

1. Studies on the enzymes of corn.

Published methods of assaying catalase, cytochrome oxidase, peroxidase, phosphatase, and polyphenoloxidase activities have been adapted for use with preparations of corn tissues, and the specific activities (based on protein nitrogen content) of preparations of embryos, sprouts, and seedlings have been estimated. The variety Krug and the single cross L289 x 1205 have been used in these studies. Excised embryos from ungerminated kernels which had been incubated for a few hours between wet paper towels were used in making the embryo preparations. Sprout preparations were made from sprouts of kernels incubated between wet paper towels for various times at 75°F. in the dark; and seedling preparations were made from the above-ground parts of seedlings grown in the greenhouse. The data presented in table 1 represent results obtained in typical experiments.

Table 1. Comparisons of specific activities of five enzymes in corn preparations. (7-day sprouts taken as 100 in each case)

Specific Activity	Preparations of			
	Embryos	Sprouts 3-day	7-day	Seedlings 14 day
Catalase	55	60	100	15
Cytochrome oxidase	30	65	100	25
Peroxidase	1	10	100	35
Polyphenoloxidase	less than 1	5	100	80
Phosphatase	20	35	100	35

At present comparisons are underway between preparations of untreated and irradiated corn with respect to the five enzyme activities listed.

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