity of the heads is very largely dependent upon the amount of mineral element in the soil. Most Oregon soils, however, are well supplied with this phosphoric acid and potash. In a good many cases, cabbage yields may be increased by the application of lime, not less than one ton per acre being applied. It is very important that the soil be worked down in as fine condition as possible in the spring in order that as much moisture as possible may be retained for the crop during the summer. The cost of soil preparation is not excessive and if more time were put on this phase of the work better results would be obtained.

After the time of transplanting in the latter part of June, the soil should be constantly stirred to keep a light mulch on the surface or stirred as soon as the ground is in working condition after a rain.

Transplanting from the Seed Bed to the Field—This work should be done preferably in cool weather. The

plants are best when about six inches high although it is better to observe good weather conditions rather than the size of the plants as to a definite height. The season of the year at which the cabbage plants are set in the field is usually about the 20th to the 25th of June, up to the first of July, depending upon the weather conditions and the moisture in the soil. If the weather is dry and settled it would be best to set the plants in the afternoon beginning after 3 o'clock. The plants should be protected from the hot sun and before being lifted from the seed bed should be thoroughly wetted down in order that some soil may adhere to the roots. As far as to the distance apart to set plants is concerned it is customary to have the rows about three feet apart and the cabbage about 20 to 25 inches apart in the rows. For small to medium heads the rows may be three feet apart and the plants at from 20 to 24 inches apart in the rows. The distance apart the plants will be set will depend very largely upon the fertility of the ground and the ability to hold moisture during the summer time.

Cultivation—Cabbage land should have a light mulch during the summer which is kept up by cultivation every 12 or 14 days or more often if there be summer showers. There will be very little hand work necessary in hoeing.

Harvesting and Marketing—In

FACTORS WHICH INFLUENCE THE TONNAGE OF LATE CABBAGE

Prof. Bouquet Gives Some Valuable Information and Timely Hints That Should Be Read by Every One Trying to Grow Late Cabbage in Oregon

(The following very timely and instructive article, on "Factors Which Influence the Tonnage of Late Cabbage," by Professor A. G. B. Bouquet, of the Oregon Agricultural College, and who is editor of the garden department of the Pacific Homestead, published from the Statesman building, appears in this week's issue of that paper.)

The greater the yield of cabbage in the field the less the overhead charge per ton of production. It is therefore not only the more money which the farmer will get for the greater tonnage delivered to the market or the factory but the actual cost of production is less when the tonnage is above the normal.

First and foremost is the question of the character of the seed. There are comparatively few really good strains of Danish seed. I mean strains that have a heavy yielding pedigree back of them, having produced in the past as many as 15 to 20 tons per acre. There are hundreds of strains which not only fail to give much weight to the head but also fail to give a large percentage of heads that will actually make a head. One of the reasons that some cabbage growers fail to make much from the crop is due to their not supplying themselves with the seed of high yielding strains. Cabbage heads with tightly folded head leaves, and small cores are those which greatly increase tonnage.

Second in importance is the fine condition of the ground which should hold moisture well and be worked down in such a way that the plants take a hold very quickly after being transplanted. Manure and commercial fertilizer are both recommended for cabbage and I see no reason why the latter fertilizer should not give good results if the soil is not worked down fine so that the fertilizer will get into the top few inches during the growing sea-

son. A lot of cabbage has gone by the boards the past few years, due to the dry summer which in itself is sufficient indication that the big factor is the moisture in the soil and the conservation of the same from the beginning of the spring. For this reason it pays to spend a lot of time in working the soil down to a fine degree before field setting.

Good plants, free from insects either at the root or on the leaves, are essential. The plants should be large and vigorous, yet not tall and spindling. The leaf surface can be trimmed well previous to field setting and if the plant is not soft and succulent it should respond quickly to the treatment given to it after it is set.

Deep setting, so that the roots of the plants get down into the ground when they are set quite deeply, and will not be so subject to winter freezing. The cabbage maggot which is liable to affect the plants either in the seed bed or in the field is best controlled by using a solution of corrosive sublimate or bichloride of mercury, one part to 1000, or at the rate of 1 ounce to 6 gallons of water, or 1 pint to 125 gallons. This mixture is made up and put into a barrel carried along the rows in a hack or small wagon. One or two lines of hose are led from the hole in the barrel and the material in the barrel is led to the plants through the hose, a stopcock being provided with each lead so as to gauge or apportion the amount of poison to be applied to each plant, which should be from 1/4 to 1 pint. Care should be taken that some of the corrosive solution come into contact with the leaves of the plant, but merely put on the soil in the form of a circle around the plant. This has proven to be the most effective material so far used in controlling the maggot in the field when the plants were already infested.

