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Notes on some of the newer vegetables

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A. T. Erwin
E. S. Haber

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CONTENTS

Snap Beans ...............................131
Green Podded Varieties 132
  Asgrow Stringless Green Pod ..........132
  Burpee's Stringless Green Pod ..........132
  Refugee ..............................132
  Tennessee Green Pod 132
  Bountiful ............................132
  Tendergreen ..........................133
  Full Measure ........................133
  Giant Stringless Green Pod ...........133
Wax Podded Varieties 133
  Pencil Pod Black Wax ..........133
  Round Pod Kidney Wax ........133
  Sure Crop Wax ....................134
  Webber Wax ..........................134
  Unrivalled Wax ......................134
  Sioux Stringless Wax ..............134
Carrots .........................................135
  Asgrow Imperator ........135
  Table Queen ......................136
Beets ...........................................136
  Ohio Canner .....................136
  Early Wonder ....................136
Tomatoes ...................................137
  Harris Early Stone ........139
  Prichard ............................139
  Break-O-Day .........................139
  Rutgers ..........................140
Sweet Corn ..........................140
  Golden Cross Bantam ..........141
  Tendergold .........................141
  Top-Cross Bantam ..........141

Kingserost .........................142
Iogent 12.45 ..................142
Iowa Top-Cross Country Gentleman ........142
Iogold 16.40 ..................142
Lesser Known Varieties ........143
  Spanish Gold ......................143
  Sunshine ..........................143
  Purdue Bantam ..................143
  Iogreen 91.48 ...............143
Cucumbers .........................144
  Shamrock ........................144
Muskmelons ..........................144
  Honey Rock or Sugar Rock ..........144
  Weaver Special or Imperial ........145
  Early May ........................145
  Pearly Pink ......................145
Watermelons ..........................145
  Dixie Queen ......................146
  Stone Mountain ................146
  Improved Kleckley No. 6 ........146
Squashes ..............................146
  Buttercup .......................146
  Delicata ........................147
Potatoes ..............................147
  Katahdin ........................148
  Chippewa .........................148
  Warba ............................148
  Golden ..........................149
Rhubarb ..............................149
  Ruby ............................149
  McDonald ........................149
Notes on Some of the Newer Vegetables

By A. T. Erwin and E. S. Haber

In presenting the following report on some of the newer vegetables recently tested at the Iowa Agricultural Experiment Station, no attempt is made to embrace all the new varieties or possible synonyms offered in the American seed trade. In cases where the results were so distinctly negative as to indicate that the variety was unsuited to the soil and climatic condition of central Iowa, it was omitted from the list.

The fact that a variety may be of special value for one purpose, but possibly inferior for another, should be borne in mind. The Ohio Canner beet is admirably adapted for the canners' needs, but not particularly suited for the market gardener. The same may be said of other crops, such as sweet corn and tomatoes.

In each class of vegetables a number of the standard commercial varieties were interplanted with the new varieties to serve as a basis of comparison under the same seasonal conditions.

Some of the varieties listed herewith seem to possess certain characters of merit. However, the commercial grower will wisely adhere to a standard list and limit the planting of newer kinds until they have proved their superiority.

SNAP BEANS

This group comprises a long list of varieties which come under the general classification of kidney beans and are derived from a species native to Mexico.

With the exception of the drouth years of 1934 and 1936, tests on snap bean varieties of both the green and wax podded strains have been conducted at Ames for several seasons.
GREEN PODDED VARIETIES

Asgrow Stringless Green Pod

Asgrow Stringless Green Pod, a snap bean with dark green, round pods, was introduced by the Associated Seed Growers in 1930. In the 2 years it has been on trial—1933 and 1935—this variety has proved to be very productive. The pods are straight, a little shorter than Stringless Green Pod, stringless, free of fiber in the side walls and very tender.

Time from planting to picking the Asgrow Stringless varies from 50 to 60 days. Seed color is purple, mottled with buff.

Burpee's Stringless Green Pod

No introduction of recent years has proved to be a more dependable cropper under Iowa conditions than the old standard variety, Burpee's Stringless Green Pod. Pods are slightly lighter in color and longer than the Asgrow Stringless. Days from planting to picking average about 55. Seeds are dark brown in color.

Refugee

Refugee and Mosaic Resistant Refugee varieties are not satisfactory in central and southern Iowa, although they are used extensively by canners in Wisconsin. Refugee, a late variety, did not produce beans until Sept. 1 in any of the 3 years in which it was tested. Although the number of days from planting to picking is usually given as 70 to 75, at Ames 90 to 100 days have been required. Refugee plants are large and spreading, with light green foliage; the quality of the beans is high, but the yield is low. Seeds are purple, mottled with buff.

Except for its high resistance to mosaic, the mosaic-resistant strain seems to be identical to the old Refugee.

