GREEN PEAS

for

ILLINOIS MARKETS

By

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LARGE-PODDED, dark-green, wrinkled varieties of peas now dominate Illinois markets throughout the year. Contrary to general belief, wrinkled peas are hardier and can be planted fully as early as the small-podded, smooth-seeded varieties.

In limited tests conducted at the Illinois Station, four varieties of wrinkled peas gave an excellent succession of crops throughout the local pea season. These varieties were Little Marvel, Morse's Market (both shown above, actual size), Asgrow No. 40, and Midseason Giant—all large-podded peas except Little Marvel, which has a medium-sized pod.
Green Peas for Illinois Markets

By J. W. Lloyd, Chief in Olericulture and in Fruit and Vegetable Marketing

Fresh peas in the pod are now offered for sale in nearly all important cities of the United States throughout the entire year. More than 8,000 carloads were shipped to market by rail in 1936—an average of more than 150 cars a week. The heaviest shipments normally occur in May. In 1937 during the six weeks from the last week in April to the first week in June the weekly shipments averaged 377 carloads. They came principally from central and northern California, Mississippi, South Carolina, and North Carolina. Shipments from California continued through June and, as usual, were augmented by shipments from Oregon, Idaho, Washington and Colorado before the close of the month.

Consumers Prefer Large-Podded Wrinkled Type

Since June is the principal market month for Illinois peas, the western peas come in direct competition with the local product. But the western peas are not the ones which suffer from such competition, for they are the attractive, large-podded, dark-green type of wrinkled peas with high table quality. Under modern methods of refrigeration they are delivered to Illinois markets in prime condition. Consumers are accustomed to buying these high-quality peas at reasonable prices just before the local peas come on the market, and they can continue to buy them thru the local pea season.

However, even tho consumers have shown a marked preference for large-podded peas, many Illinois growers still produce the small-podded, smooth-seeded early type which once brought a premium because of its earliness. But there is no premium now because people have been freely using better peas for several weeks before the earliest local peas are available.

With the large-podded peas so thoroughly entrenched in consumer favor, Illinois growers will be obliged to offer this type if they are to meet successfully the competition of western peas.

Tests Show Wrinkled Peas Are Hardier

Illinois growers have depended largely upon smooth-seeded varieties of peas, like Alaska, for their earliest plantings. That such peas are not of as high quality as the wrinkled sorts was generally admitted,
but there has been a deep-seated belief among both seedsmen and vegetable growers that the smooth-seeded type was much hardier and could stand much earlier planting than the wrinkled type. Seed of the wrinkled varieties, it was commonly thought, was likely to rot in the ground without germinating if the weather should be cold and wet just after planting, but seed of the smooth varieties it was believed would survive such conditions. Plants of the wrinkled-seeded sorts were also thought to be more susceptible to frost injury than the smooth-seeded sorts, and hence more likely to be killed if planted early.

That the above beliefs are erroneous, and that wrinkled peas may safely be planted as early as smooth-seeded ones has been clearly shown by some recent tests. Peas planted in enamel pans containing saturated sand were exposed to a temperature of 35° F. for two, three, and four weeks; after which they were germinated in a greenhouse. Germination of the wrinkled peas was not diminished by these treatments, while the germination of the smooth peas was considerably reduced. Furthermore there were many more weak plants among the seedlings of the smooth variety subjected to the longer exposure than among seedlings of the wrinkled variety. These results show that cold wet weather following planting is more likely to have an unfavorable effect upon smooth-seeded peas than upon the wrinkled type.

The relative resistance of pea seedlings of different types to injury by freezing was tested by exposing seedlings about two weeks old to a temperature of 24° F. for 4½ hours. The smooth-seeded variety was very badly injured, whereas the wrinkled variety suffered only slight damage, indicating that seedlings of the wrinkled type are less subject to frost injury than are those of the smooth-seeded type.

EARLY PLANTING GIVES BEST RESULTS

Following the above laboratory findings, early plantings of wrinkled peas have been made each year for four years at the Illinois Station at Urbana. The planting dates were April 4, 1934; March 22, 1935; March 30, 1936; April 2, 1937. Excellent stands of plants were secured from each of these plantings, and there was no frost damage to the growing crops.

