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WINTER STRAWBERRIES.

A Great Money Crop, but One Requiring Care, Skill and Industry.

By Ezra J. Stewart.

Altho grown in almost all sections of Florida for shipment to Northern markets, Winter strawberries attain their greatest perfection in the southern portion of the State, where conditions are ideal for the production of perfect berries at a time of year when such luxuries are in great demand. Being cold weather plants it is difficult to keep strawberries in healthy condition thruout the Summer in South Florida, but planted in late Fall they grow and produce good crops the whole Winter thru, and if several different varieties are planted—early and late—it is possible to have berries nearly two-thirds the year.

The growing of strawberries for market has developed into an industry demanding skilful, painstaking labor, so that persons unaccustomed to giving careful personal attention to the details of the business cannot hope to become very successful growers. Those in love with outdoor work may hope by shrewd, industrious efforts to lay up some money each year by cultivating intensively a few acres of strawberries. It has been demonstrated by actual experience that a small acreage well cultivated will often return more money to growers than a much larger area worked indifferently.

Soils Most Suitable to Strawberries.

Much depends upon the selection of a proper soil, for altho the strawberry may be made to grow on most Florida lands, this plant requires a deal of water; the soil best adapted is that which possesses the greatest moisture-holding capacity. Muck land is fairly good but tends to pack together hard, thus releasing the moisture unless cultivated almost constantly. Perhaps the best strawberry land is what is known as flatwoods, with a subsoil of clay foot or two below the surface, which acts as a sort of natural system of irrigation. A cypress swamp well drained would be an ideal place, but on high pine land (light sandy soil) the tendency is to dry out, it being practically impossible to keep plants alive thru the Summer on such land without irrigation. A soil containing large quantities of humus is most desirable.

It has been said the ideal strawberry ground is one that is always moist but never wet hence excessive watering is to be avoided. A moderate quantity of water enhances the shipping value of the berries, too much water injures their shipping quality.

Preparing the Land.

If berries are desired for home use only they may be raised on light sandy soil, renewing the plants each season for commercial purposes **is** would probably not pay under present conditions to attempt raising them on such soils.

New land should be plowed in early Winter, turning under the soil six or eight inches, which will allow a good depth of loose mellow earth for the plant beds. Some Florida farmers object to plowing so deep on account of exposing the sour subsoil; this can be corrected by a liberal application of freshly slacked caustic lime, or even air-slacked lime, about fifteen barrels per acre. The best time to use lime is during the rainy season when copious rains will wash it into the soil and cause the land to sweeten. Frequent cultivation, exposing the soil to air and sunlight, also helps sweeten sour land. The sod should be plowed up into beds 12 to 15 feet wide, cutting them very thoroly both ways with disc or cutaway harrow.

On light lands, which are apt to dry out, flat culture is best; on fairly moist soils the bedding up system has proved most practical. In sections of South Florida where strawberries are raised in large quantities beds are thrown up containing a single row to eight or 10 rows. Some growers practice planting double rows about 12 inches apart, allowing the plant to run together; these double rows are planted every three feet, giving ample space for cultivation with horse tools.

Narrow beds have a tendency to dry out except in a rainy season, while the water after heavy rains does not run off easily from beds that are too wide, hence narrow beds for wet seasons, wider ones for seasons that are dryer. In preparing beds for strawberry, pineapple, and such plants, it is necessary to have them higher in the middle than on the edges, so the water during hard rains may not stand in puddles but run of into the paths. This is an important point to observe in strawberry culture, as imperfect drainage greatly reduces the yield of berries. Old beds that have washed down should be rebuilt from time to time by throwing up fresh soil, thus building up the center of the beds, sloping the ground evenly toward the edges.

After the land has been thoroly pulverized by plowing and cultivating, all roots, sticks, and pieces of sod removed, it should be well limed, then thrown up into beds. Before marking off, these beds should be well raked and built up in the middle as above stated.