Tennessee Green Pod

Tennessee Green Pod is not a good whole-bean canning type as the pods are flat, curved and somewhat fibrous. Bacterial blight infected the vines on the test plots during the growing seasons of 1933 and 1934 and the plants died prematurely, failing to produce a full crop. Beans may be picked approximately 55 days after planting.

Bountiful

Bountiful, a bean which is a dependable cropper and has a
good flavor, because of its flat and fibrous pods is not satisfactory for canning. Plants are medium-large in size, thrifty and prolific. Seeds are tan in color.

**Tendergreen**

Tendergreen, seeming to be adversely affected by heat and drouth, did not produce a full crop in any of the 3 years it was tested. Resembling Full Measure, the plants bear round, dark green, high quality pods which require about 55 days to reach the picking stage. Seeds are a mottled purple.

**Full Measure**

Full Measure is much like Tendergreen in all characteristics, including susceptibility to heat and drouth. Its seeds are reddish-brown with tan mottling.

**Giant Stringless Green Pod**

This variety compares with Burpee’s Stringless in that from the standpoint of yields it is one of the most dependable green podded varieties known. The Giant Stringless plants are large and erect. The medium, green pods are round, stringless and free of fiber.

Indentations on the pods between beans make this bean somewhat objectionable for commercial canning. This is not serious if the beans are picked when very small, but the defect becomes more prominent as the pods mature. About the average length of time, 55 days, is required for the beans to reach picking maturity. Seeds are light brown in color.

**WAX PODDED VARIETIES**

**Pencil Pod Black Wax**

Pencil Pod Black Wax is a desirable variety for home and market use, but is not desirable for commercial canning because of the solid black seeds. Pods are round, curved, stringless, tender, of good quality and have a golden yellow color. Fifty-five days after planting they are ready to be picked.

**Round Pod Kidney Wax**

Round Pod Kidney or Brittle Wax is possibly the finest quality wax bean in the test plots. It is also a desirable canning type. Plants are vigorous and erect, bear round pods and are medium yellow in color. Pods are stringless, slightly curved
and have a deeply creased back. Days to picking maturity vary from 52 to 55. Seed is white with a dark eye or hilum.

**Sure Crop Wax**

Because of its flat pods and black seeds the Sure Crop Wax variety is not wanted by the commercial canner, regardless of the advantage of being stringless and of very little fiber. Beans may be picked from 52 to 55 days after planting.

**Webber Wax**

One of the earliest varieties tested, requiring only 48 to 50 days to reach the picking stage, Webber Wax is a satisfactory variety for the home and small garden but not a canning type. Plants grow erect, bearing flat pods of fine quality, although somewhat stringy and fibrous when full grown. Seeds are buff in color.

**Unrivalled Wax**

Despite unfavorable climatic conditions for beans at Ames in 1935, Unrivalled Wax produced nearly twice as many pounds as any other wax variety in the yield tests. Plants are stocky and dwarf, while the pods are deep yellow in color, narrow, somewhat flat, stringless but fibrous. Unrivalled Wax is not adapted to the canners' needs because of the tendency to produce flat pods. Seed is of a light brown color.

**Sioux Stringless Wax**

This variety is more prolific than many of the older well-known varieties of wax beans. The vine is strong growing, upright, bearing straight round pods about 6 inches long, stringless, fiberless and crisp, but the color is light yellow. Because of the light colored pods it would not be satisfactory for commercial canning purposes. The mature seeds are reddish-brown mottled in color.

The following table includes yields of varieties tested for more than 1 year. In 1934 and 1936 all varieties failed to yield because of heat and drought. Several of the new introductions described were included in the tests in 1934 and 1935, but yields for only 1 year (1935) are available. These are not given, as a 1-year test may be unreliable. The varieties were planted so that plants were spaced in the row from 2 to 3...
inches apart. The rows were 2 feet apart and 150 feet long. Yields are based on the average yield of three replications.

<table>
<thead>
<tr>
<th>TABLE 1. YIELDS OF BEANS IN POUNDS FROM 150-FOOT LINEAR ROW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variety</td>
</tr>
<tr>
<td>-------------------------------</td>
</tr>
<tr>
<td>Asgrow Stringless Green Pod</td>
</tr>
<tr>
<td>Bountiful</td>
</tr>
<tr>
<td>Burpee’s Stringless Green Pod</td>
</tr>
<tr>
<td>Corbett Mosaic Resistant Refugee</td>
</tr>
<tr>
<td>Extra Early Stringless Red Valentine</td>
</tr>
<tr>
<td>Full Measure</td>
</tr>
<tr>
<td>Giant Stringless Green Pod</td>
</tr>
<tr>
<td>Golden Wax</td>
</tr>
<tr>
<td>Kentucky Wonder</td>
</tr>
<tr>
<td>Pencil Pod Black Wax</td>
</tr>
<tr>
<td>Refugee</td>
</tr>
<tr>
<td>Round Pod Kidney Wax</td>
</tr>
<tr>
<td>Royal Purple Wax</td>
</tr>
<tr>
<td>Sioux Stringless Wax</td>
</tr>
<tr>
<td>Tendergreen</td>
</tr>
</tbody>
</table>

