

Reniform Resistance from *G.* *barbadense* 'TX110'

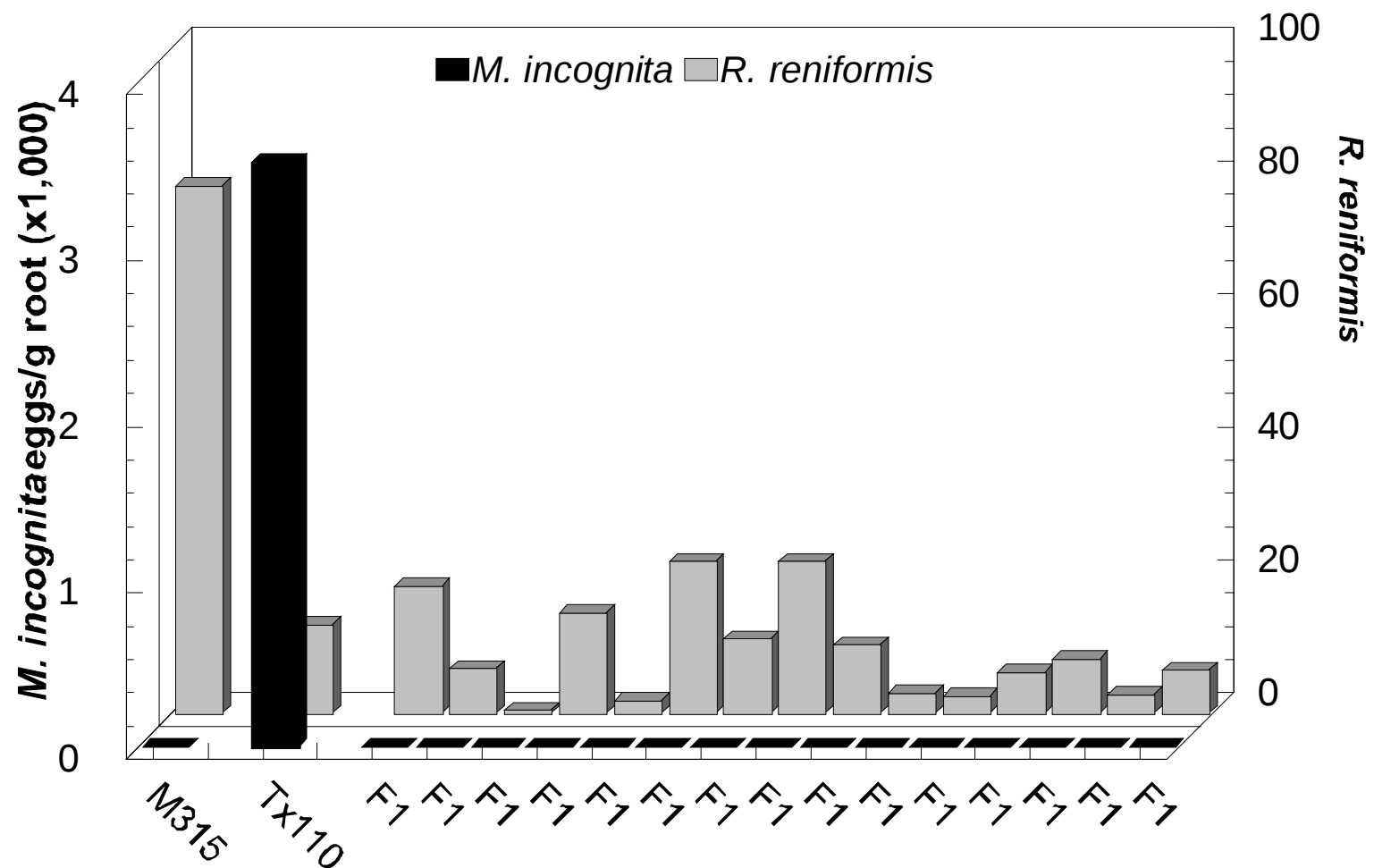
