

3. Study on ADH activity in the scutellum of diploid and tetraploid maize.

Diploid lines of maize, W64, Sg-25, and the W64 x Sg-25 hybrid, and a tetraploid obtained by colchicine treatment of the diploid hybrid (W64 x Sg-25) were used in this study. The tetraploid was reproduced for 5 generations by self- and cross-pollination within the strain. All these lines and the hybrids were homozygous for the gene Adh_1^F (our unpublished data).

Alcohol dehydrogenase (ADH) activity was tested by following the rate of NAD reduction at 340 mu. The results were calculated as nmoles of NADH/min/ug protein.

The two diploid lines showed differences in their ADH activity in the scutellum. The diploid hybrid has intermediate enzyme activity (Table 1). The activity of the tetraploid form was similar to that in the diploid hybrid (Table 1). The gene Adh_1 was found to have no dosage effect.

Table 1

Alcohol dehydrogenase activity in the scutellum of diploid and tetraploid maize

	W64	Sg-25	diploid hybrid	tetraploid hybrid
ADH activity (nmoles NADH/min/ug protein)	589	845	635	639

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