CARROTS

Carrots originated in Holland some time prior to the beginning of the sixteenth century and since then have developed from a weed into a vegetable popular in all temperate countries. At present there are more than 40 varieties grown in the United States. The five most widely grown varieties in the order of their popularity are: Chantenay, Danvers Half Long, Oxheart, Nantes and Long Orange. In the Ames trials, two new strains—Asgrow Imperator and Table Queen—showed qualities which may win them a place with Iowa gardeners.

ASGROW IMPERATOR

Asgrow Imperator, a long, slender, tapering carrot with sloping shoulders, good internal color and a small core, received an Award of Merit in the All-American seed trials of 1933. It was introduced by the Associated Seed Growers.

Tops of the Imperator are medium in height, but strong enough to withstand pulling without breaking. Tops also shape into bunches satisfactorily. The Asgrow Imperator develops slowly when planted as a spring crop at Ames.
Similar in shape to the Nantes Half Long, Table Queen has proved to be much more uniform in size, shape and color than the Nantes. In fact, it was the most uniform of seven varieties grown in the test plots in 1935. Table Queen has a good internal color and the flesh is sweet, crisp and tender, with a small core.

BEETS

Beets are grown today almost exclusively for the thick fleshy root produced for pickling and cooking purposes, but during the past 2,000 years the plant has been cultivated in its native home, Asia, for its leaves and stems which are used for greens. This long and continuous cultivation and selection has naturally led to the development of numerous varieties, many of which are now quite common. Most varieties are characterized by a deep red root and it is because of this that the plant is so-named, for the word "beet" comes from a Celtic word meaning red.

Of the varieties tested here, the Ohio Canner and Early Wonder seem worthy of mention.

OHIO CANNER

Best suited for canning purposes where a small beet is desired, the Ohio Canner, a development of the Ohio Agricultural Experiment Station, is a midseason variety for this section of the country. Its small size, however, may make it undesirable for the market gardener, especially when it is grown as a late or fall crop. The fleshy root of this beet is small, uniform, globular in shape, smooth and of a deep red color. Light zones in the flesh, so common in many strains of older varieties, are absent from the deep, dark red flesh of the Ohio Canner.

EARLY WONDER

Early Wonder is a satisfactory beet for the gardener who desires an early variety regardless of its color characteristics; or for the home garden where tenderness, good flavor and early maturity are more important than color. Its blood-red flesh, marked with distinct zones of pink or white, makes it unsuitable for commercial canning purposes, where a dark red beet is always desired.
TOMATOES

Once known as "love apples," and thought to be poisonous, the tomato now is recognized as an essential and palatable vegetable. As the use and popularity of the tomato grew, many varieties were originated and from these a number of dependable ones, such as the Earliana, Bonny Best and John Baer, became favorites among the Iowa growers. Recent varietal studies made at this station include several new ones: Rutgers, Pritchard, Break-O-Day and Harris Early Stone, some of which show promise for the Corn Belt.

Because the early crop finds a ready sale and at a higher price than the main season crop, growers are especially interested in the time of maturity. For central Iowa the harvesting period for tomatoes commonly runs from July 15 to Sept. 15. August 15 was therefore arbitrarily selected as the dividing line between the first and second half of the season. In table 2 are presented the yields of the five leading varieties in quantity of fruit harvested during the first half of the season. The five varieties which placed in this list in 2 years out of 3 were Early Stone, Pritchard, Bonny Best, Marglobe and Greater Baltimore.

### TABLE 2. HIGHEST YIELDING TOMATO VARIETIES FOR FIRST HALF OF SEASON

<table>
<thead>
<tr>
<th>1933</th>
<th>Yield* (lbs.)</th>
<th>1934</th>
<th>Yield* (lbs.)</th>
<th>1935</th>
<th>Yield* (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Stone</td>
<td>119.5</td>
<td>Penn State Earliana</td>
<td>156.1</td>
<td>Early Stone</td>
<td>231.0</td>
</tr>
<tr>
<td>Pritchard</td>
<td>103.5</td>
<td>Greater Baltimore</td>
<td>140.7</td>
<td>Bonny Best</td>
<td>184.0</td>
</tr>
<tr>
<td>Break-O-Day</td>
<td>88.5</td>
<td>Pritchard</td>
<td>138.7</td>
<td>Penn State Earliana</td>
<td>172.0</td>
</tr>
<tr>
<td>Marglobe</td>
<td>94.0</td>
<td>Bonny Best</td>
<td>135.8</td>
<td>Prairiana</td>
<td>360.0</td>
</tr>
<tr>
<td>Greater Baltimore</td>
<td>89.0</td>
<td>Marglobe</td>
<td>104.7</td>
<td>Illinois Pride No. 119</td>
<td>149.0</td>
</tr>
</tbody>
</table>

*Yield of No. 1 tomatoes.
†Average of three plots, 18 plants each, planted 5 ft. x 7 ft.

