

Breeding Improved Pest Resistant Blackeyes and Other Cowpeas

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Project Summary:

Our activities at Shafter Research and Extension Center (SREC) support our Blackeye/Cowpea breeding program at UC Riverside whose goal is the development of improved, pest resistant cultivars of blackeye-type and other new types of cowpea for California growers. At SREC we grow nurseries of blackeye/cowpea breeding lines developed at UC Riverside and select promising lines, conduct replicated small plot grain yield evaluations of advanced breeding lines, and conduct large-scale strip trials of potential new varieties. We consider the Shafter REC to be a key site at which to evaluate yield potential and grain quality of blackeye breeding lines and other types of cowpeas under development by the breeding program.

Grain yield and quality tests conducted at the Shafter REC from 2004 to 2006 helped identify 03Sh-49 and 03Sh-50 as potential new blackeye varieties. These blackeye breeding lines had high yields of very attractive grain in replicated small plot 'Uniform Trials' conducted in 2004-2007 at the Shafter REC. Both of the new breeding lines have resistance to root-knot nematodes and are resistant to both Race 3 and Race 4 of Fusarium wilt. 03Sh-49 and 03Sh-50 also resist 'early cut-out' and produce large vigorous plants that should yield well under both optimal and more stressful conditions.

In 2007, we are conducting a small plot replicated trial having 8 entries and 8 replications, a large advanced line nursery, a replicated strip trial comparing the performance of CB46 with 03Sh-49 and 03Sh-50, and a 5 acre seed increase plot of 03Sh-50.