The Facts About Cantaloupes

A Treatise on Cantaloupe Growing, Giving the Best Cultural Practice and Experience of Growers in the Special Cantaloupe Growing Districts of the United States

Copyright 1912, and Published by The Rocky Ford Cantaloupe Seed Breeders' Association Rocky Ford, Colo.
Plate No. 1—The culls and immature cantaloupes piled to be cut for seed, after a harvest of 300 crates per acre. A common practice with growers around Rocky Ford.

Plate No. 2—A pile of average cantaloupes from one of our best bred strains, Rust-Resistant Pollock, salmon tint No. 25. Note the contrast.
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THE ROCKY FORD CANTALOupe SEED BREEDERS' ASSOCIATION.

INTRODUCTION

The cantaloupe in its season is probably the most popular fruit on the American table; appearing prominently on every first class menu.

The total consumption in the United States, amounting to many thousands of carloads, besides the local home grown product which can hardly be estimated, indicating an industry of great importance.

From the growers’ standpoint, however, the story of the melon industry is filled with disappointments and failures, difficulties and disheartening returns, which are all but discouraging at times, yet each season some growers are making a decided success of the crop, either through a better experience, more favorable conditions, or exceptional opportunities; although the grower himself may not always realize the determining elements of his success, but to a careful observer, it is evident that many of the factors that cause failures in cantaloupes, could be overcome by a better grasp of essential points: for instance, a better knowledge of the experience of other growers, a fuller understanding of the needs of the markets, the best methods of harvesting and handling the crop, and the most favorable system of marketing for the highest returns.

To this end the Rocky Ford Cantaloupe Seed Breeders’ Association has championed the cause of better cantaloupes, primarily by furnishing the highest grade of seed that it is possible to develop, but also by furnishing the fullest information regarding cantaloupes within our reach, thus enabling many growers to make a success of their crop.

For the third time we have revised our cultural treatise, in order to include the latest and best information obtainable, and this booklet is presented with our compliments to growers whether customers of ours or not; and more than that, we invite any inquiries concerning points that we may not have touched upon.

We already feel that through correspondence with our customers we have a personal acquaintance with a large number of growers throughout the United States and the words of encouragement and satisfaction that many have expressed, is evidence to us that our efforts have been appreciated, and we are inspired to redouble our efforts to meet the needs of different cantaloupe growing districts of the country.

In starting this movement, we had to take the means at hand, though far from perfect, we selected the best strains of cantaloupes known
to the Rocky Ford district, and by systematic efforts in seed selection, we attempted to improve uniformity of type and quality. Five years ago we were uncertain on points that today, experience has absolutely demonstrated, and the uniformity of results secured from our seed under a wide range of conditions, including some of the most adverse character in different parts of the country, has surpassed our highest expectations; the reports of results justify our claim that we have the highest developed strains of Rocky Ford cantaloupe seed, in point of uniformity of type and superior quality of desirable traits to any found in the Rocky Ford district.

To sell the highest grade of seed to the largest number of growers is our definite aim, and to this end we have endeavored to be consistent in our claims, conservative in our statements and truthful in our representations, for we hope to inspire confidence by frank, open methods of dealing with our customers, and win our reputation through the merits of the seed we produce; we are especially glad to welcome visitors who desire to investigate our system of breeding and methods of handling seed.

Since our inception as an Association, we have openly criticized the practice of saving and selling seed produced from unmarketable cantaloupes;—"culls" and "left-overs" after harvest, which has been almost a universal practice in the Rocky Ford district for a number of years, and we are glad to know that our efforts in this line have been appreciated to the extent that there is a growing sentiment against it, so that the demand for cheap cull seed has appreciably declined in recent years; no stronger proof of the strength of our position, and the need of this agitation, and its value to the cantaloupe industry, could be had than the alarm manifested by those engaged in these practices, and indicated by the determined efforts to check the movement toward high grade seed, by arguing that good seed sent abroad would be an injury to the Rocky Ford district; and also to silence those who were advocating the reform, but the only vulnerable point of attack, seemed to be the fact that one member of our firm was in the employ of the State Agricultural College, accordingly sensational charges were preferred against him, before the State Board, and heralded far and wide. It was claimed that "he" was working to the detriment of the farmers in the vicinity of Rocky Ford by encouraging the development of cantaloupe growing in other states, to come in competition with cantaloupes from Rocky Ford!" A sentiment which needless to say was not shared by the community at large.

A lecture tour made by this member of our firm in the interest of a railroad company, who desired to develop the cantaloupe industry along their lines in another state, was the immediate cause of open hostilities, but suffice it to say, that these charges were fully investigated by the Board of Control and all the charges were dismissed as unwarranted and unsupported by the evidence. Garbled accounts of the affair were sent to some of the leading trade journals, but "The Kansas City Packer" took pains to investigate, and the real facts of the case were published in their issue of June 8, 1912. Those desiring more details of the fight for good seed are referred to that issue.
We have canvassed our customers in the various cantaloupe districts of the United States for any new information on cantaloupes, and we have embodied in this booklet what we consider the most essential points in regard to good seed, cultural care, harvesting and marketing, also experiences and suggestions on insects and plant diseases, which we trust will prove of much interest and real value to all commercial growers.

Points for Commercial Growers to Consider

In order to prepare our readers for a better appreciation and understanding of some of the determining factors that may result in success or failure in cantaloupe growing we will ask consideration of the following questions:

First, Are your seasons long enough, and the climatic conditions favorable for cantaloupe growing?

Second, Are you accessible to markets, or good railroad facilities?

Third, Will your cantaloupes come in competition with those from other districts and cause a glutted market?

Fourth, Have you some peculiar advantages which will enable you to meet competition?

Fifth, Have you had experience in handling cantaloupes? and do you realize that it requires under favorable conditions 100 to 150 acres to profitably ship in car load lots?

Sixth, Have you any marketing agencies to assist in disposing of your crop? or will you depend upon open consignments?

Seventh, Have you considered your market demands as to varieties? and do you know what strains of seed would be best adapted to your conditions?

Eighth, What importance do you place on good seed breeding? Do you know that common ordinary seed may produce as fine specimens as the best seed? but that the well bred seed will produce a greater per cent of uniform, marketable cantaloupes?

Ninth, Are you aware that the highest grade of seed can not insure you a crop under adverse conditions, of weather, poor soil or careless management?

Tenth, Do you realize that one failure, or even several, does not prove that success is not possible?

It is not our purpose to call attention to all the possibilities of failures nor suggest all the points of encouragement, but if a grower can realize the essential points, we feel that the cantaloupe industry will be on a more stable footing.

In the first place the large acreage for an individual grower should be discouraged, except in the special cantaloupe growing districts where growers have grown into experience in handling large acreages. If a
Plate No. 3.

Plate No. 4—A general view of two of our seed fields.
large acreage is required to make car load shipments, it would be best an aggregation of a large number of small acreages handled by individuals working in co-operation.

Specialized cantaloupe growing has been made a success in a few localities by a large number of growers, but has been attended with ups and downs, of overproduction and glutted markets. But we feel safe to say from experience, that there is a great opportunity for a few growers in a great many localities to specialize in cantaloupes, to work up a fancy trade, and to study to cater to that trade and supply them with only the best, that will result in success where now only indifferent results are secured. The grower who considers only the producing side of the industry has not measured one-half of the question, for marketing to a profit is the biggest side.

The problem is almost too large for any one to handle, but we hope to touch on the most essential facts.

THE IMPORTANCE OF GOOD SEED

It is often argued that seed saved from over-ripe cantaloupes are just as good for seed, which on first thought might seem true, but if we ask, why is a cantaloupe over-ripe, when the fields have been picked over twice each day as they are in the Rocky Ford district? It is true it may have been overlooked, but more probably the majority of "over ripes" are so because there is an inherent weakness toward rapid ripening, in reality a poor keeping quality, hence if we plant seed saved from over-ripe cantaloupes that are culled from where the bulk of the cantaloupes are marketed, we are propagating just the traits that we do not want in our cantaloupes for market.