None of the varieties held the same relative position for all 3 years, and Early Stone was the only variety to hold the same position for 2 of the 3 years, indicating that the ranking is rather close from the standpoint of early maturity.

It is not only important that a variety yield well early in...
the season, but also that it show a satisfactory yield for the entire season. For certain purposes, as canning, the total yield of mature fruit is the main consideration. In table 3, presented herewith, is given the total yield of ripe fruit for the entire season without respect to time of maturity.

**TABLE 3. HIGHEST YIELDING TOMATO VARIETIES FOR ENTIRE SEASON**

<table>
<thead>
<tr>
<th>Variety</th>
<th>1933 Yield* (lbs.)</th>
<th>1934 Yield* (lbs.)</th>
<th>1935 Yield* (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Stone</td>
<td>565.5</td>
<td>477.3</td>
<td>334.0</td>
</tr>
<tr>
<td>Break-O-Day</td>
<td>547.0</td>
<td>476.4</td>
<td>302.0</td>
</tr>
<tr>
<td>Marglobe</td>
<td>522.0</td>
<td>408.4</td>
<td>295.0</td>
</tr>
<tr>
<td>Pritchard</td>
<td>515.5</td>
<td>394.1</td>
<td>295.0</td>
</tr>
<tr>
<td>Greater Baltimore</td>
<td>393.5</td>
<td>377.7</td>
<td>276.0</td>
</tr>
</tbody>
</table>

*Yield of No. 1 tomatoes.
†Average of three plots, 18 plants each, planted 5 ft. x 7 ft.

As was shown in table 2, none of the varieties held the same rank in all three seasons, although the Early Stone placed first twice in the 3 years, failing, however, to place among the top five in 1934. In table 4 are given the yields of varieties tested.

**TABLE 4. YIELDS OF ALL TOMATO VARIETIES TESTED**

<table>
<thead>
<tr>
<th>Variety</th>
<th>Yields*†</th>
<th>Percent culls‡</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1933</td>
<td>1934</td>
</tr>
<tr>
<td>Break-O-Day</td>
<td>547.0</td>
<td>418.4</td>
</tr>
<tr>
<td>Bonny Best</td>
<td>314.4</td>
<td>295.0</td>
</tr>
<tr>
<td>Clark’s Special</td>
<td>314.4</td>
<td>295.0</td>
</tr>
<tr>
<td>Early Stone</td>
<td>565.5</td>
<td>477.3</td>
</tr>
<tr>
<td>Greater Baltimore</td>
<td>593.5</td>
<td>477.3</td>
</tr>
<tr>
<td>Kerns Perpetual</td>
<td>314.4</td>
<td>295.0</td>
</tr>
<tr>
<td>Illinois Pride No. 119</td>
<td>314.4</td>
<td>295.0</td>
</tr>
<tr>
<td>Marglobe</td>
<td>522.0</td>
<td>394.1</td>
</tr>
<tr>
<td>Penn State Earliana</td>
<td>394.1</td>
<td>276.0</td>
</tr>
<tr>
<td>Prailiana</td>
<td>222.0</td>
<td>276.0</td>
</tr>
<tr>
<td>Pritchard</td>
<td>515.5</td>
<td>477.3</td>
</tr>
<tr>
<td>Purple King</td>
<td>290.3</td>
<td>249.0</td>
</tr>
<tr>
<td>Rutgers</td>
<td>137.0</td>
<td>270.0</td>
</tr>
<tr>
<td>Scarlet Dawn</td>
<td>237.6</td>
<td>270.0</td>
</tr>
<tr>
<td>Stone</td>
<td>251.0</td>
<td>229.0</td>
</tr>
<tr>
<td>Vaughan’s Improved Stone</td>
<td>229.0</td>
<td>186.0</td>
</tr>
<tr>
<td>Victory Special</td>
<td>222.0</td>
<td>276.0</td>
</tr>
<tr>
<td>Way-a-head</td>
<td>237.6</td>
<td>276.0</td>
</tr>
</tbody>
</table>

*Yield of No. 1 tomatoes.
†Average of three plots, 18 plants each, planted 5 ft. x 7 ft.
‡Percent of total yield.
HARRIS EARLY STONE

This variety has been tested for 3 years at Ames; and it has been under observation in the trial plots of the Marshall Canning Company, Marshalltown, Iowa, for the past four summers, where it proved outstanding in 2 out of 3 years, in spite of the adverse climatic conditions for tomatoes which prevailed in central Iowa during those seasons.