In marking off beds it is well to have an even number of rows, as pickers are used to picking two rows at a time and are likely to skip odd rows, thus losing a considerable quantity of berries. Rows should be straight to facilitate proper cultivation. A wooden marker pulled by hand can easily be constructed which will make several row marks at one time in which to set the plants.

Setting Out Plants.

While early planting (July or August) is recommended for the northern and western counties of Florida, it has been fully demonstrated that the cooler days of October are better for setting out plants in the lower parts of the State.

Constant attention will develop these plants so they will come into bearing during late Winter or early Spring, just when the demand is greatest in Northern markets. For home use an excellent way is to set out plants in early Spring (February) carrying them thru the Summer months. This will insure an early crop of Fall berries if plants are on a soil that will not dry out. This system has been practiced successfully at the Shaker Colony for some years past where berries of one variety (Excelsior) have been used on the table some seasons for six months continuously—from December to July. Of course, plants must have proper attention or they will not thrive. Neglected plants are subject to diseases which greatly lessen the yield of berries. As the strawberry plant bears all Winter in Florida, it requires to be dormant thru the Summer; it should not be meddled with except to pull out the rankest weeds and keep plants out of the water.

Set in rows about two feet apart and from 12 to 15 inches in the row, it will require some 2,000 plants to the acre. Good stocky plants are all-important, and these should be kept constantly moistened, especially on a sunshiny day. They are best set toward evening, as the plants will then have time to recover from the shock before morning. Some prefer planting late at night using a lantern to light the way, but where it is necessary to set plants in the heat of the day care should be taken to keep them well shaded. The best plan is to carry them in a vessel containing water; by all means they should not be allowed to lie in the hot sun along the rows

awaiting the setter. Holes should be made beforehand, and if watering is necessary they should be filled, allowing the water to soak down before planting begins. System and attention to details count for as much in the strawberry business as in any other.

One important point is to have the ground settled and firm before planting begins; the soil should be well firmed around the roots, especially just below the bud which should be just above the surface. The holes can be made with a trowel or dibble (the latter a piece of smooth broom stick slightly pointed at one end) so that when finished they will leave clean-cut smooth walls against which the roots of plants can be pressed and the holes filled with moist earth. It is quite necessary to avoid leaving an air space around the roots; that is, the holes should be thoroly filled with dirt clear down to the bottom.

Irrigation Would Increase Profits.

Among strawberry growers in this State irrigation has not as yet attained any great headway, but the time will undoubtedly come when this industry will warrant an extensive system of sub-irrigation. Even now during drougthy Springs judicious irrigation would add much to the market value of berries. Should strawberry culture be attempted at the St. Cloud Colony, there is every reason to expect abundant success thru the adoption of an inexpensive and effective system of sub-irrigation. An ideal system would involve the laying of tile or concrete piping, also an abundant supply of cheap water during the growing season.

If irrigation is desired it would be advisable to set double rows of plants about 18 inches apart, leaving a space of two or three feet between each pair of rows. Set the plants on beds elevated a few inches above the surface; the water can be turned down the wide rows for several hundred feet, especially if the land inclines a bit. This is much better scheme than surface watering, which tends to harden the soil besides washing off the pollen. One thoro wetting is of much more value than a small quantity of water sprinkled on the surface at different times. As with other crops the ground should be cultivated after every watering, especially after heavy rains, leaving a dust mulch on the surface to hold moisture down around the roots where it will do the most good. A hard surface means rapid evaporation of moisture.

Cultivation and Mulching.

After transplanting strawberry plants should not be disturbed for ten days or two weeks, at which time the ground may be stirred slightly on the surface, removing all grass and weeds from around the plants. Later they may be hoed or plowed deep or shallow, according as weather conditions permit; that is, if the weather continues dry cultivation should be rather shallow; if ordinarily moist, deep cultivation may be practiced to advantage. Of course, weeds should be kept down. The dust mulch (a thin layer of surface soil kept finely pulverized by frequent cultivation) is the best possible means of conserving moisture around plants of any kind.

New beds are easily cultivated; old ones, which have stood all thru the Summer, are more difficult to break up, often requiring the use of a bull-tongue plow. If the plants have not been allowed to run together the task is easier than if the beds thru neglect have become a tangled mass of plants and weeds.

