

As a result of this scarification treatment, the pericarp and aleurone layers were uniformly worn away, especially on the edges and tips of the kernels, while a recessed "germ" or embryo usually escaped damage. Such seeds could then be dipped in weak IKI solution, and rapidly spread upon an absorbent material to dry while being classified for wx. Searching for mutant kernels was as simple as looking for a red-brown ball among many black ones. Small batches were stained at a time, after rinsing away the loose dust, and immediately searched for mutants since the contrast between wx and Wx kernels is best just after staining.

It should be emphasized that the usefulness of the method depends upon having kernels in which the germ is recessed. This was the case in well-pollinated ears of M14, but is not true of many other inbred lines. From a practical point of view, even with M14 the method will be found unsatisfactory unless full sets of seed are obtained so that resulting kernels will be flat instead of round. Perhaps isolation-detasseling production of subject kernels is the most practical way of obtaining the needed numbers and quality of seed.

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5. id maize.

Several attempts have been made to mate id/id plants carrying a newly found id gene (Shaver, MNL 31:94) with id/id plants having the classical C30 id allele (Galinat and Naylor, AJB 38:38-47). Various manipulations of photoperiod have succeeded in inducing flowering, but the small ears produced have always been barren. Since it seemed impossible to mate homozygous id plants, an alternative procedure was employed, that of mating normal plants in segregating families from the two id sources. Of 16 ear progenies so obtained and grown in Florida this winter, 7 segregated for the id phenotype, indicating that the id genes from the two sources are allelic. It is interesting that the id/id plants, planted November 10, 1963, were not induced to flower as of January 28, 1964, in spite of the fact that they were grown in a regime which induces teosinte (the interval between sunrise and sunset on December 21 being only 10½ hours). This experience agrees with observations in Florida a year ago. Homozygous id/id plants, seeded October 15, 1962, were not induced as of March 10, 1963, at Princeton, Florida.

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6. Relative biological efficiency of monoenergetic fast neutrons on chromosomes in maize.

Investigations on the relative biological effectiveness (RBE) of densely ionizing radiations (with high LET, rate of linear energy transfer) are of importance in both fundamental and applied radiobiology. The difficulty in determining RBE on the basis of chromosomal exchanges or 2-break aberrations is that the dose-response curves differ for radiations of different LET and dose rate. Maize seeds of Yg₂/yg₂ genotype were used to study the RBE of fast neutrons vs. X rays.