Seed breeding means more than the selection of seed from an average crop, that would tend only to produce average results.

The same laws that govern the breeding of animals also control the improvement of plants. Any fair minded man will acknowledge that thoroughbred animals are more profitable than scrubs, or even average stock, and the same is true of pedigreed plants. But we must get the true conception of seed selection,—not the idea of the uninformed farmer who, with his wife spent their evenings for many days, selecting seed corn from a lot of shelled corn that he had purchased for feed. And the man, who selects his cantaloupe seed at the packing shed is almost as far wrong, for the plant that produced the seed has not been considered.

Nature makes selections that the grower may often overlook, for instance cool nights and a short season will act as a natural selection to develop the early maturing types, hence, the seed from the arid region in high altitudes has proven to be superior to seed grown in the humid sections, both for vigor and early maturity. The big cantaloupe growers from California and the Southern states realize this, for they look to Rocky
Ford each year for their cantaloupe seed, and all testify that they get earlier and more uniform cantaloupes from the Rocky Ford grown seed.

Yet because cantaloupes from Colorado are the last to appear on the markets, some might suppose that the seed from there would be late in maturing, when in fact the very opposite is true.

Some of the Points That Seeds Will Not Overcome

Poor results are often attributed to poor seed, which is doubtless often the case, but there is evidence to show that complaints about seed may sometimes be made when the trouble is due to other causes: for instance, two fields may be planted with the same stock of seed, but having different soil fertility, or cultural care, may show widely different results in yield, size and uniformity of the crop.

As for example, we have had a report from a grower in Texas who complained that our seed produced too many "jumbo" sizes, while from southwest Arkansas we had another complain from the same strain of seed, that the cantaloupes were running too small, yet this grower admitted that dry weather checked his vines some.

Some people seem to think that the crop should show absolute uniformity; this is next to impossible, although a study of the ideal representations and the elaborate descriptions in some of the seed catalogues might convey this impression. **The fact is, cantaloupes do vary, even in the best strains of seed;** one can frequently find on one vine, one cantaloupe that is very long, while another may be short and round; this is especially true if the vine has made an unusual growth on account of rich soil or other favorable conditions.

The size of the cavity, the development of the netting, and the appearance of the cantaloupes will vary on different types of soil to some extent, and different seasons will lead the grower to think that the seed was not up to standard of the year before, when the seed was equally good but the season was not as favorable in some respect that the grower overlooks. We have seen the same seed out of the same sack planted on different days, one just before a rain that was cold and the other after it had warmed up, one would come up slowly small and puny, while the other make a fine growth.

Any influence that tends to retard or stimulate the growth of the vines, will also, in some way or another, affect the results of the crop; such influence may not be serious, possibly only a few over-sized melons, making packing a little more difficult, but one must expect some variations due to environment. **These may be favorable or unfavorable, and they may or may not be under the control of the grower.** There is a long list of these factors,—character of the soil, fertility, moisture supply, climate, insect pests, plant diseases, and cultural care; all of these
must be considered, and controlled if possible, if we would secure the greatest uniformity in results.

Heredity of the seed is another great factor influencing results and one that is often difficult to determine since there are always the two forces, environment and heredity, at work, and which of these causes has produced a given effect will often be the question.

The only fair way to pass judgment upon the merits of a certain stock of seed is to compare its results with those of other seed under exactly the same conditions. It is the only means of reading heredity in any system of plant breeding. The methods of plant breeding for the different crops are essentially the same, namely, a nursery test of the seed from individual plants, selected for given traits, and which are then grown under uniform conditions to determine their relative merit.

Our Method of Developing High Grade Seeds

For five years we have been selecting a large number of fine individual specimens of cantaloupes, and saving such seed separately and then planting them in adjacent plats, at the same time, under as uniform conditions as possible, to test out their breeding tendencies,—this we have called our nursery test.
The individual plant is the unit of variation, and hence, should always be made the unit of selection. The results of systematic seed selection have clearly shown that there is a wide variation in different plants from even fairly pure seed, and that the more nearly a strain of seed can be the progeny from a single plant, the more uniform and strong its hereditary tendencies will be, provided that the individual plant is not a hybrid, in which case it may break up into a variety of types; but even in long established strains of pure bred seed there is still the continual "reverting" or "breeding back," so that it is not uncommon to find a cantaloupe that is a little "off," so if the general average of the crop is pretty uniformly true, one need not suspect a mixture by the appearance of a little variation.

Sometimes a variation is along very desirable lines, for there are numerous instances where the selection of the seed from a single plant that seemed different, has been the beginning of a new strain much superior to the original; such was the history of the disease-resistant Pollock cantaloupe, while the Ryan's Early Watters was started from a single early maturing plant.

There is plenty of seed saving, but comparatively little seed selection along systematic lines, and there is still less seed breeding for improved hereditary traits. Usually twenty-five hills are planted in each plat, and all are given uniform conditions that the differences that may develop may reasonably be ascribed to heredity, and the new selections made accordingly.
A number of the choicest individual fruits, from the most desirable plats are again saved for the next years nursery test, and the plats that run most uniformly alike along desirable lines, are then cut for stock seed, from which we grow our commercial supply. In this way the weak traits and undesirable tendencies of any individual plant may be eliminated more and more each year, while the strong desirable traits are retained and thus the average uniformity gradually increased as far as possible.

It will readily be seen that it requires the same care to maintain a grade of quality, that it did to build it up in the first place; the tendency to deteriorate being always present.

The first nursery grown, before the seed had been bred up much, had the appearance of a large checker board, because of the many variations. Some were disease-resistant, and some were not; some early and some late; some prolific and others not, while in netting, color of the flesh, and the size and form of the fruit, the contrasts were also very marked. Plates Nos. 7 and 8 show the contrast in disease-resistance of representative hills from the resistant and non-resistant cantaloupes, both grown under the same conditions.

Aside from improving and combining desirable traits, the nursery test for cantaloupes has another strong point of merit, namely, keeping the stock seed pure. It is evident that if seed from individual cantaloupes are planted separately in different plats, it would be easy for a keen observer to detect the presence of a hybrid and thus eliminate that plant from being saved for stock seed.

So marked have been the results, and advantages of the breeding from individual plants to secure uniformity and desirable traits, that no one who has followed it up intelligently can doubt the efficiency of the method, but at the same time it is very evident that it takes care and a good deal of time to accomplish results, which at first may seem easy.

Seed breeding is practical; it is not a theory or a fancy, but a reasonable, result-producing process. The most successful farmers are giving it careful consideration, nor does the improvement of seed add a burden of labor and expense; but comes as an added asset to the grower’s wealth, and increases his pride in his crop.

Comparatively few men are capable of producing their seed for if they are growing cantaloupes for market, their time and attention must be occupied with the crop, and to select, cut and cure high grade cantaloupe seed requires no little training and experience, and some little equipment.

The grower who buys his seed should deal directly with a reliable breeder who is qualified, and is making a specialty of growing the crop for seed; a grower should not submit his seed order for “lowest bid” if he expects to get the best seed.
Plate No. 7—A hill of Disease-Resistant plants.

Plate No. 8—A hill of Non-Resistant plants.

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CONDITIONS AND CULTURAL CARE

CLIMATE.

The cantaloupe seems to thrive in rather a wide range of soil and climatic conditions, being grown to some extent in almost all of the states, although from the standpoint of money returns, the area of very successful cantaloupe culture is somewhat limited, yet it appears that it is more the question of cultural care, disease and insect pests, or favorable marketing facilities which determine the success of the industry in a given locality, rather than the specific soil or climatic conditions.

