NEW F1 HYBRID TOMATO VARIETIES SE0913 AND SE0919

Pham Xuan Tung, Le Thi Thu Hang, Nguyen Thi Hai and Tran Xuan Loc

With the breeding target of tomato varieties for high yield potential, good quality and bacterial wilt (BW) tolerance, the Potato, Vegetable & Flower Research Center (PVFC), Institute of Agricultural Sciences for Southern Viet Nam (IAS), had developed two new F1 hybrid varieties, namely, SE0913 and SE0919.

The results from evaluation experiments indicated that these two varieties have high yield potential of 70-80 tons/ha under field conditions (Tables 1 and 2). With semi-determinate (SE0913) and determinate (SE0919) growth habits, the varieties characterized by short duration of 95-100 (harvest completed) days compared to 120-130 days of Anna or Diamond variety which were indeterminate. In terms of quality attributes, the SE0913 and SE0919 have globe fruit shape of the size 140-170 g with higher solid and flesh contents than Anna, which probably give the fruits better taste for fresh consumption and high efficiency in tomato paste and juice preparation. Very good firmness of fruits gives these varieties a shelf-life of 23-24 days, which is 2-3 days longer than that of variety Anna under normal laboratory condition in Da Lat.

Good BW tolerance is an important advantage of these new varieties compared to other commercial one currently planted. In field experiments, without grafting on BW tolerant root stocks, the SE0913 and SE0919 seedlings could grow normally until harvest with no wilt symptoms observed while Anna got gradually 100% wilted plants. This important advantage was well realized by the farmers participating in the evaluation and test production fields (Table 2). High level of BW tolerance may help reducing the seedling cost on the use of tolerant root stocks for grafting. Coupling with the low cost of local variety seed production, it would be a highly significant contribution of these new varieties for tomato growers.

With superior agronomy and quality characteristics exhibited, the tomato varieties SE0913 and SE0919 have been regionally approved by Scientific Council of the Ministry of Agriculture & Rural Development in 2011 for large scale test production.
Table 1. Test production results of five tomato varieties in Tu Tra, Don Dzuong, Lam Dong, *(Autumn-Winter season 2010, seedlings were not grafted on BW tolerant root stocks)*

<table>
<thead>
<tr>
<th>Variety</th>
<th>Growth 60 DAP (1-9)</th>
<th>Plants with BW symptoms 60 DAP (%)</th>
<th>Vegetation period (days)</th>
<th>Fruit yield (tons/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SE0913</td>
<td>9.0</td>
<td>0.0</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>SE0918</td>
<td>9.0</td>
<td>0.0</td>
<td>105</td>
</tr>
<tr>
<td>3</td>
<td>SE0919</td>
<td>9.0</td>
<td>0.0</td>
<td>95</td>
</tr>
<tr>
<td>4</td>
<td>SE0927</td>
<td>9.0</td>
<td>15.7</td>
<td>110</td>
</tr>
<tr>
<td>5</td>
<td>Anna</td>
<td>9.0</td>
<td>100</td>
<td>120</td>
</tr>
</tbody>
</table>

CV (%)  
LSD 0.05  
9.64

Note DAP = days after planting

Table 2. Test production results of five tomato varieties in K’Nai, Đuc Trong, Lam Dong, *(Autumn-Winter season 2010, Seedlings were not grafted on BW tolerant root stocks)*

<table>
<thead>
<tr>
<th>Variety</th>
<th>Growth 60 DAP (1-9)</th>
<th>Plants with BW symptoms 60 DAP (%)</th>
<th>Vegetation period (days)</th>
<th>Fruit yield (tons/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SE0913</td>
<td>8.3</td>
<td>0</td>
<td>95</td>
</tr>
<tr>
<td>2</td>
<td>SE0918</td>
<td>8.7</td>
<td>0</td>
<td>105</td>
</tr>
<tr>
<td>3</td>
<td>SE0919</td>
<td>8.7</td>
<td>0</td>
<td>90</td>
</tr>
<tr>
<td>4</td>
<td>SE0927</td>
<td>8.7</td>
<td>0</td>
<td>105</td>
</tr>
<tr>
<td>5</td>
<td>Anna</td>
<td>8.7</td>
<td>35.7</td>
<td>120</td>
</tr>
</tbody>
</table>

CV (%)  
LSD 0.05  
9.83

Note DAP = days after planting
<table>
<thead>
<tr>
<th>Attributes</th>
<th>SE0913</th>
<th>SE0919</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Growth habit</td>
<td>Semi-determinate</td>
<td>Determinate</td>
</tr>
<tr>
<td>2 Vegetation period (days)</td>
<td>95-105</td>
<td>95-100</td>
</tr>
<tr>
<td>3 Fruit shape and color</td>
<td>Globe, red</td>
<td>Globe, red</td>
</tr>
<tr>
<td>4 Fruit size</td>
<td>Large, 140-160 g</td>
<td>Large, 150-170 g</td>
</tr>
<tr>
<td>5 Flesh (%)</td>
<td>84.36</td>
<td>85.91</td>
</tr>
<tr>
<td>6 Firmness</td>
<td>Very firm</td>
<td>Very firm</td>
</tr>
<tr>
<td>7 Taste</td>
<td>Delicious, floury, less sourness</td>
<td>Delicious, floury, less sourness</td>
</tr>
<tr>
<td>8 Shelf life (days)</td>
<td>23-24</td>
<td>23-24</td>
</tr>
<tr>
<td>9 Resistance</td>
<td>Bacterial wilt</td>
<td>Bacterial wilt</td>
</tr>
<tr>
<td>10 Yield potential (tons/ha)</td>
<td>70-80</td>
<td>80-100</td>
</tr>
</tbody>
</table>