Fruit of this new variety is smaller and earlier than that of the old Stone variety, but in other fruit characteristics the two varieties are quite similar, the fruit of the Harris Early Stone being smooth, deep red, meaty and not too acid. Vine characteristics, however, resemble more closely those of the Bonny Best.

PRITCHARD

Pritchard is an introduction of the United States Department of Agriculture under the name of Scarlet Topper, but later changed to honor its originator.

Pritchard has proved to be one of the best yielding varieties of tomatoes tested at Ames during a 3-year period on a highly fertile soil. During the past few years reports received from some Pritchard growers in the state were highly favorable, while equally as many growers reported in the negative. Upon investigation it has been found that the variety gives highly satisfactory yields when grown on rich, fertile soils, but when grown on thin or light soils, or in a water deficient environment, the strain proves very unsatisfactory, the fruits and plants averaging too small under such conditions.

The Pritchard is smaller and earlier than Marglobe, Stone or Baltimore. It is not, however, one of the very early varieties. The fruit is solid in flesh and of a fine color, the crop ripens in a relatively short period of time, and the plant shows some resistance to Fusarium wilt.

BREAK-O-DAY

The Break-O-Day tomato has been disappointing in the Ames tests. Though not so early as the Earliana, it deserves some consideration for earliness. The vines, though resistant to Fusarium
wilt, are not robust, and the sparse foliage allows the sunlight to scald much of the fruit in very hot weather. The yield of the large globular fruit, lighter in color than desired by the commercial canners, is quite small.

**RUTGERS**

Rutgers, a variety developed by crossing Marglobe and J. T. D. at the New Jersey Experiment Station, is an excellent tomato for canning as it has small seed cavities, thick inner and outer walls and a good internal color. It is comparatively low in acidity, is almost round and has an attractive dark red exterior.

On rich land the Rutgers is vigorous in growth and its abundant foliage protects the fruit from sunscald. Its growing season is comparable to that of the Marglobe, but its fruit, in general, is slightly larger than that from the older variety. Although the yield of this variety was low in 1935, it has been on trial at Ames for only 1 year, and further study and testing is necessary before its value as a canning variety for the Middlewest can be determined.

**SWEET CORN**

Sweet corn, the primitive types of which are probably native to southern Mexico, is a mutation of field corn. Some of the older varieties, such as Stowell’s Evergreen, still maintain an important place among the canning varieties. However, hybridization has opened up a new field which gives promise of producing seedlings which will replace the standard sorts.

With the golden types especially, inbreeding and crossing of the resulting pure lines have resulted in the production of some superior sweet corn strains, and more successful results are expected from this practice in the immediate future.

Growers of hybrid corn are cautioned, however, not to attempt to save seed from their sweet corn hybrids, as seed for the hybrid must be produced each year by the crossing of two or more different inbred lines of corn. *Satisfactory results cannot be expected unless new seed is planted each year*. By thoroughly understanding the procedure and by having the right kind of
environment and conditions for doing so, the sweet corn grower may produce his own hybrid seed, but the average grower will find that it will be more satisfactory to purchase certified hybrid seed from a reliable producer.

**GOLDEN CROSS BANTAM**

Golden Cross Bantam is a single cross hybrid sweet corn introduced at the Indiana Agricultural Experiment Station by crossing inbred strains Purdue numbers 1339 and 1351. The kernel type of this new corn is similar to that of the Golden Bantam, broad and shallow.

Although the quality of the hybrid is excellent (equalling Golden Bantam), Golden Cross frequently yields twice the tonnage of snapped ears as the original Bantam. In the tests the ears reached the edible stage 7 to 10 days later than Golden Bantam. At the canning stage the kernels are slightly lighter yellow than the old Bantam. The number of rows of kernels varies from 8 to 12.

Wherever bacterial wilt (known as Stewart's disease) is prevalent, Golden Cross should be planted in preference to Golden Bantam, as it is quite resistant to the wilt. This disease was very serious in some southeastern Iowa localities during the summer of 1935.

**TENDERGOLD**

A crossing of the Sunshine variety with the inbred Purdue 1339 produced this early top cross Golden Sunshine hybrid called Tendergold. This hybrid is of high quality, as early as Golden Bantam, and its kernels at the canning stage are a golden yellow. Tendergold is much less variable in row number than Golden Cross Bantam. Iowa yield records show that Tenderfold has produced consistently as much as 50 percent more corn per season than either Bantam or Sunshine.

Sunshine is earlier than Bantam but subject to smut and Stewart's disease. The cross with Purdue 1339, however, produces a corn somewhat resistant to both diseases.