Plate No. 9—An ideal seed cavity.

Climatic conditions within certain limits are essential to successful cantaloupe culture, and the consideration of this topic may answer many questions as to the adaptability of some sections for melon growing. First, there should be a long, hot summer, with about five months free from killing frosts, with a daily maximum temperature between 80 and 95 degrees during June, July and August, with a night temperature seldom falling below 60 degrees; four months may mature good cantaloupes, but with so short a season, frost would probably cut short the profits of the crop, unless, as is done in some of the northern states having too short season, the plants are started under frames in sods or paperbands; Second, there should be plenty of bright sunshine, without excessive rainfalls; this will secure good quality and lessen the liability to the attacks of fungus troubles, that are so often fatal to the melon crop in rainy sections or regions of heavy dews; without doubt the clear bright sunshine and
the arid conditions of Southeastern Colorado, accounts for the high flavor and the fine qualities found in the Rocky Ford cantaloupes as is evidenced in the poor quality in the cantaloupes with an abnormal rain fall, which sometimes occurs.

Sunlight is very essential to the full development of cantaloupes, for the quality is perceptibly inferior in shaded spots; the dry atmospheric conditions cause rapid transpiration of the moisture, from the leaves, thus inducing a quick movement of sap or plant juices which increases the power to carry and deposit plant foods, thus developing and concentrating the spice of flavor and producing the very highest qualities.

We do not recommend cantaloupes to be planted in an orchard, where there is any shade to speak of as they will not do well.

SOIL AND FERTILITY

It is conceded by all experienced cantaloupe growers, that the cantaloupe thrives best in a warm, sandy loam; clay loam and other types of soil may produce a good crop if the tilth and fertility are good, but heavy soils are apt to be cold and backward, causing lateness in maturing, and it is also generally believed that the nature of some types of soils seriously influences the form, size and other qualities of the cantaloupe. It is true, however, that the average size will vary in different
seasons; in seasons of very favorable growth the cantaloupes will run to a large proportion of "jumbo melons" (larger than standard) in seasons less favorable, there will be more small or pony sizes. An actual test of a crop on a piece of land, is the best proof of the fitness of the soil for that crop; for while a chemical analysis may theoretically seem favorable, in practice it may prove otherwise.

There are many factors that may influence the results; but in general the land that will grow other vine crops, such as cucumbers, pumpkins and squash, will probably grow good cantaloupes.

Soil for cantaloupes should have good drainage both surface and subsoil, and in irrigated regions the land must have a uniform slope or grade so that the water will run even, without soaking or flooding the hills; if there is one point above another in cantaloupe culture that needs special emphasis, it is the caution against oversoaking or flooding of the surface of the field; this will be further discussed under the topic "Irrigation," but the point must be held in mind in many of the operations, and in selecting the field, to have it well drained on the surface as well as the subsoil.

If no detrimental soil conditions, like seepage or alkali, exist, the question of fertility is usually the most important one in relation to the soil; barnyard manure is an old standby, and cantaloupes of all crops, will respond as well to well-rotted-compost better than any form of commercial fertilizer, but experience of the most convincing sort has shown

Plate No. 11—The contrast between an imperfect and a perfect Cantaloupe.

that soil cannot be made to produce good cantaloupes indefinitely, year after year, by applying manure and artificial fertilizers.

Aside from fertility there are also the questions of plant diseases, soil bacteria and unbalanced food supply. Crop-rotation has proven to be the most practical and adequate means of preserving not only the
proper fertility, but the nearest approach to securing uninfested soil conditions, hence, crop rotation becomes an important phase of cantaloupe culture.

Alfalfa, to the western ranches occupies the same place that clover does to the eastern farmer, or the cow pea to the southern planter; these crops for their respective sections, provide ideal soil fertility and tilth for the cantaloupe. In Colorado alfalfa sod is the ideal soil preparation for cantaloupes, and a comparison of the results on alfalfa sod with even well manured old land will convince the most skeptical. Plate No. 10. Experience has demonstrated that early matured cantaloupes can hardly be expected on soil following a heavy fertility consuming crop, like sugar beets or corn, a good late crop being the usual result. Nearly all the fine records of early yields and high prices have been made on soil that was in a perfect state of tilth and fertility.

Soil can be made too rich in applying manures, and the principal point in the application of fertilizers is to have a reasonable amount, and well incorporated in the soil, and in the case of barnyard manure, to have it well rotted. In Colorado, manuring in the hill, has been found to have no advantage over the broadcast method, owing probably to the wide spreading root system of the plant; commercial fertilizers have not been profitably used in Colorado.

PREPARING LAND FOR CANTALOUPES

The secret of getting soil in that ashy, mellow condition so desirable for cantaloupes, is one largely of experience, for handling soil in the same manner on different farms will seldom get the same results; one may
be a clay, the other a sandy loam. The texture and the previous cropping has much to do with the way soil can be handled. In general, there must be moisture in the soil during the winter to secure the mellowing effect of the frost, and the soil must not be handled too wet. If clay or adobe "packs," it will dry hard and lumpy; real sandy soil can be handled wet with less risks than other soils. The soil should be friable so that the harrow will pulverize it without clogging as it does in mud, and yet not so dry as to leave the field full of clods.

Before plowing, the soil should be well disked for two reasons. First, to thoroughly mix the soil with any fertilizer previously applied, and second, to pulverize the soil on the surface, so that after the work of preparation is complete, the bottom of the furrow will be as finely prepared as the top. Plowing for cantaloupes is usually made to the depth of five to six inches; in the arid region the plowed land must be closely harrowed behind the plow, to prevent too rapid drying of the surface, and should be closed up by fineing the soil on top; this is usually accomplished with the steel harrow with the teeth turned nearly flat, or with a float or land leveler; a fine dust mulch will check evaporation, and thus conserve the soil moisture, to enable a more thorough harrowing to complete the preparation. Preparing the land some time before planting is advisable as the soil becomes settled, and the seed will germinate more readily and a more uniform stand will be secured. The soil should also be harrowed after cold spring rains, to check evaporation, which will tend to aid in warming up the soil. Before laying out the rows to plant, while the surface of the soil is dry, the field should be carefully leveled with a land leveler; See Plate No. 12; removing all the high points and filling the hollows and dead furrows, so that in irrigating the water will run uniformly without flooding the rows, or oversoaking any of the hills.
About planting time, the field is laid off with a marker in rows five to six feet apart, in the opposite direction to the rows to be planted, which are laid off with the irrigation furrows, in the best direction for water to run, the irrigation rows are usually made about the same distance apart, usually six feet, these furrows can be made with a single shovel plow or a two row marker or furrower, shown in Plate No. 13. In the non-irrigated regions these furrows could serve for surface drainage after heavy rains.

PLANTING AND SECURING A STAND

The first requisite in planting cantaloupes, is to have the weather warm, for warmth and moisture are the two essentials in seed germination. Many growers make the mistake of planting while the ground is yet cold with freezing temperature occurring every few nights. If per-

Plate No. 14—Planting Cantaloupes with a Hand Planter.

chance the days are warm enough to germinate the seed, the plants are stunted and make a slow tantalizing growth, should they be so fortunate as to escape these late frosts of spring.

As a general rule, a few days before the latest freeze may be expected, is as early as it is safe to plant. At Rocky Ford, May 1st, marks the usual date of the latest frost, but even then there are risks to run, as killing frosts have occurred as late as the tenth of May, or even later. It is common for cantaloupes planted as early as the tenth of May to begin to ripen as soon as the earlier planted seed, so as a rule it is not to
much advantage to plant very early; the grower must be the judge in regard to his soil and climate.

