

1. entrifugal fractionation of
2. corn shoot preparations with respect to various enzyme activities.

Homogenates, in unbuffered mannitol solution, of etiolated shoots of corn (L289 x I205 and Krug) were subjected to centrifugation at approximately 40,000 x g for 20 minutes, using a Spinco model L refrigerated ultra-centrifuge. The sediments and supernatants from this centrifugation were compared with the original homogenates with respect to the activities of catalase, cytochrome oxidase, peroxidase, phosphatase, and polyphenolase. Results of a typical set of determinations are presented in table 1. It is apparent that the sedimented fraction accounts for most of the catalase, cytochrome oxidase, and polyphenolase activities of the original preparation, indicating that under the conditions used, these activities are primarily associated with cytoplasmic particles of some sort. The supernatant fraction, on the other hand, accounts for most of the peroxidase and phosphatase activities of the original homogenate. It follows that if these two activities are associated with cytoplasmic particles, such particles are not readily sedimented under the conditions of this experiment.

Table 1. Distribution of enzyme activities following high speed centrifugation of a preparation of 5-day etiolated shoots of Krug corn.

Type of activity	Percentage of total activity			Sum of sediment and supernatant
	Original homogenate	Sediment	Supernatant	
Catalase	100	69	21	90
Cytochrome oxidase	100	83	0	83
Peroxidase	100	24	69	93
Phosphatase	100	8	93	101
Polyphenolase	100	66	28	94
Protein nitrogen	100	37	59	96

F. A. Haskins