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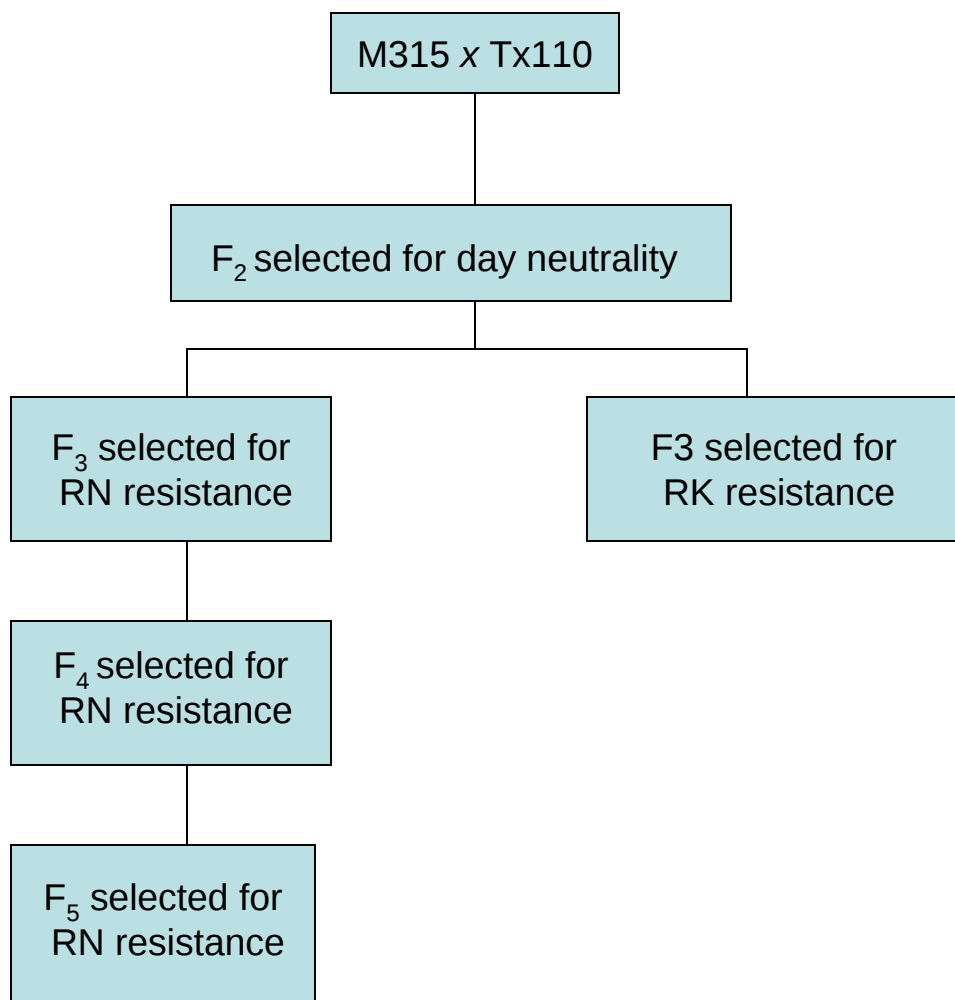
Primary Objectives