**TOP-CROSS BANTAM**

A hybrid known as Top-Cross Bantam, the result of crossing Golden Bantam with some prepotent inbred, is superior to
Golden Bantam in that it has greater uniformity in maturity of ears and greater resistance to some diseases, such as bacterial wilt and smut. Purdue 39 is the inbred used most frequently to produce this hybrid, although several other inbreds have been used with success commercially.

Top-Cross Bantam is usually 3 to 7 days later than Golden Bantam, depending on the inbred crossed with the standard Bantam variety. The hybrid, Golden Bantam x P. 39, is resistant to Stewart’s disease.

**KINGSCROST**

 Kingscrost is a double cross golden hybrid obtained by crossing four different Golden Bantam inbreds. Its particular advantage over the Bantam variety is its uniformity of maturity. Because of this and its size it is being used to a limited extent for the canning of corn on the cob. The plants produce typical 8-row Golden Bantam ears, although they mature a couple of days earlier than ordinary Bantam. Kingscrost is somewhat resistant to Stewart’s disease.

**IOGENT 12.45**

 This single cross Country Gentleman hybrid, introduced by the Vegetable Crops Subsection of the Iowa Agricultural Experiment Station, is known as Iogent 12.45. Because of its uniformity of size and maturity it is far superior to open-pollinated strains of Country Gentleman. In smut resistance, too, it is superior. This hybrid has thus far outyielded open-pollinated strains about 35 percent.

**IOWA TOP-CROSS COUNTRY GENTLEMAN**

 Although not equal to the Iogent 12.45, Iowa Top-Cross is superior to ordinary open-pollinated Country Gentleman. It gives increased yields, uniformity and is resistant to smut. This hybrid is produced by crossing open-pollinated Country Gentleman with inbred Iowa 1445.

**IOGOLD 16.40**

 This golden hybrid is produced by crossing the Vegetable Crops Subsection inbreds 16 and 40. It is a Bantam Evergreen type of corn, the ears having 16 rows of kernels which are narrower and deeper than Golden Bantam kernels. It is very
sweet, but not an early corn. It is 10 days later than Golden Bantam, or about the same season as Golden Cross Bantam.

LESSER KNOWN VARIETIES OF SWEET CORN

SPANISH GOLD

Spanish Gold is a new, very early, golden variety introduced by the Connecticut Agricultural Experiment Station. Its chief advantage is earliness. It does not compare with Golden Bantam in flavor, sweetness or tenderness. However, its yields are equal to, or better than, Golden Bantam. Spanish Gold ears are about 6 inches long and bear 8 to 12 rows of kernels.

SUNSHINE

A variety originated at the North Dakota Agricultural College called Sunshine, and frequently listed by seedsmen as Golden Sunshine, is superior in quality to most golden varieties. It usually has 12 rows of kernels. Sunshine is highly susceptible to smut and Stewart’s disease, and because of the high percentage of smutty ears it frequently yields less than Golden Bantam at Ames. In central Iowa it is about 3 days earlier than Golden Bantam.

PURDUE BANTAM

Purdue Bantam is in reality the golden inbred Purdue 1339 (or P. 39 as it is sometimes called) which has been used in making so many hybrids. When it proved to yield as much or more than ordinary Golden Bantam it was released by the Indiana Agricultural Experiment Station to be used as a variety. The kernel is somewhat narrower and deeper than the Bantam kernel, the ear carries 12 rows of kernels, and the quality is equal to that of Bantam. At Ames it ripens 7 to 10 days later than Golden Bantam.

IOGREEN 91.48

This is a single cross Narrow-grain Evergreen hybrid produced by crossing the inbreds 191 and 1248, originated by the Vegetable Crops Subsection of the Iowa Agricultural Experiment Station. It has a very deep, narrow kernel, a medium length ear bearing 20 to 22 rows. At Ames it is about a week earlier than open-pollinated strains of Narrow-grain or Stowell’s Evergreen.
In table 5 the yields of four Iowa sweet corn hybrids are compared with corresponding open-pollinated strains. The yields are the average of 20 hills of 60 plants replicated 10 times in the field each season. In 1934 and 1936 the drought and heat caused poorly filled ears, so no yield records were taken. Several open-pollinated strains of each variety were included in the field tests, but comparisons with only the best open-pollinated strains are given.