DATES OF SLOGANS IN DAILY STATESMAN (In Twice-a-Week Statesman Following Day)

Loganberries, Oct. 9.
Prunes, Oct. 18.
Dairying October 22.
Flax, October 30.
Filberts, Nov. 6.
Walnuts, Nov. 13.
Strawberries, Nov. 20.
Apples, November 27.
Raspberries, December 4.
Mint, December 11.
Great Cows, December 18.
Blackberries, December 25.
Cherries, January 1, 1920.
Pears, January 8, 1920.
Gooseberries, January 15, 1920.
Corn, January 22, 1920.
Celery, January 29.
Spinach, February 5, 1920.
Onions, February 12, 1920.
Potatoes, February 19, 1920.
Beets, February 26, 1920.
Mining, March 4, 1920.
Goads, March 11, 1920.
Beans, March 18, 1920.
Paved highways, March 25, 1920.
Broccoli, April 1, 1920.
Silos, April 8.

Legumes, April 15.
Asparagus, April 22.
Grapes, April 29.
Drug Garden, May 6.
Sugar beets, May 13.
Sorghum, May 20.
Cabbage, May 27.
Poultry and Pet Stock, June 3.
Sheep, June 10.
Dehydration, June 17.
Hops, June 24.
Wholesaling and Jobbing, July 1.
Cucumbers, July 8.
Hoeing, July 15.
Paper Mill, July 22.
Wood Working, July 29.
National Advertising, August 5.
Flowers, Bulbs and the City Beautifol, August 12.
Seeds, August 19.
Land, August 26.

(Back copies of Salem Slogans editions of the Daily Oregon Statesman are on hand. They are for sale at 5c each, mailed to any address, if ALL are taken; price for first 20 copies, 10c each.)

(It will interest some people to know that these back copies are selling fast—that, nearly every day, orders are received from near and distant points for the whole series. They will be sold out before the fifty-two Slogans are completed, without doubt.—Ed.)

marketing the cabbage crop it is a good thing to divide up the land so that a wagon road may be laid out in order that the cabbage may be quickly loaded from the field into the wagon. The demand on the market is usually for four to five pound cabbage. Solidity of heads is also an important factor in the question of marketing. If the cabbage is going to be sold to a contractor it may stand in the field longer than if it is going to be sold on the open market. Also there is very little necessity for grading if the cabbage is to be sold to the factory, but where the cabbage is to be sold in the fresh state on the market it is necessary to have the heads graded for size. Canneries and kraut factories usually will contract on an average price of from \$12.00 to \$15.00 per ton.

Yield of Cabbage per Acre—This factor will depend very largely on the soil conditions and the care that has been given to the crop. It is necessary that cabbage land yield from six to seven tons before expenses for growing are paid. Average returns are usually from 10 to 18 tons per acre. Some yields from 20 to 25 tons per acre are sometimes reported, but these are obtained only under unusual conditions.

Cost of Production—The various items in producing cabbage will total from \$75 to \$90 per acre. Some of the most expensive items are the most important, such as seed, preparation of ground and the growing and setting of the plants. Especially important is the question of the strain of seed that one obtains in growing the crop. The price for sufficient seed for an acre is nothing compared with the results that are obtained where one uses a high yielding strain.

Insects Affecting Cabbage and Control of Same—There are quite a number of important insects that

feed on the cabbage and in most cases these can be successfully controlled. The insects of greatest importance are the green cabbage worm, the cabbage maggot, the flea beetle, the cut worm, grass hopper, cabbage aphid, and slugs or snails. The Department of Entomology of the Oregon Agricultural College has a complete list of sprays and dusts that can be used for successfully combating the various sucking and chewing insects. This may be obtained from the College Exchange. It is ordinarily impossible to successfully grow a crop of cabbage unless one fights these pests or in some cases the soil conditions may be of such a character as to produce a very rapid growth in which case the growth of the plant may be so rapid as to offset the work of the insects.

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