First okra-leaf cotton cultivar bred and released in Argentina

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ABSTRACT

In the 1997/98 cotton season Argentina reached 1,150,000 planted hectares, but its average planted area is around 600,000 to 700,000 ha. Today more than 80% of the cotton crop area is planted with INTA’s cultivars, which has a breeding program since the 1960s. “Guazuncho 2 INTA” is the most grown cultivar. It is short-season, has high yields and high gin turn-out, with medium fiber qualities, accepted by the national and international textile industry. INTA has released during the 2000/2001 season its new okra-leaf cultivar named “OROBLANCO INTA”. It was bred from the original cross between the Australian cultivar “Siokra” and the breeder’s line “SP 2473-A”. The later had its origin in a cross of “Guazuncho INTA” and the breeder’s line “SP 8535”. “OROBLANCO” was bred through evaluation and selection according to the Pedigree method. Plants are medium-height, pubescent, with open canopy and medium-sized okra-type leaves. Bolls are round-shaped with 4 to 5 locules, medium-sized and with good opening. Pollen is creamy (light yellow) colored and internode length is short to medium. It is well adapted to both irrigation and rain-fed conditions, getting its best yield in highly fertile soils. It has a short cycle (125 - 130 days), 10% shorter than “Guazuncho 2 INTA”, with good capacity for continuing growth after a water deficit. It is immune to “bacterial blight” (Xanthomonas malvacearum), immune to “blue disease”, tolerant to “marchitamiento rojizo” (red wilt) and susceptible to “Fusarium wilt”. Its fiber properties compared to “Guazuncho 2 INTA” are similar for fiber length, higher for fiber strength (+ 1 g/tex) and lower for micronaire (- 0.2). Its main advantage, over other commercially grown cultivars in Argentina, is its okra-leaf characteristic, which allows for better air circulation, decreasing the percentage of boll rot under irrigation or in highly fertile soils. It also allows for increased pest control, given that sprayings are more effective with the decreased leaf area.

Results and Discussion

Plants are medium-height, pubescent, with open canopia and medium-sized okra-type leaves. Bolls are round-shaped with four to five locules, are medium-sized and with good opening. Pollen is creamy (light yellow) coloured and internode length is short to medium. It is well adapted to both irrigation and rain-fed conditions, getting its best yield in highly fertile soils. It has a short cycle (125 - 130 days), 10% shorter than “Guazuncho 2 INTA”, with good capacity for continuing growth after a water deficit. It is immune to “bacterial blight” (Xanthomonas campestris pv. malvacearum race 18), resistant to “blue disease”, tolerant to “marchitamiento rojizo” (red wilt) and susceptible to “Fusarium wilt”. Its fiber properties compared to “Guazuncho 2 INTA” are similar for fiber length, higher for fiber strength (+ 1 g/tex) and lower for micronaire (- 0.2). Data are shown on Table 1, and a schematic representation of Oroblanco’s pedigree is shown in Figure 1.
Its main advantage, over other commercially grown cultivars in Argentina, is its okra-leaf characteristic which allows for better air circulation, decreasing the percentage of boll rot under irrigation or in highly fertile soils. It also allows for increased pest control, given that sprayings are more effective with the decreased leaf area.

**Conclusions**

Throughout its history, INTA’s cotton breeding program has developed new cultivars with normal leaf shape. This is the first cultivar released in Argentina with the okra-leaf phenotype. The main objective for the incorporation of the trait was to lower boll rots in crops grown in highly fertile soils, a widespread phenomenon in the Argentinian cotton region due to abundant rains, particularly at harvest time.

**References**


**Table 1.** Lint quantity and quality data comparing Oroblanco against Guazuncho 2, averaged through years 1992/93 – 1993/94 – 1994/95 and 1995/96 corresponding to 28 trials.

<table>
<thead>
<tr>
<th>Variety</th>
<th>1st Harvest</th>
<th>Total</th>
<th>Gin turn-out (%)</th>
<th>Length (mm)</th>
<th>Strength (1/8&quot;) (g/tex)</th>
<th>Elongation E(1/8&quot;) (%)</th>
<th>Fineness Micronaire (Index)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guazuncho 2</td>
<td>731</td>
<td>1147</td>
<td>42.2</td>
<td>29.1</td>
<td>26.6</td>
<td>6.0</td>
<td>4.5</td>
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<tr>
<td>Oroblanco</td>
<td>816</td>
<td>1107</td>
<td>40.8</td>
<td>29.3</td>
<td>27.7</td>
<td>6.3</td>
<td>4.3</td>
</tr>
</tbody>
</table>
Figure 1.
Oroblanco INTA pedigree.