There are two systems of planting cantaloupes,—the drill-row and in hills. In the hill system, the field is check-rowed like corn, to permit cultivating in each direction, the rows usually being laid off five to six feet apart, and the hills about the same distance in the rows. By dropping eight to ten seed to the hill, it will require about a pound of seed to plant an acre. It is advisable to plant plenty of seed in order to secure a good stand, allowing for the attacks of the cutworms and other destructive agencies.

There are two methods of planting cantaloupes in hills,—with a hoe, and with a hand planter, commonly called a "snapper" shown in Plate No. 14. The rotary type of this form of planter is usually the most satisfactory, but some modifications are usually necessary to fit it for dropping cantaloupe seed.

By filling the holes of one of the regular corn dropping plates with lead, then by boring out with a three-eights drill bit and by testing and

Plate No. 15—Planting Cantaloupes with Garden Drill.

enlarging the holes it can be regulated to drop quite well; the seed box will also need close fitting, to prevent the thin flat seed from leaking out. A block or stop should be attached to the blades at about the depth to plant, about one and a half inches, this will insure uniform depth, which is essential. Great care should be exercised to have the depression or hole formed in the soil by the thrust of the planter, filled or leveled with the foot; otherwise the seed will dry out, field mice will more readily find the hills, and a hard dash of rain will form a hard chunk, or crust right over the seed. The surface of the soil should be dry to insure good work
with the planter. A man with some experience can plant from three to five acres per day with a planter, while one acre per day is about all that can be accomplished with a hoe.

The principal argument for the hill system of growing cantaloupes, is the economy in labor, for more of the weeding and hoeing can be done with a horse.

In the drill system the rows are usually put about the same distance apart, but the seed are sown in drill rows, the seed being dropped every two or three inches; this method requires about two to three pounds of seed per acre. The seed is sown either with a hand drill, shown in Plate No. 15, the horse planter or the sugar beet drill is used in the Rocky Ford district. The important point is to get the seed dropped uniformly, and the drill set to plant at a uniform depth,—not over one and a half inches; as soon as the plants are nicely up they should be thinned to single plants, far enough apart to permit hoeing between. After the danger from insect injuries is over, and about the time the first blossoms appear, the plants should be thinned again to one plant every two feet, on the average; the tendency at this point is to leave the plants too thick, especially if the plants are extra fine. The most advanced plants are selected, which is the cause of the drilled fields usually maturing earlier than the hill planted, and the earlier development usually compensates for the extra cost of the increased amount of seed, and the added labor of thinning.

The essential points in planting are to get the seed planted at a uniform depth, and at a uniform distance from the irrigation furrow; to have the soil fine and firmed just right, to skillfully conserve and apply moisture, and to keep a crust from interfering with the young seedlings.

In the arid regions the seed is usually planted about one-half inch deeper than it is expected the plants will come through, in order to hold the moisture line to the seed. When the seed is well sprouted the hills are raked off with a garden rake, removing the crust and any clods that might interfere. Sometimes the field is harrowed across the rows with good results, especially where the rows are drilled in. This matter of "raking off" and keeping the surface fine over the hills is a very important point to be observed in securing a good stand.

IRRIGATION

The moisture problem in cantaloupe growing is a very important one. Some times in the humid sections, there is too much water, and it becomes the question of how to save the crop, but little can be said here, except to select well drained fields for the cantaloupes and provide the field with furrows, like the irrigation furrow, to carry off the excess rain water, and to plant on somewhat raised hills or ridges.

In the arid sections the moisture for the crop as a rule depends on the irrigation furrow, and the skill of the grower to so manipulate the soil and water. Too many look upon irrigation as a simple process of running water through the rows, or over the ground, paying little or no attention to the needs or demands, or the dangers of flooding or oversoaking the land. When soil is completely saturated with water, the air is practically all driven out and the soil settles, which defeats the very object and purpose of plowing and the other work of soil preparation, which will dry hard and nothing but frost can ever mellow it as before.

The application of water to all such crops as cantaloupes should be by sub-irrigation, that is, the moisture should soak through the soil to the plant or seed, from the irrigation furrow, without the surface of the

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soil, except in the furrows coming in contact with the water; this is essential, not only for the needs of the plants, but also the same amount of water will serve a longer time the needs of the plants, the water rights in some ditches makes it necessary to conserve the moisture as long as possible.

In order to supply the moisture uniformly to the seed along the row, the seed must have been planted at a uniform distance from the water line, about four to six inches, to insure uniformity in the soaking of the rows, the rows should be "logged" out, or smoothed out with a short piece of log about the size of the furrow; this will cause the water to run through quickly, and by regulating the amount in each row, the rows will become uniformly wet without flooding or soaking the ground. Plate No. 16 shows a field being properly irrigated, to germinate the seed. When the water can be gotten through the rows quickly and the amount regulated to supply the rows about as fast as it soaks in the soil, the upper and lower parts of the row will become wet at about the same time and amount, with practically little water wasted.

The idea is to soak the rows until the water has fully reached the seed, while the surface over the hill remains nearly dry; this is ideal condition for germination and is sufficient for the needs of the plants in all the early irrigations. Later the rows can be soaked till moisture shows on the surface back to the plants.

Under Colorado conditions, one irrigation after planting, and one again about the time the plants are coming up, is ordinarily all that is required until after the first cultivation, after that irrigation and cultiva-
tion alternate each other every week or ten days, the exact number of
times depending on the weather and soil conditions.

The amount of irrigation necessary to secure the best results in cantaloupe culture, is subject to so many varying factors, that it is impossible to lay down an exact rule. In the first place, the cantaloupe does not thrive in a wet soil, as evidenced by the injury and poor quality of the crop in seasons of excessive rain. The needs of the crop in the first stages are very small, and as light watering as possible to secure the needed moisture, is best; then as the plant develops the amount of irrigation should be increased, light, frequent irrigations, rather than heavy soakings at long intervals has proven to be the best plan.

When the vines are nearly grown and set full of developing fruit, a heavier irrigation is then needed by the plant, but as soon as the fruit have reached their growth, light waterings should again be the rule; to insure the best quality, little if any irrigation should be applied during the picking season, just enough to prevent severe wilting; it is at this time that the cantaloupe "rust" fungus makes its appearance, and moisture and dews are favorable to its development.

The dryer the season, the better the quality in cantaloupes, is an axiom that should induce more careful irrigation among cantaloupe growers in the irrigated sections.

The relation of irrigation to early setting of cantaloupes is a somewhat mooted question; there are growers who argue the use of frequent irrigations during the setting period in order to secure a good set, but others prefer to keep their vines dry, even allowing them to show the need of moisture before they will permit irrigation during this stage.

It is evident that the season and climatic conditions have more to do with the setting of fruit than the watering; there are experiences that might seem to support both theories; yet continued observations would indicate that a grower is not warranted in following either course to the extreme, but rather the medium plan of providing just enough moisture to secure an even, healthy growth all the way through, would seem to be most favorable condition.

An excess of water in hot weather is apt to induce a heavy growth of vine at the expense of early "sets" due to the rank growth, and such succulent growth is also much more liable to succumb to the attack of diseases and insect pests.

**HOEING**

Hoeing the hills is of great importance, but it should be done with skill both as to the time and in the manner it is done, for careless hoeing is a common error; if the seed has been properly planted in mellow soil and the irrigation properly applied, there is no reason for deep hoeing in and close to the hill, as it only disturbs the plant and dries out the soil; weeds can be destroyed by rather shallow hoeing.