- Develop an interspecific population suitable for mapping loci for resistance *M. incognita* and *R. reniformis*
 - Original RFLP map of cotton by was based on *G. hirsutum* x *G. barbadense* (Reinish et al. 1994)
 - *G. hirsutum* has (AD)₁ genome whereas *G. barbadense* has (AD)₂ genome
- Develop *G. hirsutum* genotypes with resistance to *R. reniformis* (E. Zhou)
 - *G. hirsutum* 'M315' used as Root-knot resistant parent (Shepherd et al., 1988)
 - *G. barbadense* 'Tx110' used as Reniform resistant parent (Yik & Birchfield, 1984)

Resistance in F1 generation to Root-knot and Reniform nematodes

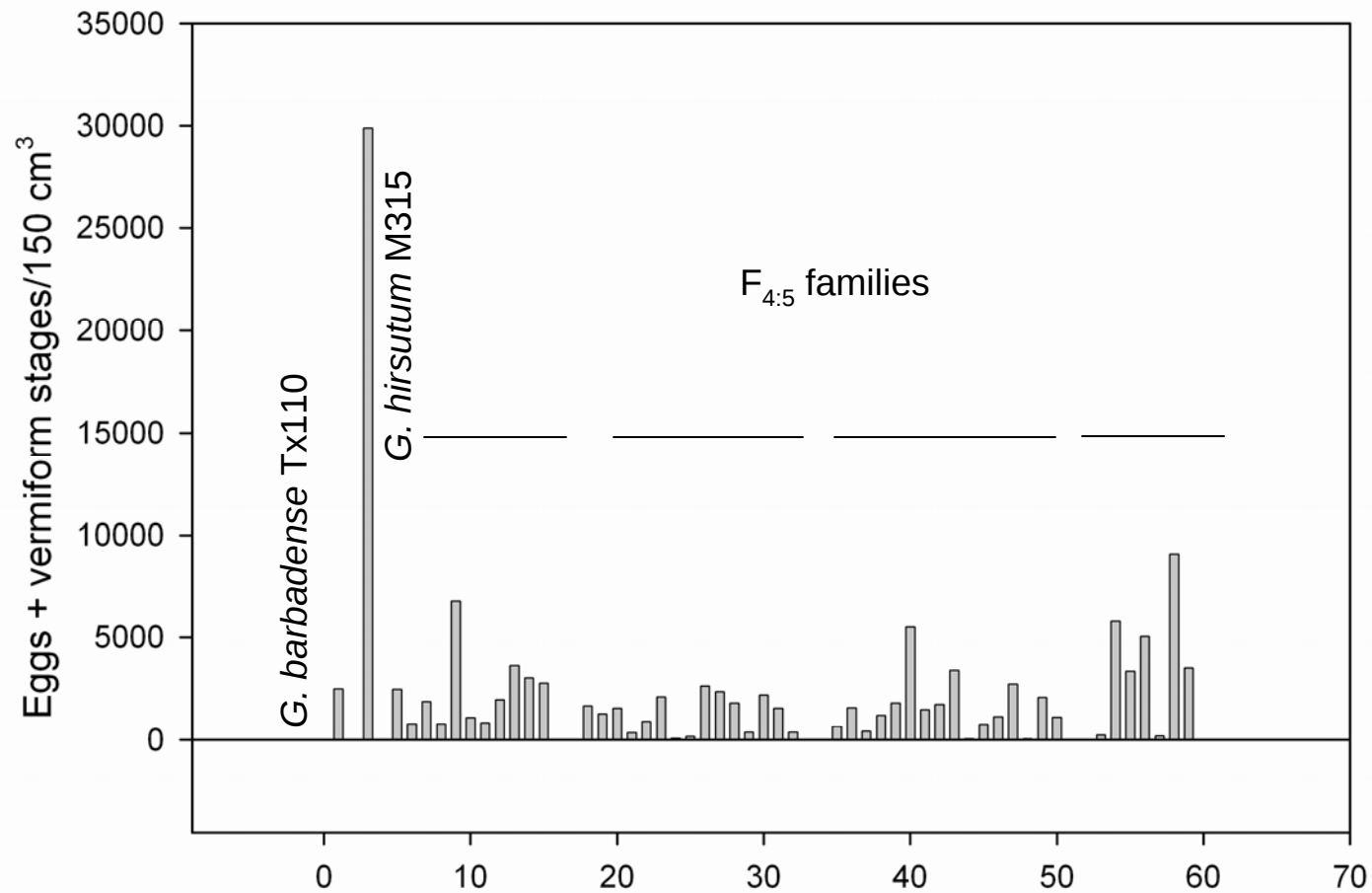


Resistant Genotypes to be Developed from Two Breeding Strategies – Pedigree Program