The old practice of delaying the planting of wrinkled peas until the weather becomes somewhat warm and settled should be abandoned

\[^{1}\text{WILMETH, C. E. Effects of unfavorable environmental conditions upon different types of } Pisum sativum. Unpublished thesis, University of Illinois, 1933.}\]
\[^{2}\text{The varieties used in these tests were Perfection and Alaska.}\]
for both late and early varieties. In fact, it is especially important to plant the late varieties early so that they will have time to complete their growth before the arrival of excessively hot weather. Better results will be obtained by planting at the same time three or four varieties with different degrees of earliness than by making successive plantings of one variety or by delaying the planting of the later sorts.

Since peas are a cool-season crop, all varieties should be given the full benefit of an early start while the weather is cool.

**VARIETIES RECOMMENDED FOR ILLINOIS**

Many varieties of wrinkled peas are available to Illinois planters. Most of the small-podded sorts should be ignored by market growers, for even tho of good quality they are tedious to pick and, as stated before, the market demand, with few exceptions, is for the large-podded sorts.¹

Varieties with undesirable height of vine should also be avoided. For home gardens some of the tall sorts requiring support may be grown to advantage, but for market gardens selections should be restricted to varieties which are sufficiently dwarf to require no support. Varieties which normally grow only 18 to 24 inches tall are particularly desirable, tho sorts 30 inches tall may be grown advantageously if sufficient space is allowed between the rows. Kinds that normally grow more than 30 inches tall are not conveniently handled without support, and are therefore ill adapted to commercial culture under Illinois conditions.

In order to find varieties that would afford a succession of high-quality peas for Illinois markets, several tests have been made in the Station gardens at Urbana. Only those peas described as having large pods of dark-green color and as being of high quality were given consideration, with the exception of Little Marvel, which had been grown for a number of years and with which the larger-podded varieties were compared in yield and time of maturity. An effort was made to include varieties to cover the season from early to late. The planting dates were March 22, 1935; March 30, 1936; April 2, 1937. Not all the varieties were grown every year. Except where noted, the data in the accompanying table represent averages for the times grown rather than the performance for a given year.

Of the varieties tested, four are recommended as capable of giving a succession of high-quality peas under central Illinois conditions.

¹The chief exception is the Little Marvel, which has a medium-sized pod.
### Performance of Varieties of Wrinkled Peas at Urbana
(Varying numbers of tests, 1935-1937)

<table>
<thead>
<tr>
<th>Variety</th>
<th>Days to first picking</th>
<th>Height of vine</th>
<th>Length of pod</th>
<th>Peas per pod</th>
<th>Yield per 100-foot row</th>
</tr>
</thead>
<tbody>
<tr>
<td>Little Marvel</td>
<td>70</td>
<td>18</td>
<td>3 -3½</td>
<td>6-8</td>
<td>26</td>
</tr>
<tr>
<td>World’s Record</td>
<td>72</td>
<td>24</td>
<td>3½-4</td>
<td>7-8</td>
<td>11</td>
</tr>
<tr>
<td>Laxton’s Progress</td>
<td>74</td>
<td>18</td>
<td>3 -4</td>
<td>6-8</td>
<td>20</td>
</tr>
<tr>
<td>Blue Bantam</td>
<td>74</td>
<td>18</td>
<td>4 -4½</td>
<td>7-8</td>
<td>17¾</td>
</tr>
<tr>
<td>Morse’s Market</td>
<td>77</td>
<td>24</td>
<td>4 -4½</td>
<td>6-8</td>
<td>28½</td>
</tr>
<tr>
<td>Asgrow No. 40</td>
<td>82</td>
<td>30</td>
<td>4 -5</td>
<td>8-10</td>
<td>21½</td>
</tr>
<tr>
<td>Wyoming Wonder</td>
<td>86</td>
<td>30</td>
<td>4 -5</td>
<td>8-10</td>
<td>18½</td>
</tr>
<tr>
<td>Giant Stride</td>
<td>86</td>
<td>30</td>
<td>4½-5</td>
<td>8-10</td>
<td>17½</td>
</tr>
<tr>
<td>Roger’s Gilbo</td>
<td>88</td>
<td>30</td>
<td>4 -5</td>
<td>8-10</td>
<td>11½</td>
</tr>
<tr>
<td>Midseason Giant</td>
<td>90</td>
<td>30</td>
<td>4½-5</td>
<td>8-10</td>
<td>15½</td>
</tr>
</tbody>
</table>

*Well-developed specimens. 1Only one season’s record. βOnly one season’s record, and includes only first picking.