**TABLE 5. YIELDS OF FOUR IOWA SWEET CORN HYBRIDS COMPARED WITH THE CORRESPONDING VARIETY**

<table>
<thead>
<tr>
<th>Variety</th>
<th>1932 Mean weight in lbs.</th>
<th>Percent increase over variety</th>
<th>1933 Mean weight in lbs.</th>
<th>Percent increase over variety</th>
<th>1934 Mean weight in lbs.</th>
<th>Percent increase over variety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iogent 12.45</td>
<td>23.0</td>
<td>34</td>
<td>25.1</td>
<td>39</td>
<td>25.5</td>
<td>32</td>
</tr>
<tr>
<td>Open-pollinated Country Gentleman</td>
<td>19.8</td>
<td>15</td>
<td>19.3</td>
<td>25</td>
<td>19.3</td>
<td>17</td>
</tr>
<tr>
<td>Country Gentleman top-cross</td>
<td>23.9</td>
<td>51</td>
<td>28.7</td>
<td>38</td>
<td>24.1</td>
<td>40</td>
</tr>
<tr>
<td>Iogreen 91.48</td>
<td>15.8</td>
<td>15</td>
<td>20.7</td>
<td>38</td>
<td>17.1</td>
<td>40</td>
</tr>
<tr>
<td>Narrow Grain Evergreen</td>
<td>30.2</td>
<td>66</td>
<td>28.2</td>
<td>55</td>
<td>26.1</td>
<td>42</td>
</tr>
<tr>
<td>Bantam Evergreen</td>
<td>18.2</td>
<td>18</td>
<td>18.2</td>
<td>18</td>
<td>17.3</td>
<td>18</td>
</tr>
</tbody>
</table>

Differences of 14 percent in yield are significant.

**CUCUMBERS**

**SHAMROCK**

Shamrock is a mosaic-resistant variety bred by the Botany and Plant Pathology Section of the Iowa Agricultural Experiment Station. The fruits are moderately early, uniform and 6 to 8 inches long. This variety belongs to the white spine type and under Iowa conditions has proved productive. It shows a high degree of resistance to mosaic and will prove useful in many localities where the ravages of this disease have rendered cucumber production difficult. A tendency to throw white blossom ends is its chief fault, a characteristic which possibly may be remedied by further breeding.

**MUSKMELONS**

**HONEY ROCK OR SUGAR ROCK**

A recent introduction which has won a place on many of the
local markets is the Honey Rock. Fruits average around 4 pounds, are roundish and distinctly marked with a coarse netting. The rind is fairly thick and salmon tinted, but it is rather thin at the blossom end, which is the main objection to its use as a shipping melon. Quality of the flesh is good. Seeds become detached and rattle, which is objected to by some.

WEAVER SPECIAL OR IMPERIAL

Weaver Special or Imperial in fruit and foliage character classifies between the common netted muskmelons and a Honey Dew. Unlike a muskmelon, the Weaver Special ripens after picking and overripe specimens do not "leak." The rind is medium thick and of a light golden tint, bearing a light netting. Quality is good, but best quality is obtained 4 or 5 days after being picked. It does not "full-slip" and experience is necessary to determine when it is ripe.

This variety ripens well off the vine and ships well, but the melons have a tendency to split in rainy weather. In the southern half of Iowa it is worthy of a limited trial for the latter part of the season, and because of its keeping quality it may prolong the shipping season. Some stocks vary considerably in type from a smooth to a well-netted fruit.

In general the Honey Dew type of melons has not been successful in Iowa.

EARLY MAY

Early May is an early strain of Hale's Best and is very similar to the parent variety, except that the peak of the crop ripens a few days earlier and the fruits are perhaps more roundish. Fruit is of good quality.

PEARLY PINK

This is a midseason, oval shaped melon with a tough, dark green rind, slightly ribbed. It has deep orange flesh of excellent quality. This variety has done well on the trial plots at Ames and Muscatine for the past 3 years and gives promise of being a good shipper.

WATERMELONS

The introduction of wilt-resistant watermelons is one of the
newer developments in this class of vegetables. The use of gray colored varieties is gaining, due to the fact that they are less subject to sunscald than the dark green sorts. As regards shape, oblong varieties are gaining over the round sorts for shipping because they tier up better and roll less in transit. The consumer demand is favoring a medium sized or small melon to the large fruited varieties, as they are more convenient to store in home refrigerators.

**DIXIE QUEEN**

Dixie Queen is a round, gray melon with dark green stripes. The flesh is carmine, tender, sweet and juicy. The rind is fairly thin, but tough. This variety produces well under Iowa conditions and has been well received on both the local and commercial markets. The seeds are small and white. Dixie Queen is often confused with the parent variety, Cuban Queen, the seeds of which are black and much larger than those of Dixie Queen.

In general characters the Striped Klondike, Georgia Rattle Snake and Dixie Queen are very similar.

**STONE MOUNTAIN**

Stone Mountain or Dixie Bell is a dark green melon which has done well in central and southern Iowa on both the local and distant markets. These melons are roundish-oblong, range from 30 to 40 pounds in weight and ship well. The flesh is deep scarlet, tender and sweet. Seeds are white with black tips.

**IMPROVED KLECKLEY NO. 6**

This wilt-resistant strain of Kleckley Sweet was bred by the Botany and Plant Pathology Section of the Iowa Agricultural Experiment Station. Its fruit is of excellent quality, and the variety is especially recommended for growing on soils infected with watermelon wilt.