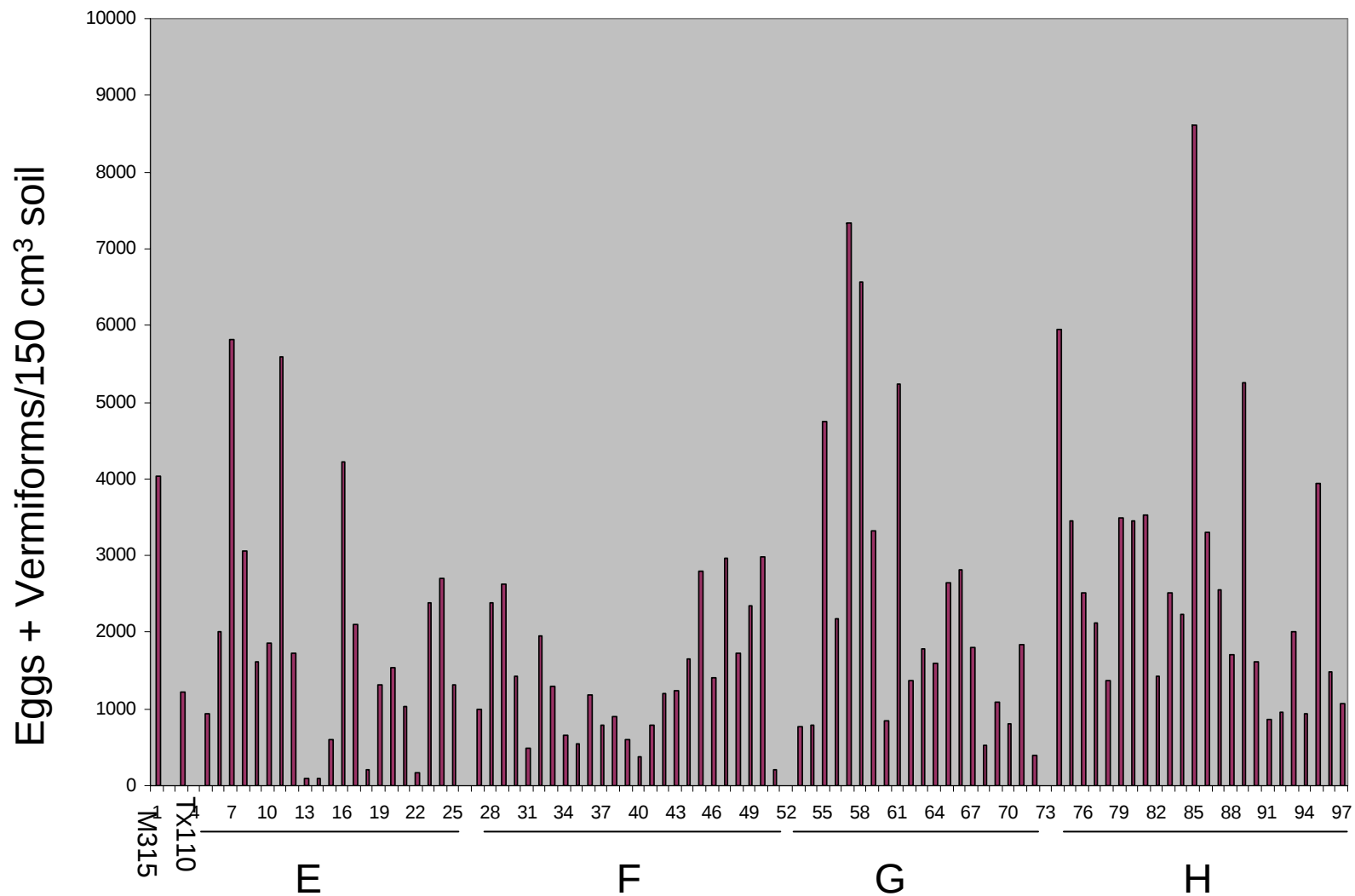


K. Ripple advanced material to the F₄ generation

Test 1 – means of each F4:5 family not different from mean of Tx110



Test 2 – means of $F_{4:5}$ families not different from M315, but resistant individuals selected from each family



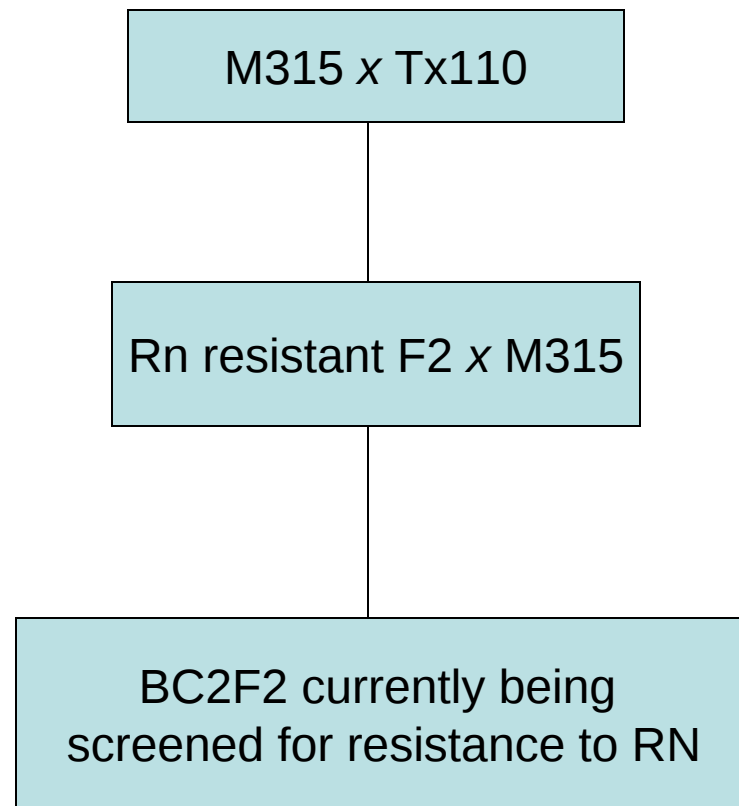
We expected to begin selection for agronomic traits in the F_5 and F_6 generations but unfortunately low fertility in F_5 generation is a real problem!

Resistant individuals were pollinated with pollen from M315 to create a new backcross population

This BC1F1 population is currently being screened for RN resistance and to produce a BC2F2 generation

Four RN-resistant F_6 lines are currently being grown in field plots to select for improved fertility

Backcross Program



Future Activities

- Complete development and screening of two BC_1F_2 populations
 - Create a BC_2 generation
- **If** improved fertility can be selected from the F_6 generation, then progeny again screened for RN resistance and agronomic traits