The dry, cloddy soil on the surface of the hill, should be removed and replaced with fine mellow soil drawn up from away from the hill, hilling up the plants as much as possible; even to almost covering the two seed leaves, this will protect the plants from wind, and insects to a large measure; but the most important feature of this process is the holding of the moisture well upon the stems, affording the best condition for a long base for the development of the roots, as well as supplying the plant with moisture. If on the other hand, the soil in the hill is loosened up with the hoe and not hilled up by drawing the loosened soil to the plant with the hoe, the hill will usually dry out, and only a short portion of the stem be in moist soil to induce root development.
CULTIVATION

A thorough preparation of the soil before it is planted to cantaloupes will very much lessen the necessity for so much cultivation afterwards, but a good deal depends on frequent and thorough tillage during the early stages of the growth of cantaloupes, at first it should be deep and thorough, but not close enough to disturb the plants; the cultivations should be more shallow and further from the hills as the plants develop. The grower who cultivates deep and close to the hill because the vines do not prevent this, is cutting off roots, setting back his crop more than he is doing good. He should understand the growth of the roots, for they form the counterpart of the vines on the surface, only they ramify the soil more thoroughly and to a greater distance than the length of the vines, so it is easily possible to damage the crop by careless cultivation. Examinations in the soil between the rows will reveal the tiny rootlets very thick, four to five inches deep, hence surface tillage after the vines start should be the rule, in irrigated regions of Colorado root pruning seems to be detrimental to the crop.

In the humid areas of the South under heavy rain falls, experienced growers recommend deeper planting and deep thorough cultivations. They argue that deep cultivation will induce a deep root system, so if the season is excessively wet, the deep stirring will dry out the ground faster, and the root pruning will have the effect of checking the too rapid growth of vines that usually accompanies wet conditions and hot weather, and then on the other hand, the season proves to be a dry one, the heavy soil mulch will conserve moisture in the subsoil, and the deep root system will permit the plants to develop a good crop, while on the shallow stirred soil the crop will burn up.

TOOLS USED IN CANTALOUPE CULTURE

The fourteen-toothed cultivator, with a steel weeding knife bolted across between the two back teeth, so as to run just below the surface, an inch of two, has become the most popular tool for cultivating on land clean of alfalfa roots or trash. This gives ideal tillage, and practically kills all the weeds except in the hills.

On alfalfa sod where the crowns would gather on the knife it is not so pleasant to use yet it will do very satisfactory work, but here the five-toothed cultivator is usually used; this tool is also used to furrow out rows by closing it up and placing a large shovel on the rear shank. When the cantaloupes are "laid by" (cultivated and furrowed out the last time) the irrigating furrows are made somewhat larger than before and thy should be "logged out" so that water can make its way through the rows after the vines have covered the ditches, it is also a good plan to lay the vines around out of the furrows once, to train them as much as possible away from the furrows: this will keep many of the cantaloupes out of the ditch, though the vines will eventually nearly cover the ground.

A two horse ten-toothed riding corn cultivator makes a splendid tool for large acreage.
GENERAL CARE OF THE CROP

If there is a secret in getting early cantaloupes, it is in growing them from start to finish in such a way that the growth is not checked at any time. The cantaloupe does not seem to have the power to rally from a check in growth or an injury of any kind; the set back, not only hinders the production of early fruits, but seriously affects the size and yield of the cantaloupes. There are numerous instances where unfavorable conditions of some kind, have checked the growth, in some part of a field that was planted and otherwise handled the same; invariably that portion of the field will show marked difference in size, netting or other qualities. The best promise of a good crop is a prompt and steady growth from germination to maturity.

The seedling period is the critical time in the development of a crop of cantaloupes, for it is at this stage that the check in growth usually occurs, from cold weather, high winds, lack of moisture or the attacks of insects.

A knowledge of the manner of growth of the root system and development of the seedling, will in a measure explain the reasons for the steps taken and the precautions that are necessary at this time in handling the crop through this important period.

The root system that first develops when the seed germinates, penetrates almost directly down from the seed while the stem or radical is pushing its way to the surface. These little roots seem to form a temporary support for the plant during the first two or three weeks, for up to this time the stem from the seed point to the top of the ground is smooth and white, with no evidence of the lateral roots.
The second root system develops from the stem about the time the fifth leaf appears, or four to five weeks after germination; these roots seem to form the main feeders of the plant, for the growth of the plant is almost insignificant until it feels the impulse of this larger and better root system. The question of good early growth and maturity almost hinges on the success of the farmer in supplying the conditions that will favor the early and proper development of this lateral, or main root system. It seems evident that the depth of planting and the manner of managing the soil in the hill has an important relation to the early development of these lateral roots. Experience teaches that seed planted much over two inches in depth are slow and difficult to germinate, being weakened by the long stem that is necessary to reach the surface, and on the other hand, if planting is too shallow, the seeds are apt to dry out, or if rain follows a crust will form, which must be removed, and that often exposes the seeds that are not planted at a sufficient depth, with fatal results, or leaves the plant with too shallow a stem support, it is then whipped and wrung by the high, drying winds or exposed to the attacks of the cucumber beetle.

Seed will germinate readily when weather conditions are favorable, if planted at about the depth of one and one-half inches.

When the seed leaves are nearly to the surface, the hills should be raked off, removing any crust or dry lumps which may obstruct the little melon plant. Plenty of seed should be used to provide against a loss in handling the hills, or from the attacks of insects. It also affords a chance to select the thriftiest individual plants when the thinning is done. Owing to the injuries from the striped cucumber beetle, the thinning should be delayed until the plants have about the fifth leaf, when the beetle will not do much more injury. The extra plants in the hill should be destroyed by pinching or cutting off the stems, as pulling them out may disturb the plants to be left.

INSECT ENemies

We will discuss this subject from the growers' standpoint only simply mentioning the methods that have proven to be the most successful under Colorado conditions. Doubtless in other states there are other pests and other conditions to influence the results.

No sooner has the seed germinated, than the struggle for existence begins; an effectual precaution is to plant plenty of seed, scattering it well in the hill, and even replanting before it is evidently necessary,—usually some replanting is required anyway. Crop rotation also, is often a good way of avoiding infested fields, in fact, "prevention is better than cure," in fighting insects and plant diseases.

The destruction of insect-harbors, such as weeds, old vines and plants, should be given more consideration, and the cultivation of the fields in the late fall, winter and early spring, will destroy many eggs and insects that pass the winter in the soil,—grasshoppers and cutworms for instance.

THE STRIPED CUCUMBER BEETLE.

This little black and yellow striped beetle, about a quarter of an inch long, is doubtless one of the most common melon pests, especially when the plants are young and in the two-leaf stage; long lists of remedies have been tried, but the best that experienced entomologists have to suggest is to spray the little plants as soon as possible with arsenate of lead, at about the usual, three-pounds-to-the-fifty gallon formula.

The beetles are not killed by this remedy but it acts as an efficient repellent. Spraying with the Bordeaux mixture is also recommended, but
the Bordeaux is better for the little black flea-beetles when they bother, as they do at times, but they usually work more on the cabbage, radish and turnip. The best means of applying sprays to small plants is the small type of sprayer that can be easily carried over the field, the type that has an air chamber in which pressure is pumped in, and that has a cut-off on the nozzle that works like a trigger, thus allowing the hills to be sprayed with little waste of the material. A very good spray pump of this type is The Brown Auto Spray No. 1, manufactured by The E. C. Brown Co., Rochester, N. Y.

Dusting the hills with air slacked lime, through a common cheese cloth sack is an old means of fighting the beetles but is not as effective as the arsenate of lead spray.

**THE MELON APHIS.**

The melon aphis is doubtless the most serious pest that the cantaloupe has to contend against in many places, and one against which resistance is least effectual where conditions are favorable to the aphis.

Fortunately for the growers in Colorado, the natural enemies of the aphis usually hold them in check quite effectually: the lady-beetle, the Syrphus flies and the lace-winged fly are the principal enemies to the aphis, some seasons a little parasitic fly destroys many aphis.