**SQUASHES**

**BUTTERCUP**

Buttercup, a variety developed by A. F. Yeager of the North Dakota Experiment Station, is a small squash (ranging from 3 to 5 pounds) of a dark green color with a smooth, tough skin.
and of the Turban type. The flesh is thick, orange colored, dry and sweet and of excellent quality. The seeds are clustered in a small “button” at the blossom end and are easily removed.

The chief difficulty in growing this variety, as with all of the true squashes, *Cucurbita maxima*, lies in the fact that they are much more susceptible to the attacks of the “squash bugs” than the varieties belonging to *C. pepo*.

**DELICATA**

The fruits are oblong, ridged and irregularly striped with orange and green. The shell is hard and the flesh is yellow and firm, with a suggestion of stringiness; the quality is good. The specimens are small, weighing from 2 to 3 pounds—a popular size on many markets. This variety is quite prolific under Iowa conditions. Botanically it is classed as a *Cucurbita pepo*, and is less subject to the ravages of “squash bugs” than the Hubbard and other varieties of that type.

Delicata is not a new variety in the seed trade but is little known in this state.

**POTATOES**

During the past 5 years there has been a renewed interest in the breeding of potatoes. The United States Department of Agriculture has led in this activity. For the past 5 years the Iowa Agricultural Experiment Station has cooperated with the federal department in a potato breeding project, which has for its purpose “the conducting of tests with seedling potatoes, with special reference to the selection of promising types adapted to growing in Iowa.”

Several thousand seedlings from true seed produced by the federal department have been grown each year at the Iowa Agricultural Experiment Station, from which hill unit selections have been made. In addition to these, the following described seedlings produced by the United States Department of Agriculture have been tested at Ames, together with one new variety, the Warba, from the Minnesota Agricultural Experiment Station.
KATAHDIN

Katahdin, introduced in 1932 by the United States Department of Agriculture, has vines which are unusually vigorous and which are capable of producing tubers under adverse climatic conditions to which many varieties succumb. This potato is round to short oblong and has a bright buff skin. Eyes are few, shallow, and bear lilac colored bud sprouts.

As grown in Iowa the season of the Katahdin is late, although the tubers begin to set rather early. In some seasons this variety has shown up very well in this state (particularly on the mineral soils), while in others, on muck, the tubers were immature at harvest time, resulting in poor quality potatoes. Late maturity is probably Katahdin's chief fault under Iowa conditions.

CHIPPEWA

Another recent introduction of the United States Department of Agriculture, Chippewa has shown up very well in Iowa, comparing favorably in yield and season to the Cobbler; and from limited experience, this variety gives promise of being a rival of the Cobbler. Chippewa tubers are roundish to oblong in shape; the eyes are shallow and few, with pale rose-purple bud sprouts; the skin is light buff, smooth and not so thick as in some varieties.

The stolons are not so compact as in some varieties. However, this characteristic does not appear to be a disadvantage in digging.

WARBA

Maturing 10 days to 2 weeks ahead of the Cobbler, the Warba appears promising as an early source of supply for the home garden and Iowa markets. This variety, a seedling cross of Minn. 4-16 with Bliss Triumph, introduced by the Minnesota Agricultural Experiment Station, has tubers which are short and blocky with rather deep pink eyes and white skin. Tubers form rather close around the main stem and set heavily. Under favorable conditions the yield is heavy, but under drouthy conditions the entire crop is likely to be seriously undersized.
GOLDEN

The Golden is a yellow fleshed potato introduced by the United States Department of Agriculture. As grown at Ames it produces well but is rather late maturing. The golden color of the flesh is probably a serious handicap to any widespread use of this variety.

RHUBARB

Rhubarb, known commonly as pie plant and sometimes as wine plant, is a native of Asia and eastern Europe, but it grows well over a wide territory of the United States. Linnaeus and Victoria are the two most common varieties grown, but investigations on Ruby and McDonald have revealed that in some respects they are improvements on the standard varieties.

RUBY

Ruby, a seedling of Victoria and developed by the Horticultural Division, Experimental Farm, Ottawa, Canada, has stalks that are deeper red in color than the old varieties, Linnaeus and Victoria. Internally and externally the stalks are red, and when cooked they produce a red sauce.

Flesh of the Ruby is tender, crisp, quite mild, of good flavor and requires less sugar to sweeten than that of the older varieties. Stalks are much smaller, however, than those of Victoria, and when larger stalks are more desirable than quality, the McDonald is preferable.

McDONALD

McDonald, another Canadian introduction, was developed by G. F. Chipman. It is a higher yielding variety than Ruby, but of somewhat lower quality. The highly colored stalks of fairly large size are very tender and succulent and produce a red sauce. The stalks are not so large as Victoria stalks, but are much larger than those of Linnaeus or Ruby.