Table 1—Range and average inbred seed production per plant for each of five families of tall rescue.

<table>
<thead>
<tr>
<th>Family</th>
<th>Number of plants</th>
<th>Range</th>
<th>Seed production (grams) Total</th>
<th>Average/plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>53-5</td>
<td>20</td>
<td>1-11</td>
<td>150</td>
<td>5.00</td>
</tr>
<tr>
<td>45-50</td>
<td>20</td>
<td>1-10</td>
<td>111</td>
<td>5.50</td>
</tr>
<tr>
<td>19-22</td>
<td>12</td>
<td>1-6</td>
<td>54</td>
<td>2.83</td>
</tr>
<tr>
<td>6-54</td>
<td>35</td>
<td>1-7</td>
<td>99</td>
<td>2.84</td>
</tr>
<tr>
<td>Syn. 1</td>
<td>30</td>
<td>1-12</td>
<td>122</td>
<td>4.05</td>
</tr>
</tbody>
</table>

The advantages of this selfing technique are (1) comparatively large numbers of plants can be inbred with a relatively small labor supply and (2) sufficient seed are obtained to produce enough plants to establish replicated progeny tests with several plants per replicate.—ROBERT C. BUCKNER, Research Agronomist, Crops Research Division, ARS, USDA, and Associate Agronomist, Kentucky Agr. Exp. Sta., Lexington.

THE EFFECT OF GIBREL AND GIBBERELLIC ACID (K SALT) IN EMBRYO CULTURE MEDIA FOR Hordeum vulgare

A DISEASE known as spot blotch has become a serious production hazard of cultivated barley and attempts are underway to transfer the spot blotch resistance found in the wild Hordeum species to common barley (H. vulgare) by means of interspecific hybridization. Hybrid embryos from crosses of wild species with common barley generally do not develop to maturity on the female plant. Therefore, the young hybrid embryos are cultured artifically on nutrient agar media. Gibberellins have been known for many years to affect plant growth. Preliminary trials indicated that an addition of small quantities of gibberellin to a standard culture medium stimulated embryo growth and enhanced embryo survival.

The purpose of this study was to compare the effects of Gibrel, a commercial preparation containing gibberellic acid in oil emulsion, with the effects of gibberellic acid (K salt) when added to the culture media. The concentration of Gibrel was calculated on the percentage of potassium gibberellate in the emulsion.

The basic nutrient agar medium used in this study was similar to that reported by Randolph and Cox. The basic medium was modified by addition of Gibrel and gibberellic acid in the various treatments as follows: (1) no addition, (2) one, two, and three micrograms of Gibrel per ml, and (3) one, two, and three micrograms of gibberellic acid (K salt) per ml.

Six embryos of the variety Truill were cultured per treatment: One embryo per treatment was excised from a central spikelet located on the central portion of the rachis from each of 7 spikes of equal maturity. Each embryo was transferred to a 2-ounce bottle containing the agar medium and grown in a germinator at 70°F for 7 days. The length of the shoot and the longest root were measured at the end of this period. These measurements are summarized in table 1.

Significant differences among treatment means were found with respect to shoot and root growth, and Duncan’s multiple range test was applied to the data. Shoot growth was stimulated by addition of either Gibrel or gibberellic acid to the media. The amount of stimulation was greatest in the medium containing one microgram of Gibrel per ml. with less stimulation in media containing higher concentrations of Gibrel. Mean shoot growth was relatively constant in media containing different concentrations of gibberellic acid.

With respect to root growth, the lowest concentration of Gibrel stimulated growth, whereas the highest concentration significantly inhibited growth. In comparison with the control, root growth in media containing gibberellic acid was significantly increased. Also the stimulative effect of gibberellic acid on root growth was about the same as that of one microgram of Gibrel per ml.

The most shoot and root growth of all treatments was produced in the media containing one microgram of Gibrel per milliliter. Higher concentrations of Gibrel tended to inhibit growth. All treatments with gibberellic acid (K salt) produced a slight increase of growth over the control.—A. B. SCHOOLE, Assistant Agronomist, Department of Agronomy, North Dakota Agr. College, Fargo.

LACK OF CORRELATION BETWEEN THE AMYLOSE CONTENT OF POLLEN AND ENDOSPERM IN MAIZE

SEVERAL workers interested in the development of high-amylose corn have suggested that the amylese content of the pollen be investigated. A correlation between pollen and endosperm amylese contents would offer obvious possibilities for practical use in an amylese breeding program. If a rapid pollen analysis could be developed, the desired plants could be identified prior to selfing or crossing. This technique could bring about greater efficiency in any of the various breeding systems that might be employed.

In 1958, 7 cultures of corn ranging in amylese content of endosperm starch from 0 to 75% were planted in 2 replications of 13 plants each. Each plant was selfed, and the surplus pollen was collected and bulked for each culture and replication, making a total of 14 samples of pollen. As soon as the pollen was collected it was frozen with dry ice and stored at 0°F until analyzed. Mature

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