The only effective measure seems to be a careful watch of the fields to destroy the first plants found to be infected with aphis, as it seems that only a few insects are able to pass the winter, and they seem to spread from a few isolated points, and if these can be destroyed by finding them and burying them, early, has seemed to be the only plan to adopt, as spraying and fumigation has been tried by the most competent experts with very unsatisfactory results.

Spraying with “Blackleaf 40,” one ounce to ten gallons of water, with a little soap, say seven ounces, is the most effective spray where a few hills become infested, but where the whole field becomes infested, spraying has proven useless.

The introduction of the natural enemies, like the lady-beetles, has been tried in California with some promise, but this plan is in an experimental stage as yet. The necessity of supplying the enemy as soon as the aphis appears, makes this plan rather impractical for the grower.

Destroying the winter harbor or host plant of the melon-aphis would seem to be the best measure to adopt if possible; this winter harbor has not fully been determined for some points.

**THE PICKLE WORM.**

We have received many complaints from growers in the Southern part of the United States of injuries from this worm; we have made careful inquiry to find the best information on this pest, but we are sorry that there is no known remedy as yet, other than the general precautions of clean farming, rotation of crops and fall plowing; in the more northern melon districts, the attacks of this insect are apt to be only periodical, which is true with nearly all insects, they appear in waves, one year they may be very destructive and the next season will hardly be seen, so, there is no need of giving up because there have been insect pests one year. The eggs of the larvae of the pickle worm are deposited on the buds and tender shoots of the plants and as the young worm hatches, it feeds in the angles of the stems and leaves, and if the plants were well sprayed with arsenate of lead, the first broods would be largely held in check, and subsequent sprays might be profitable.
PLANT DISEASES

Crop rotation, seed selection, or breeding for disease resistance offer the best means of controlling plant diseases; the spraying of the crop with Bordeaux mixture or other fungicides is about the only other means at hand. In Colorado, spraying has not proven as successful as is reported to be in other states, doubtless due to different climatic conditions.

Careful control of irrigation seems to offer one means of lessening the attacks of some of the fungus troubles in the arid sections under irrigation.

HARVESTING

After all injuries to the crop have been explained and remedial measures suggested, there still remains one great cause of poor returns from the cantaloupe crop, viz., careless and unscrupulous methods of marketing. When cantaloupes are scarce and sales are quick, there seems to be no power on earth that will stay the hand of the average grower as he pushes his crop onto the market, with the encouragement of advices from his progressive (?) commission merchant; together they have produced a glutted market with inferior products, instead of protecting the markets with a quality that would increase consumption, they simply let it fill up with everything and anything, and neither the grower or the consumer is benefited. It is common for growers to admit that they are shipping cantaloupes that are not fit to be eaten, and it is not strange that a similar complaint comes from the consumer. Not till the grower is honest with himself, should he expect good returns.

PICKING

When green or over-ripe melons are allowed to go onto the markets, the trouble usually is in the picking; careless or mistaken ideas often prevailing. There is a very narrow limit in the stage of ripeness that a cantaloupe can be picked and have it in the right condition for distant markets. On one hand, it can not be picked so green as a tomato or lemon, and still ripen during shipment to fair quality, nor, on the other hand, can it be allowed to show any distinct color of ripeness, like an apple, without it becomes too soft on long shipments.

It should be ripe enough so the flesh will be sweet when cut open, yet too hard to be eaten for a day or two; it requires skill and experience to determine the proper stage.

Jocularly, it has been said, “The cantaloupe has three stages in three days,—green, ripe and rotten.” This expresses the fact that there is a very short period for marketing the crop in good condition, yet if picked at the proper stage, handled right, under refrigeration it can be shipped to distant markets in quite normal condition.

It is hard to describe to a novice, just how to detect the right stage to pick a cantaloupe; there is first, a very slight change of color in the interstices of the netting, hardly enough, however, to attract the attention of the inexperienced; second, it is tried with a pressure of the thumb or forefinger, when it should “slip,” that is, separate in the same manner as when real ripe; but requiring some little force but not enough to break the stem or flesh out, conditions of the vines, and climate will at times vary the picker’s judgment to some extent; but by cutting occasionally a melon the point can be decided. It is very essential that pickers be carefully instructed, and closely watched, for the good returns should not be expected from green, or overripe cantaloupes.
PACKING AND CRATING

The fruit should be carefully handled, not bruised, or roughly shaken to loosen the seed cavity, they should be hurried to the shade and crated as soon as possible; the cantaloupes should be carefully graded before crating, not only as to size, but for condition of ripeness; for there will always be some a little too ripe which must not be crated with the green-ripes, or the markets will suffer. In grading, the ripe melons can often be marketed in local or nearby markets, and the ones just right reserved for the long distance shipments.

In crating, the layers must be uniform, and tight, but not so crowded as to crush or bruise the flesh, yet there should not be a loose melon in the crate if it is expected to carry well.

In crating, the ends of the crate should be supported on the crating table, so that the slats can spring down in the center of the crate, then

Plate No. 18—Three styles of packing.

when the crate is finished and nailed up there will be no spring of the slats to loosen the pack when the crate is picked up.

The crate has been the standard package for a long distance haul, but there is a needed reform in the matter of grading and packing cantaloupes, as the old style grading of “pony,” “standard” and “jumbo” sizes has proven unsatisfactory. The standard 45-melon crate is good, but the “pony” has included too many immature cantaloupes, and has not been profitable in general and should be discarded. The “jumbo” crate is too heavy to handle well, and often difficult to crate well, when there are only a few cantaloupes that run to the jumbo sizes.

We submit the accompanying illustration of three styles of crating cantaloupes which will prove adequate to handle the marketable cantaloupes in the simplest way; with only two styles of crates required.
The standard sized cantaloupes would be first crated in a regular standard crate 12x12x24, 45 cantaloupes to the crate, then a size larger packed in the same sized crate with 36 cantaloupes to the crate, packed with what is known as the “diamond” pack,—as shown in the halftone.

The larger jumbo sizes then to be crated in a flat, one-layer crate with twelve cantaloupes to the crate, this crate would probably need to be about 5x14x24, this would be easy to handle, and popular for private home trade. With this style of grading and packing, there could be just three classifications, “Standard 45s,” “Standard 36s” and “flats” and there would be less bruising, trying to crowd large cantaloupes into crates, and handling large unwieldy jumbo crates, besides simplifying the number of different crates.

MARKETING

Marketing a crop of cantaloupes to good advantage is probably the most perplexing phase of the industry; we might classify the different methods of marketing in order to consider them:

First, Selling to the Local Trade—There is little to be said on this, other than the grower already knows, good goods, and fair treatment. Second, Selling on Consignment—This seems to be like “stepping out into the unknown,” there are so many uncertainties. There are several factors to consider here; the growers should be organized, in order to buy crates and load to advantage, they must take pains to find responsible commission men, they must plan to keep in touch with the markets, to know what the market needs and demands, and live up to their end of the deal, in shipping only first class cantaloupes; they should have some plan of cooperation so that in times of limited markets they could prorate the sales; or limit the growers to a certain number of crates to be shipped per acre when the market was glutted, and only a certain amount should be sent to the market, as it is better to leave the cantaloupes in the field than to ship and lose the work and still injure the glutted markets.

