

light, rich, sandy loam. Prepare your seed-bed as early in spring as convenient, and be sure that it is fully enriched by manures. For all my seed beds I have at least three inches of well-rotted manure forked into the soil, and then they are thoroughly raked with a fine-tooth iron rake, taking out every stone and pebble and every lump of soil.

Plant cauliflower seeds from the middle of April to the middle of May, being careful to sow them and cover lightly. When the plants are four or five inches high, which will be a month or five weeks after the planting of the seeds, set them out in the rows three feet apart and two feet apart in the row, for the Snow-ball; for the Erfurt, three feet by three feet should be the distance.

As the cauliflower is a rank grower, it will need plenty of good manure, (the more the better), and not less than twenty-five or thirty tons per acre. For my early crop, I put on at least seventy-five tons per acre of the best horse manure I can get, and it pays too. If you use commercial fertilizer, do not use less than fifteen hundred pounds per acre, and plow it under the same as you would manure. Commercial fertilizers, when only harrowed in, are of not much benefit to plants that are set out, for, of necessity, their roots are below the fertilizer at the very start.

#### Setting out Apple Trees.

Before setting a young orchard, it is necessary that the soil should be properly prepared. Deep fall plowing would be improved by subsoiling, and the spring tillage should be thorough, and a liberal supply of manure should not be overlooked. If the soil is not well drained, the land should be well ridged up and the trees planted on the summit of the ridges.

It requires great skill to mark out the rows sufficiently straight with the plow. Poles should be used when a number of them can be easily procured. Make the holes sufficiently roomy for the extension of the roots, setting the largest roots towards the northwest in order to stiffen the trees against the breezes. Spread the roots as much as possible, so long as they are not placed in too horizontal a position, which will cause them to grow too near the surface. Place the main roots in such a position that they will grow half way between the horizontal and the perpendicular line, or say an angle of 45°. When the trees are deficient in roots, plant them a few inches deeper than they stood in the nursery rows, which will give them a firmer stand. Tramp the soil about the roots moderately firm.

With regard to the distance apart, much depends upon the soil and variety. The same variety will grow larger in a rich than in a poor soil. The smaller varieties may be set 25 or 30 feet in rows each way, and the larger growers 30 to 40 feet. It is better to err in placing them too far apart than too close together. When the trees are set good distances apart, aided by proper pruning, the fruit will be higher colored and higher flavored, which makes it more marketable.

In all cold climates, apple trees should be set out in the spring; they should be received for planting in a good condition, and should be planted with all possible speed after their arrival. If your time is limited, you should thoroughly prepare the ground and dig the holes in the fall.

#### Growing Celery.

Celery is one of our most nutritious and delicious vegetables, and should be grown in every farmer's garden. Being put on the table in its raw state, it possesses a great advantage over the cooked vegetables; for, like fruits, vegetables that can be eaten raw are more wholesome, especially when a large bulk of what we eat consists of cooked food.

Celery requires a rich soil and heavy manuring. The seed may be sown as early as the ground can be worked to advantage. Sow in small beds and keep clean until the time comes for transplanting. Unless your seed merchant is a reliable man, from whom you are sure to get good seed, your best plan is to buy the plants from a neighbor or on the market in your nearest town, and you will thus be spared the annoyance of having bad luck with your seed. The plants may be set out in July. It has been the custom to set the plants in trenches dug 6 or 8 inches deep; but experiments have shown that there is little or no advantage in the trench system. They may be planted on the level ground, like other plants, and afterward banked up. Under any system of planting, the plants should not be covered too deep, merely enough soil being used to cover just to the depth of the roots.

The practice of celery growers differs very widely as to the distance between the rows, and the distance apart between the plants in the row. Much depends upon the character of the soil, the quantity of manure applied, and the kind of plant you want to raise. For show purposes or for the market, make the distances apart greater; for the plants will then grow coarser and larger, but if you want a delicious article for your own table, put the plants closer together in the rows, leaving sufficient space between the rows to do the banking up. In field culture on a large scale, the rows are usually placed 6 feet apart, and the plants 12 inches apart in the row, the plants being set out early in June, and are sometimes transplanted the second time on land from which an early crop has been taken. The plants may be set as close as 4 or 5 inches apart, and 3 or 4 feet between the rows. A light soil is best, being more easily banked, and the manure should be well rotted and well mixed with the soil.

#### Field Cultivation of Potatoes.

No soil can be got into a mellow condition for potatoes than an old sod. The land should be manured in the fall, and plowed about the first of October. In spring it should be cultivated several times, and there is nothing that will pay better than a liberal dressing of unleached ashes thoroughly incorporated with the soil by the cultivator and harrow. The potash in the ashes is the best fertilizer for the potatoes, and the lime, of which the ashes contain about 35 percent, helps to decompose the vegetable matter, making it more available for food. Besides, the mechanical effect of ashes in mellowing the soil is very great.

The rows should be marked out three feet apart each way, thus avoiding the necessity of using the hoe. A double mould-board plow can be used very economically, and by plowing both ways, the potatoes will be made into hills, and not into drills, as is done when the plowing is only in one direction. The cultivator

should be run over the field at least twice before the plow is used to hill up.

Good, medium sized potatoes should be used for seed. They are usually cut to two or three eyes, and three pieces put in each hill, requiring about 12 bushels per acre for seed.

#### Raising Onions.

Above all other vegetables, the onion is one which adapts itself to a great variety of soils, providing the ground is first brought into the right mechanical condition. It feeds largely on all the constituents of plant food, a general manure thus being required. However, light soils are best; on heavy or wet land the onion grows too slowly and matures too late. Weeds, and especially grass, are a great annoyance amongst onions, so the soil should first be made perfectly clean. The onion delights in a finely pulverized soil, and the manure must be well rotted, fine, and thoroughly incorporated with the soil. This vegetable being a shallow rooter, it is necessary to have the manure near the surface. The onion is a voracious feeder, and requires its food in an available state. Even when the soil is fairly productive, 30 tons of barnyard manure per acre should be applied to secure the most profitable results. There is no use in attempting to raise onions for profit on a half-fertilized, half-cultivated patch.

When it is considered that 800 to 900 bushels can be raised from an acre, it will be seen that a very small plot will be sufficient for the farmer's own use, and several bags full for the market besides. By all means grow your onions in the garden, where the soil is supposed to be finer than on any other portion of the farm, and where you should not begrudge a few extra loads of manure to please your wife and daughters. Ashes, artificial fertilizers, compost, anything will be a valuable adjunct to the manure, being cautious that nothing be applied which will disturb the fine texture of the soil. These may be applied as a top dressing after the onions are half grown, or compost may be used with the manure. Don't dig or plow deep; for it requires twice as much manure to fertilize six inches of soil as three inches, bearing in mind that the onion is a surface feeder.

Sow 4 to 6 lbs. of seed per acre, according to the quality of the seed and the richness and texture of the soil. When you want green bunches for the market or for your table, sow at the rate of 7 to 8 lbs. per acre, and about the same quantity when you sow for "sets." If you have any suspicion about the seed, put a few of them in water, and if many float, you may be tolerably certain that the seed is bad. Never sow two year old seed if you know it, or can prevent it.

The rows should be made 12 to 15 inches apart, and the plants thinned out to one or two inches apart in the row. Cover the seed slightly but firmly with fine soil, and make firm and fine with the roller if necessary. The lighter the soil the deeper the seed should be sown. Sow as early as the soil is in a proper condition. The onion is very wholesome and nutritious, and should not be wanting on any farmer's table.

The Bohemian oats swindlers have taken \$35,000 worth of orders in Eaton County, Mich.