These are Little Marvel, Morse’s Market, Asgrow No. 40, and Midseason Giant, which mature in the order named. The same varieties would undoubtedly be equally well adapted to the northern part of the state.

### TIME, METHOD, AND DISTANCE OF PLANTING

In order that peas may get a good start while the weather is cool, they should be planted as early in spring as the ground reaches good workable condition. In central Illinois this will normally be during the last week in March or the first few days in April.

Market-garden peas are usually planted with a one-row garden seed drill, tho large areas may be planted with a field grain drill by stopping up part of the holes to allow the proper space between rows.

A good rule to follow when planting market-garden peas is to allow 6 inches more space between the rows than the height of the vine of the given variety. Thus a variety with 18-inch vines should be planted in rows at least 24 inches apart; a 24-inch variety at least 30 inches apart; and a 30-inch variety 36 inches apart. For convenience in cultivation the 18-inch varieties are sometimes planted 30 inches apart. When planting with a single-row garden drill, it is necessary either to use

*Altho the pods of Little Marvel are smaller than those of the other varieties listed, they are exceedingly well filled with peas of high table quality. Consequently this variety is in demand on many markets in spite of its smaller size.
a longer marker than comes with the machine, or to mark out the field
with a garden marker in advance of the drill.

The usual rate of seeding is 8 to 10 seeds to the foot. This means
2½ to 3½ bushels an acre, depending upon size of seed and distance
between rows.

**RICH SOIL, THORO CULTIVATION NEEDED**

To produce good crops of peas the soil must be rich. In fertilizer
experiments carried on at Urbana thru a period of six years, the yield
of peas was practically doubled by applications of phosphorus and
potassium in addition to manure.¹ These experiments were on dark­
colored upland soil that was considered to be in a fair state of fertility
before treatment. The quantities of fertilizer used to the acre were:
manure, 10 tons; steamed bone meal, 500 pounds; potassium sulfate,
200 pounds.

Many growers of cannery peas have found it advantageous to
inoculate the seed before planting. Similar results could doubtless be
obtained from the inoculation of seed for the market-garden crop.

Altho peas for canning are drilled in rows close together and given
no cultivation, better results with market-garden peas are secured by
planting in rows far enough apart to allow thoro cultivation as long
as the plants stand erect, and to permit picking without serious damage
to the vines.

Tillage tools adapted to the cultivation of other row crops can
readily be used for cultivating the peas.

**HARVEST AT RIGHT STAGE OF MATURITY**

Some varieties of peas in some seasons mature quite uniformly,
allowing the bulk of the crop to be harvested at a single picking with­
out there being too wide a range of maturity in the different pods. In
a normal season, however, it is usually impossible to harvest the large­
podded varieties at one picking; and attempts to do so generally result
in reduced yields and a product that is unsatisfactory because of
overmaturity of some pods and undermaturity of others. Usually two
and sometimes three pickings are needed to harvest the crop at the
right stage to satisfy the better class of trade and bring ready sales.

When making each picking except the last, care should be taken to
avoid injuring the vines. Much less damage will occur if the rows have
been planted sufficiently far apart to avoid bad tangling of the vines
in adjacent rows.

KEEP PEAS COOL AND MARKET PROMPTLY

Peas deteriorate rapidly after they are picked, unless they are kept cool. They should therefore be put in a shady place as soon as they are taken from the vines, and should be kept as cool as possible at all times. If they are to be held a few hours before being sent to market, and the volume is not large, a good way to prevent them from heating is to spread them in a thin layer on the cement floor of a cool basement.

Only thorough refrigeration makes it possible for peas from distant regions to invade Illinois markets during the normal season for the home-grown product. Illinois growers are close enough to their markets so that they are not dependent on refrigeration. They have the advantage of being able to put their product on the local markets in prime condition merely by prompt and proper handling.

TO COMPETE SUCCESSFULLY with producers who ship high-quality peas to Illinois during the local pea season, Illinois market gardeners must (1) grow the large-podded, wrinkled varieties of peas which consumers prefer, and (2) market these peas with their freshness unimpaired.