Probably the greatest encouragement in recent years for the cantaloupe growers, is the plan of the cantaloupe distributors forming an exchange, and co-operating in holding the markets free from glutted conditions. The plan is to have the distributors in a district get together each day and divide or prorate the shipments to certain markets, and not send to any one market more than it is possible for that market to dispose of; this plan has been worked to perfection in the Imperial Valley in California, and in the Rocky Ford district, the past season, and growers everywhere should refuse to deal with a commission firm who would refuse to cooperate in this way;—growers’ melons have been used to fight their neighbors too long. Third, Marketing in Transit—There are several commission firms who make this a specialty, in handling the large shipments from the big melon districts; in reality it does not differ from the commission form of selling, only the organization of a marketing system to keep in touch with the different markets and their needs; this could be handled by a competent manager of a large Association if it were not for the short season that the cantaloupes are handled from any one district, the large commission firms having the same organization that they can utilize for other products, hence it is doubtful if there is any better plan than to market through some of the well established agencies. Fourth, Marketing for Cash—This is the Utopian idea of the growers everywhere, and as long as cantaloupes are selling well it is alright, but when the price goes down the cash buyer is gone.
Strains and Varieties of Rocky Ford Cantaloupes

There is a prevalent idea that there is a variety of cantaloupe known as "Rocky Fords," strictly, this is erroneous; unless it is a name to embrace the miscellaneous cheap seed that is purchased from Rocky Ford, and catalogued under that name by a number of seed firms.

The fact is, the Netted Gem was the original variety used to develop the Rocky Ford cantaloupe industry, but thirty years of selecting and crossing has developed greatly improved types that are distinct and very different in many respects; but there are really only two or three types; one,—the "Pollock," has been renamed "Eden Gem," "Netted Rock," "Rust resistant" and so on, and the selection ideals followed by the men exploiting the new names have established slightly different strains of the Pollock. Hence there is a good deal of confusion in regard to Rocky Ford seed.

We are on the ground and have been familiar with the whole history of the different strains and without prejudice we have selected, after careful tests what we know to be the best strains, and we have adopted a systematic method of selecting and breeding which will develop and maintain the traits that the different strains are designed to represent.

The markets have a demand for both the GREEN, and SALMON-TINTED flesh in the Rocky Ford strains of cantaloupes; this is entirely distinct from the orange colored meat of the Osage types; and the growers also demand an extra early strain beside the main crop sort. We have aimed to meet these demands in the strains that we hereafter describe.

RUST-RESISTANT POLLOCK, SALMON-TINTED, NO. 25.

The original "Pollock" was the result of a hybrid, as running through nearly all the Pollock strains there are the two colors in flesh and various combinations of them,—Green and Salmon-tinted.

Through individual plant selection we have isolated these colors so as to run almost uniformly in two strains which we believe to be the best. Our Salmon-tinted No. 25, is a remarkable strain, not only for its uniformity, but for its netting, color of the flesh, quality of the flesh—both texture and flavor,—disease-resistance of the vine, prolific yields and ability to "make good" in various soil conditions; for out of over a thousand customers, we have not had a complaint of any kind from this No. 25; we would especially recommend this strain to those who have had dissatisfaction in other strains from any cause. The Pollock strains are later than some others we have to offer, but for quality they have no equal.

RUST-RESISTANT POLLOCK, GREEN FLESHED.

Our Green-fleshed Pollock is very similar to the other Pollock, except in the color of the flesh, which runs more green, shading to yellow at the cavity; we would recommend this strain for markets that demand a green-fleshed cantaloupe. The general character and appearance of the two strains of Pollock are the same; we class these two Pollocks as the best late or main crop varieties, of Rocky Ford Netted Gems.

THE RYAN’S EARLY WATTERS STRAIN.

There are localities where the early cantaloupe is very profitable and there is a demand for an early maturing cantaloupe; our Ryan’s Early Watters meets that demand; this strain holds the best records of high returns, on account of its very prolific yields of extra early cantaloupes. In appearance it is almost identical with the Pollock type, it has the green colored flesh, and the same general flavor. We have bred it as carefully, but the special point in the selection has been prolific, early maturity. This strain germinates very strong, vigorous plants, the fruit sets early.
and the crop matures in a very short time, yet is extremely prolific, often making yields of two hundred and fifty crates, per acre. At Rocky Ford it begins to ripen about Aug. 1, and is fully a week earlier than the Pollock strains. We would recommend it where the tendency to fungus troubles is not too marked, and for a small portion of a grower's plantings it will doubtless pay in many locations.

EARLY RUST-RESISTANT, HYBRID NO. 2.

Several years ago we succeeded in getting a cross of the Rust-Resistant Pollock and the Early Watters, this we have named our Hybrid No. 2. It combines the two characteristics of early maturity and disease resistance. This strain has a remarkable vigor of growth, until it has set and developed a large set of fruit, and then the growth seems to stop,—that is the new shoots, the vines seeming to throw all the force into the development of the fruit. This trait seems to make it desirable in one point, as it has not been so seriously attacked by the melon aphids as the strains that have plenty of young succulent shoots.

This strain has now been grown three seasons for market, and while we have priced it higher than our other strains, each year we have been short of this seed, but this season we have grown a good quantity, and expect to lower the price to the same as our other seed.

We consider this Hybrid No. 2 the best early strain by all odds. It is early as the Watters, and almost as disease-enduring as the Pollock strains; it is very prolific, and especially so in producing a heavy yield of the first early sets.

The flesh of this strain is green, the netting exceptionally good, the cantaloupes are rather inclined to be longer in form than our other strains, and is not quite as regular in size, yet its many good qualities make it the most desirable cantaloupe to plant for early; in our estimation, a very good mate for our No. 25, where an early and late strain are both desired.

NEW STRAINS OF PROMISE.

Triple Hybrid No. 3. We have succeeded in blending the good qualities of three varieties into one strain which for three seasons we have tested in nursery selections and we feel confident that it has great merit: the melon has an exceedingly heavy close netting, and thick flesh, of a salmon tint at the center, with a deep zone of emerald near the rind. This cantaloupe runs rather large at present, but on account of its exceptionally attractive appearance, we believe it would be valuable to market growers, especially for local trade, we do not care to offer this seed for sale until it has had a test in the different districts, and we are anxious to place it in the hands of a large number of market gardeners, to test, throughout the country.

Therefore we will send free to any one sending us a list of the market gardeners of their vicinity interested in growing cantaloupes, a large two-to-four ounce package of this new cantaloupe.

The Osage type of cantaloupe that has been grown for several years around Ordway, Colo., adjacent to the Rocky Ford district, is becoming very popular on the market on account of its exceptionally good keeping quality, and its thick, orange colored flesh that has an exceptionally spicy flavor which many are fond of. But this variety has the weakness of having a very unattractive form and appearance, and a very undesirable tendency to crack open when nearly ripe, thus resulting in a great loss to growers, and in fact on this account, this variety has not been a success except in a few localities.

We are very glad to announce that we have a hybrid of this Defender cantaloupe and the Pollock, which has great promise of combining the
fine netting and appearance, and disease-resistance of the Pollock, with the deep orange flesh, small seed cavity, and spicy flavor of the Ordway cantaloupe. However, we have no seed of this Hybrid to distribute this season.

