

FUNCTIONAL MAPS FOR DEFECTIVE KERNEL MUTANTS IN MAIZE

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The cereal caryopsis is specialized to convert assimilate solutes rapidly to provide a carbohydrate and protein reserve for the germinating seed. The endosperm tissue has in the course of this specialization process acquired distinctive pattern of gene expression. Our efforts have concentrated on the role of two mutant types, a set of viable reduced endosperm mutant (the *de* class), and miniature-like mutants. Mutants were obtained by selfing plants of open pollinated maize varieties or from mutagenized and random tagging. Allelism tests showed the majority of mutants were not linked indicating that the phenotype can be caused by mutations in many unrelated genes. AFLP markers linked to individuals alleles were identified. For this purpose F3 families in which the mutations segregated in crosses with the mapping parents were used. To screen a large number of primer combinations, the bulked segregant analysis was carried out. The new AFLP markers were integrated into the intermated B73XMo17 genetic map. The maize map will be enriched of AFLP markers and mutant loci for which developmental mutants are described.