Registration of Germplasms

REGISTRATION OF GIPR
ACID SOIL TOLERANT
SORGHUM GERMPLASM POPULATION1
(Reg. No. GP73)
R. R. Duncan*

The Sorghum bicolor (L.) Moench population, GIPR, was developed by the Georgia Agric. Exp. Stn. and released in March, 1981. The population provides a high level of tolerance to acid soil conditions and should be useful in domestic and international breeding programs with low pH soil problems.

GIPR was developed using the lines listed in Table 1. These lines were released from the sorghum conversion program (4) nursery of the Texas Agric. Exp. Stn. and AR-SEA-USDA. These six stocks were crossed with the genetically diverse twin-seed population, TP11R (1), which was segregating for 'Coen' genetic male sterility, ms. The GIPR population was developed using the scheme proposed by Scheuring and Miller (2). The acid tolerant lines were initially crossed as males onto male-sterile panicles of TP11R during the summer of 1977. Selected fertile niners from TP11R were crossed as males onto emasculated heads of the stock lines. In addition, diallel crosses among the lines were made utilizing the plastic bag emasculation technique (3). Equal quantities of hybrid seed were harvested and bulked. The F1 seed was grown in a winter sorghum nursery (pH 5.5) in Belize, Central America, harvested without selection, and bulked. The F1 seed was planted during 1978 under isolation at Blairsville, GA [pH 4.7 to 5.0: Dyke clay loam (Clayey, mixed, mesic Typic Rhodudults)] where male-sterile plants underwent random mating. The hybrid seed was harvested and again planted in Belize. The F1 seed was harvested without selection and bulked.

Table 1. Acid soil tolerant sorghum lines.

<table>
<thead>
<tr>
<th>SC no.</th>
<th>IS no.</th>
<th>Origin</th>
<th>Group no/name</th>
</tr>
</thead>
<tbody>
<tr>
<td>0283</td>
<td>7173C</td>
<td>Tanzania</td>
<td>3:Conspicuum</td>
</tr>
<tr>
<td>0048</td>
<td>13454C</td>
<td>Sudan</td>
<td>39:1:Zeraria</td>
</tr>
<tr>
<td>0112</td>
<td>12912C</td>
<td>Ethiopia</td>
<td>39:1:Zeresa</td>
</tr>
<tr>
<td>0222</td>
<td>1309C</td>
<td>Tanzania</td>
<td>29:Nigricans</td>
</tr>
<tr>
<td>0418</td>
<td>1335C</td>
<td>Tanzania</td>
<td>35:Caustatum-Kafir</td>
</tr>
<tr>
<td>0176</td>
<td>13966C</td>
<td>Ethiopia</td>
<td>39:1:Zeranza</td>
</tr>
</tbody>
</table>

Two additional cycles of random intercrossing with females harvested and with the unelected F1 generations bulked were accomplished in 1979 and 1980. The F2 bulked seed from the third cycle of population intercrossing was released as the source breeding population. The population was developed on soils in Georgia that are high in available Al and Mn and low in available Ca and Mg under pH conditions <5.0.

GIPR should provide useful genetic variability since it contains a wide range of heights (2-), seed colors, panicle types, and a moderately wide range of maturities. In addition, the population contains low levels of disease resistance [primarily to anthracnose incited by Colletotrichum graminicola (Ces.) G. W. Wils.] and increased lodging resistance.

Seed for distribution is maintained by the Dep. of Agronomy, Georgia Stn., Experiment, GA 30212.

REFERENCES

Registration of Parental Lines

REGISTRATION OF SUGARBEET PARENTAL LINES SP 6926-0 AND SP 6926-011
(Reg. No. PL15 and PL16)
Gerald E. Coe*

The parental sugarbeet (Beta vulgaris L.) lines, SP 6926-0 and SP 6926-01, were developed by AR-SEA-USDA in cooperation with the Beet Sugar Development Foundation and the Farmers and Manufacturers Beet Sugar Association and were made available to industry sugarbeet breeders in 1964.

SP 6926-0 (Reg. No. PL15) is a self-fertile monogerm maintainer line with moderate resistance to leaf spot caused by Cercoaspore beticola Sacc. and to black root caused by Aphanomyces cochlioides Drechs. It is the second seed increase of a pool of nine selected progeny of a plant selected from SP 6088-4. Inbreeding is evidenced by a reduction in root size and foliar bouquet. There is, however, a lack of uniformity in size of foliar bouquet. The width of the laminae also varies, ranging from the average of SP 6822-0 in about one-third the plants to noticeably wider in most plants. It is used as the maintainer line of its cytoplasmic male-sterile companion line SP 6926-01.

SP 6926-01 (Reg. No. PL16) is a cytoplasmic male-sterile line developed by crossing the progenitor of SP 6926-0 to the...

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