Where berries are grown for home use only, old beds are sometimes renewed by allowing new plants to fill the open spaces, plowing under the old plants after they are thru bearing. For commercial purposes plants that have once fruited should not be allowed to produce runners for next year's bearing plants.

How long to continue the cultivation of strawberry plants is a mooted question. In northern Florida growers recognize the fact that there is such thing as cultivating too late. They say that after a considerable number of blossoms have appeared it is time cease the use of cultivator and hoe, giving place to mulching tools. Growers living in South Florida generally consider mulching unnecessary on account of the warmth of their season, claiming the mulch affords cover for crickets and other insects which do more harm to the fruit than any good the mulching might do by keeping it free from sand. However this may be, wire grass hay or even dry pine needles strewn evenly over the beds afford a clean, soft carpet upon which the pickers can sit comfortably or crawl along while gathering the berries. One objection to mulching which should not be overlooked by the novice is that berries lying on mulch during a cold snap will often be frozen to the centers while those lying on bare ground will escape the frost. Where mulching is resorted to it would probably be best to defer it until late, as plants need sunshine and often suffer from cold rains if mulched too early in the season.

Fertilizing the Plants.

To obtain the best results with strawberry plants a complete fertilizer, one containing all the necessary elements in proper proportions, is required. Some careless growers scatter a quantity of ashes or cotton seed meal or perhaps a mixture of bone and ashes on their beds and consider they have performed their entire duty in the matter of fertilization; but this is a mistake, as such fertilizer is not a complete ration and will not give the best results. Fresh cow manure is not suitable as a fertilizer for strawberries that are to be shipped a considerable distance. In fact such fertilizer tends to soften fruit of all kinds, making it hard to ship. Well rotted manure may be used to good advantage. Plenty of potash (sulphate) at the right time will help largely in producing fine fruit that is sweet and highly colored. As a rule growers do not feed enough potash, but some have learned its value and make provision for liberal applications just before the bearing season. A good formula is about as follows:

Ammonia, 3 to 5 per cent.

Phosphoric acid, 7 to 10 per cent.

Potash, 10 to 12 per cent.

A ton to the acre of such fertilizer on ground well adapted to strawberries should produce a good crop barring freeze, drought or disease, provided the right varieties are planted and they receive the proper care. Strawberry plants should not be fed too heavily at first, and on old soils there is generally enough fertilizer in the ground to nourish the young plants for a few weeks at least. Three applications should be made, the first quarter ton about four weeks after planting, say, about the first of November, another quarter a month or so later, and the remaining half-ton some time the latter part of December or first of January. If plants are fertilized too freely at first they may put on a strong growth, then have a setback, called white bud, or die back. On our thin Florida soils this condition is very likely to occur and is indicated by a slight reddish purple tinge on the new leaves. The leaves are liable to be crinkled and smaller than common. This call for food should be heeded at once, potash being an element generally needed.

In fertilizing a good scheme is to run a high furrow with a hand-plow about two inches from the plants, strew in the fertilizer and cover with a return furrow. Make the first application on the outside or the inside of each row, running the plow down one side of the bed and up the other. The second application should be made on the opposite side from the

first. Then fertilize the third and last time directly between the plants in the row where the pickers will not tramp. This plan has been practiced for many years, and is indorsed by Mr. S. Powers, of Jacksonville, Fla., an experienced experimenter with strawberries.

Different Varieties.

Their names are legion. There are, however, but comparatively few kinds that do well in South Florida, and among the best may be named Excelsior, Newnan, and Lady Thompson. The Cloud produces a fine large berry, but it is destitute of pollen and should be planted with Newnans or some other perfect bloomers.

Senator Dunlop, a superior berry, is staminate, or perfect flowering, good to pollenize pistillate kinds. Then there are the Wilson and Hoffman, both commanding good prices in the market. For first-class table berries for home use, I should recommend Excelsior or Lady Thompson. The former is one of the surest bearing extra early berries, the latter follows on close behind. The Klondike is considered a splendid table berry by some growers.

