SIZING SEED POTATOES FOR PLANTING WHOLE

JOHN BUSHNELL

Agricultural Experiment Station, Wooster, Ohio

During hot, dry, windy weather it is practically impossible, in Ohio, to obtain good stands of potatoes from freshly cut seed. This is partly due to deterioration of the seed in warm storage prior to planting, but more frequently it results from exposure of the freshly cut surfaces to the sun and wind during planting.

The simplest method of solving this difficulty is by the use of small, whole seed. Because the weather of late May and early June has been peculiarly severe in Ohio the past three seasons, and cut seed has so frequently failed to give good stands, the demand for small, whole potatoes has been rapidly increasing. Experience has shown that the small tubers from certified fields are satisfactorily free from disease and do not produce an excessive number of plants per hill. A few years ago small seed sold at a discount, but the price has been rising in Ohio until it is now practically the same as that of the regular certified grade. The fact that whole seed insures good stands and saves the labor of cutting, may, in the future, raise the price above that of the No. 1 grade.

The chief objection to planting the present grade of small seed is that the tubers average somewhat too large; it takes about 27 bushels of seed per acre (planted 32 by 12 inches), whereas with cut seed 20 to 22 bushels are sufficient. Opinion varies somewhat as to the proper size of seed, whether whole or cut, but the consensus tends toward an ounce as being an economical size. An ideal size for planting whole, then, would include the tubers ranging from 1 to 2 ounces. All tubers over 2 ounces could be economically cut. The actual weight of the tubers of the present small grade ranges from 1.2 to 2.4 ounces in Rurals and Cobblers. Thus the grade includes some tubers that should be cut, and fails to include some small tubers that would be suitable for planting whole.

A TEST OF VARIOUS SIZED GRADER BELTS

To determine in a practical way what screens might be used to obtain seed potatoes ranging from one to two ounces, some standard grading belts were purchased and others borrowed from the Boggs Manufacturing Company. Small tubers of both Cobblers and Russet Rurals, about three bushels of each, were screened through these sizing belts. Three hundred tubers were taken as
a sample from each size, and the 30 largest and the 30 smallest were weighed. This procedure gave an average weight of the largest 10 per cent which passed through each screen and the smallest 10 per cent retained. The data are given in terms of grams and also in approximate ounces in table 1.

Table 1. Results of sizing small potatoes with a Boggs Grader

<table>
<thead>
<tr>
<th>Openings in Grader Belt Inches</th>
<th>Irish Cobbler</th>
<th>Russet Rurus</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Small Tubers Retained Grams Oz.</td>
<td>Large Tubers Passed Grams Oz.</td>
</tr>
<tr>
<td></td>
<td>1%</td>
<td>1 3/4</td>
</tr>
<tr>
<td>1%</td>
<td>64</td>
<td>53</td>
</tr>
</tbody>
</table>

The 1\% inch belt retained most of the tubers weighing over an ounce, while the 1 3/4 inch retained most of those weighing two ounces. These two screens, then, would separate a grade which could be economically planted whole. It will be noted that they are just 1/8 inch smaller than the belts now commonly used.

Practical Sizes for the Small Grade

As long as seed potatoes continue to be graded according to table stock standards the 1\% inch screen will continue to be used for screening out the small size of round varieties. It is obviously impractical for the producer or dealer to regrade over a 1 3/4 inch screen, because there is not likely to be sufficient premium to cover the expense of handling two small grades. Until special seed grades are adopted the small grade will continue to have a 1\% inch maximum, and the responsibility of regrading will devolve upon the purchaser.

On the other hand, there is no economic reason why the minimum size of the small grade cannot be reduced from 1 1/2 to 1\% or even 1 1/4 inches. Although, from the data given here, the 1\% inch screen would separate tubers at about the ounce size, actual experience with whole