

II. REPORTS FROM COOPERATORS

AGRICULTURAL ALUMNI SEED IMPROVEMENT ASSOCIATION
West Lafayette, Indiana1. Further observations on the Rf inhibitor carried by CI.44.

Preliminary observations on the suppression of the fertility restoring gene Rf by CI.44 were reported in the last News Letter and the problem was studied further during the past season. CI.44 was crossed on K6T, K55T, Ky21T and Kyl22T, 4 naturally restoring lines which had been back-crossed into T cytoplasm, and these crosses were compared with the cross Oh45T Rf(I153) x CI.44 reported previously. One of the 2 plants of K55T and also one of the 2 plants of Ky21T used as seed parents proved to be heterozygous for Rf rf and their progenies gave 1:1 segregations for fertile and sterile plants. Otherwise all of the plants from these crosses were fully fertile with no indication of fertility suppression by CI.44. The cross Oh45T Rf(I153) x CI.44 yielded 46 late partials (similar to those reported previously) and 3 fertiles, 2 of which were very late plants. The reciprocal crosses of CI.44T by K6, K55, Ky21 and Kyl22 also were grown and all plants in these progenies were fully fertile.

The male sterile single cross WF9T x CI.44 was crossed by the following 14 restoring inbred lines:

B14T <u>Rf</u> (I153)	K6
B14 <u>Rf</u> (Tx127)	K55
C103T <u>Rf</u> (I153)	Ky21
C103T <u>Rf</u> (Ky21)	Kyl22
CI.42AT <u>Rf</u> (Tx127)	Oh43T <u>Rf</u> (K6)
HyT <u>Rf</u> (Tx127)	Oh45T <u>Rf</u> (I153)
I153	W153R

One plant of C103T Rf(Ky21) proved to be heterozygous for Rf rf and gave a 1:1 segregation of fertile and sterile plants in its cross. In addition a single plant among the 28 plants in the progeny from the cross involving B14 Rf(Tx127) was sterile. Otherwise all plants from all of these crosses were fully fertile except those from the cross involving Oh45T Rf(I153). Of the 59 plants from this cross 5 were partials and the remaining 54 were a little late in shedding pollen and were somewhat sparse shedders.

The general conclusion to be drawn from these observations, and a few other miscellaneous observations not reported, is that the fertility suppression of CI.44 is very specific and in the tests so far conducted is restricted to crosses involving Oh45T Rf(I153).

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