How to Propagate Plants.

The novice will need to secure his first-year plants from nurserymen or nearby growers. If he desires to raise his own plants for the following season, a good plan is to wait until plants are thru hearing (about June), then take the first new plants that make and set them out in good foist ground. Keep crab grass and weeds down by thoro cultivation. Also keep all runners cut off until about the middle of August, after which allow a sufficient number of good strong plants to grow for October planting.

For propagative purposes some practice setting out parent plants in February or March, but as it is difficult to keep grass and weeds down during the Summer months in South Florida, plants that survive the Summer have generally exhausted too much of their vitality to make good bearers. If, however, it is thought best to set beds in early Spring for propagating new plants, the bloom and fruit should be kept carefully picked off so as to make the parent plants produce vigorous runners.

Some growers practice planting rice, corn, sunflowers, or cowpeas among their strawberry plants for shade during the Summer, and it is claimed that an old bed can sometimes be carried thru all right by this method. Old beds are doubtful at best; new beds give better satisfaction,

both for home berries and for shipping.

Picking, Sorting, Packing and Shipping.

It may, perhaps, seem strange to Northern people to think of sorting and packing strawberries in a packing house much the same as citrus fruits, but this is necessary in the South, where the bearing season is both long and warm. Then, too, it is not always easy to secure competent pickers, those who will pinch the berries off carefully by the stem instead of seizing the fruit itself. It will be necessary for foremen to repress a natural tendency toward rollicking among the berries, especially if the ordinary fun-loving, irresponsible negro is employed on the job.

The early morning hours, just as soon as it is light enough to distinguish ripe fruit, are best for picking, as the berries are then cool and solid. Being wet with dew they will require to be spread out and dried. Those picked during the day generally become too soft for shipping without refrigeration.

In sorting, all very small berries should be rejected as well as rotten and imperfect ones. A few boxes of fine large fruit will frequently bring more money than several boxes that are inferior. Some packers resort to "facing," or "plating," that is, a handful of extra fine berries are placed on top of each box to make a show. Among strawberry men this practice, if kept within bounds, is not generally considered dishonest; it is, nevertheless, a doubtful proposition, and is practiced mostly by shippers without reputation. Old shippers who have carefully built up a reputation for good goods and no deception do not and need not resort to such methods. There are fruit growers and shippers who guarantee their fruit to be uniform in size and quality all the way thru any package they may send out; this method is the only true one for those who hope to hold a high-class trade, to say nothing of the other aspects of the case.

In regard to marketing strawberries it may be safely said that growers do best when they establish a trade with responsible dealers, shipping right along thru thick and thin; and they probably fare worst when tempted by smooth-tongued agents to ship to houses that are strange and perhaps irresponsible. As a rule growers should pay more heed to the proper select of dealers and give less time to the study of fluctuating market prices. In other words the character of the dealer, or commission man, is of great importance. Then too, strawberry growers should organize to obtain the many advantages which accrue from such combinations the world over.

Is There Profit in Strawberries?

Astonishing reports have been circulated in times past regarding enormous profits derived from Winter strawberry culture in the South, and, doubtless, there was some foundation for these interesting tales. A decade or so ago there was, perhaps, considerable money in the business. and I doubt not but that careful growers are making a good living at the present time. Moreover, the demand for such fruit is increasing steadily, and where growers are sufficiently united to demand and obtain good shipping facilities the present outlook is encouraging.

It is said that after the price gets below 25 cents per quart in Northern markets there is not much profit in shipping. Growers then depend upon local demand. Early berries bring fancy prices which, of course, do not last long at any season of the year. Mr. C. H. Ward, a grower in Orange County, Florida, says the best price he ever received for strawberries was for nine quarts shipped to Philadelphia on January 3, 1890, which was a check for \$19, or \$2.16 per quart, net. He is conscientious enough to add that the next shipment a few days later sold for 50 cents per box.

This season small growers living near Orlando, Fla., are selling their surplus berries to local merchants at 50 cents a box, net. A very good price, by the way.

