If, after an electrophoretic analysis of the mixtures formed according to this principle, it turns out that in some mixtures there are mutant enzymes, then, by the algorhythm of formation of mixtures, one can determine the number of the strain whose seeds are contained only in these mixtures. Thus, the number of the strain with the changed electrophoretic variant of the enzyme is determined.

Our model experiments demonstrated that the algorhythm described works well. We took 62 ears of Adh-S Adh-S genotype, and one of Adh-F Adh-F genotype. Having numbered them randomly, we made mixtures of seeds from these ears according to the algorhythm. An electrophoretic analysis of the mixtures showed that Adh-F isozyme was present in mixtures III, IV and VI, which points to the fact that the ear of genotype Adh-F Adh-F had the number 39. In this way, the time of determination of the number of the ear is reduced by the factor of 10.

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Analysis of peroxidase isozyme patterns in internodes in haploid and diploid maize

This study was carried out on line W155 and corresponding haploids obtained from W155 by means of "Chase tester" pollination proposed by Chase (Chase, 1947). Haploid plants were exposed by the absence of coloring in embryos at the seed stage, with subsequent cytological control at the seedling stage. The plants were studied at the stage of the formation of the fifth internode, when the growing internode was about half as long as the internode which has developed before it. Isozyme patterns of peroxidase were investigated in small underdeveloped, growing, and mature internodes. The staining of peroxidase isozymes after starch gel electrophoresis was carried out with benzidine. Internode growth in both diploid and haploid plants is associated with definite change in pattern of peroxidase isozymes. Isozyme patterns in diploid and haploid plants were not different. However, haploid plants differed from diploid ones in relative intensity of some individual bands in peroxidase isozyme patterns.

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