The following table gives the usual time of planting and the period of harvest for the different districts where we have furnished seed; which we have taken from reports we have received from some of our customers:

<table>
<thead>
<tr>
<th>District and State</th>
<th>Dates of Planting</th>
<th>Period of Ripening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brownsville, Texas</td>
<td>Feb. 10 to 20</td>
<td>May 10 to June 10</td>
</tr>
<tr>
<td>Gainesville, Fla.</td>
<td>Feb. 10 to 20</td>
<td>May 10 to June</td>
</tr>
<tr>
<td>Imperial Valley, Calif.</td>
<td>Feb. 20 to March</td>
<td>May 20 to July 1</td>
</tr>
<tr>
<td>Lake Charles, La.</td>
<td>March 1 to 15</td>
<td>June 1 to July 1</td>
</tr>
<tr>
<td>Northern Louisiana</td>
<td>March 20 to April 20</td>
<td>June 20 to July 20</td>
</tr>
<tr>
<td>Blackville, S. C.</td>
<td>April 1 to 15</td>
<td>June 15 to July 10</td>
</tr>
<tr>
<td>Belton, Ark.</td>
<td>April 1 to 10</td>
<td>July 1 to Aug. 1</td>
</tr>
<tr>
<td>Southern Mississippi</td>
<td>April 1 to 10</td>
<td>July 1 to Aug. 1</td>
</tr>
<tr>
<td>Glendale, Ariz.</td>
<td>April 1 to 20</td>
<td>July 5 to Aug. 5</td>
</tr>
<tr>
<td>Atoka, Okla.</td>
<td>April 1 to May</td>
<td>July 10 to Sept</td>
</tr>
<tr>
<td>Decker, Ind.</td>
<td>April 1, in hot beds</td>
<td>July 10 to Aug 20</td>
</tr>
<tr>
<td>Southwest Arkansas</td>
<td>April 1 to 15</td>
<td>July 1 to Aug. 1</td>
</tr>
<tr>
<td>Moapa, Nev.</td>
<td>April 1 to 15</td>
<td>July 20 to Aug. 10</td>
</tr>
<tr>
<td>Dover, Del.</td>
<td>April 5 to 20</td>
<td>Aug. 1 to 15</td>
</tr>
<tr>
<td>Anna, Ill.</td>
<td>April 5 to 15</td>
<td>Aug. 1 to 20</td>
</tr>
<tr>
<td>Knox Co., Tenn.</td>
<td>April 20 to May 20</td>
<td>July 20 to Sept.</td>
</tr>
<tr>
<td>Greenriver, Utah</td>
<td>April 20 to May</td>
<td>July 25 to Aug 25</td>
</tr>
<tr>
<td>Eastern Washington</td>
<td>April 20 to May</td>
<td>Aug. 1 to Sept.</td>
</tr>
<tr>
<td>Medford, Oregon</td>
<td>April 10 to May</td>
<td>Aug. 1 to Sept.</td>
</tr>
<tr>
<td>Parsonsburg, Md.</td>
<td>May 1 to 15</td>
<td>July 20 to Aug. 15</td>
</tr>
<tr>
<td>Northwest Arkansas</td>
<td>May 1 to 15</td>
<td>July 20 to Aug. 15</td>
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<td>Rocky Ford, Colo.</td>
<td>May 1 to June 1</td>
<td>Aug. 5 to Oct. 1</td>
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<tr>
<td>St. Thomas, Pa.</td>
<td>May 10 to 20</td>
<td>Aug. 25 to Sept. 10</td>
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<tr>
<td>Frederickburg, Va.</td>
<td>May 10</td>
<td>Aug. 10 to Sept. 1</td>
</tr>
<tr>
<td>King Hill, Idaho</td>
<td>May 10</td>
<td>Aug. 10 to Sept. 1</td>
</tr>
<tr>
<td>Michigan</td>
<td>May 20</td>
<td>Aug. 20 to Sept. 20</td>
</tr>
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</table>

The above table is far from complete, and in many cases may not indicate the exact dates or range of season, but it is worked out from the material we had at hand, we would be glad to receive at any time any additions or corrections, so that in time we may complete the table so as to serve as a guide for growers.

It will be noted that there is a wide range of differences in the time of ripening when cantaloupes are planted at about the same time, due to the different seasons, the climatic conditions, and the soil, and these same differences make different results in the appearance and quality of the cantaloupes to quite an extent.

A WORD ABOUT ORDERING SEED

In order to save good seed from fields from which no cantaloupes are marketed, we are compelled to waive the chances of marketing our crop in August and September at prices often more remunerative than what we would receive from seed; besides having to wait six to seven months for the returns from the seed sales, which are usually made in the following spring. But we have based our prices of seed on the average return from cantaloupes for a series of years, and hence we do not expect to make any violent changes, as we have gone to considerable effort to
establish our trade in high grade seed and in the long run we expect it will pay, yet it can readily be seen that there is little incentive for the average grower to save good seed without an assured market, to say nothing about the time and care that is required to select and develop the seed, in fact, with the work of marketing this crop, the ordinary grower cannot afford to save good seed, and this accounts in a large measure, for there being so little really first class seed on the open market.

Our efforts to establish a dependable source for reliable cantaloupe seed seem to be appreciated by the great majority of growers.

Most of our customers have been prompt in their remittances and business like in their dealings, but a few slow and uncollected accounts can easily overbalance any advantage in saving high grade seed; therefore, TO MAKE IT WORTH WHILE TO SAVE GOOD SEED WE MUST INSIST ON A MORE STRICT POLICY IN SENDING OUT OUR SEED, AND HEREAFTER WE WILL FILL ONLY ORDERS THAT ARE ACCOMPANIED WITH THE REMITTANCE, OR THAT ARE ORDERED WITH THE ENDORSEMENT OF A BANK. WE WILL SEND SEED C. O. D. IF TEN PER CENT OF THE AMOUNT IS SENT IN ADVANCE. We will also book orders, and reserve the seed to such time that the customer can make his remittance, thus assuring him of his seed.

All our seed is accompanied by the following certificate which assures the purchaser of the breeding back of the seed, if he receives the package with the seal unbroken:

Seed Certificate
OF
The Rocky Ford Cantaloupe Seed Breeders’ Association
Rocky Ford, Colorado

Cantaloupe Seed accompanied by this Certificate, signed and sealed, with the package unbroken, is guaranteed to have been produced by this Association, in accordance with the most approved method of seed breeding. SEED FROM THIS ASSOCIATION IS SOLD ONLY WITH THIS CERTIFICATE, AND EACH SACK OF SEED IS SEALED WITH A LEAD CAR SEAL, (except when sent in the mail). The purchaser is hereby assured of first grade selection, of a pure strain of cantaloupe seed of the__________ Variety. No.__________________

This seed has been grown from pedigreed stock seed, and selected from a field grown exclusively for seed, and the requirements for this grade of selection were, standard size, close netting, fully matured; and having no defects that could injure the results of the crop to be grown from this seed. This seed was all cut by hand, and washed in a sluice box, which floats off all light, immature seed of low specific gravity, thus insuring the highest germination possible.

This certificate is intended as a Pure Seed Label to identify our seed, and it shall not be construed as a crop insurance, as poor results might be due to any number of adverse influences, over which we have no control.

We do, however, guarantee that the seed is as represented, but that this guarantee shall cover only the cost of the seed to the purchaser, when a reasonable ground for complaint is established.

In testimony whereof, the seal of this Association is hereby affixed this ________________________ 19__________

_____________________________ Secretary.
Price Quotations and Other Information

We offer the following strains of cantaloupe seed at retail, prepaid, to any part of the United States:

Rust-Resistant Pollock, green fleshe... 15 cents per oz.; $1.50 per lb.
Rust-Resistant Pollock No. 25, salmon tint... 15 cents per oz.; $1.50 per lb.
Ryan's Early Watters ... 15 cents per oz.; $1.50 per lb.
Early Rust-Resistant Hybrid No. 2 ... 15 cents per oz.; $1.50 per lb.

In ordering seed, please remember remittance must accompany order.

We will hold orders for a reasonable time for shipment or will send seed C. O. D. when 10 per cent of the purchase price is sent with the order.

We are sometimes asked to make lower quotations to meet the price of other firms, but we will not attempt to meet prices of other concerns. The prices we ask for seed are reasonable, if the quality we furnish is considered, for two reasons; first, because the seed is saved from fields grown exclusively for seed, where no cantaloupes are marketed, and second, because the market price of the grade of cantaloupes the seed is saved from, is nearly equal to the price we ask for the seed, to say nothing of the time and experience the seed breeding requires. A high grade article can not be sold with profit in competition with cheap grade articles.

Owing to the existence of several cantaloupe growers' associations being organized here at Rocky Ford, mail intended for the Cantaloupe Seed Breeders' Association should be addressed to James B. Ryan, Secretary, Rocky Ford, Colorado, to avoid delays.