recessive), the new genes have been designated soft endosperm. Expression of mutants 5586 and 4918 is dependent on sen, located on chromosome 3, and sen 2, located on chromosome 7. Mutant 4921 is dependent on sen 3, located on chromosome 1, and sen 4, not yet located. The expression of mutant 5595 is dependent on sen 5, located on chromosome 2, and sen 6, located on chromosome 5.

The amino acid profile of these mutants is approximately normal and the amylose-amylopectin ratio is normal.

T. R. Stierwalt
P. L. Crane

UNIVERSITY OF SOUTH CAROLINA
Columbia, South Carolina
Department of Biology

and

MSU/AEC PLANT RESEARCH LABORATORY
East Lansing, Michigan

1. Partial purification of the catalase-specific inhibitor in maize.

We previously reported evidence of a catalase inhibiting substance active in 24 hr. scutellar extracts that was apparently absent by the fourth day of germination (1). We have since initiated attempts at purification and characterization of the factor.

The inhibitor precipitates in 30-45% saturated ammonium sulfate solutions, as does approximately 80% of the catalase activity. Both activities are also retained by an Amicon XM-100 ultrafilter (100,000 MW exclusion). Gel filtration on Sephadex G-200 yields coincident peaks for inhibitor and catalase activity. In addition, a peak of inhibitor activity is seen in the void volume of the column suggesting an apparent molecular weight of several hundred thousand. This high apparent molecular weight and the copurification suggest the presence of a catalase-inhibitor complex. Attempts to dissociate this complex with urea, heat, high salt, and high and low pH have been unsuccessful. We have recently succeeded in preparing a catalase-sepharose affinity column, and expect it to be an invaluable aid in resolving this problem.

The catalase specificity of the inhibitor is demonstrated by the fact that, while it is fully active on beef liver catalase (1), it does not inhibit maize peroxidases, a group of catalytically related hemoproteins (Table 1).

Table 1

Effect of inhibitor on peroxidase. Scutellar extracts from days 1 & 4 were assayed for peroxidase and catalase activities, mixed in a 1:1 ratio, and assayed again for both enzymes.

	Peroxidase activity	Catalase activity
Day 1 Extract	12.6 u/ml	144 u/ml
Day 4 Extract	68.6	73
Expected Activity	40.6	109
Observed Activity	41.0	62
% Inhibitor	0	43

Work supported in part by AEC Contract AT (11-1)-1338.

Reference:

(1) Sorenson, J. C. and J. G. Scandalios. Isozyme Bulletin #6, 1972.

J. C. Sorenson
J. G. Scandalios

2. Purification of maize peptidases.

Leucine aminopeptidase isozymes in maize have been investigated by Scandalios (J. of Heredity 56:177, 1965) and by Beckman, Scandalios, and Brewbaker (Genetics 50:899, 1964). The aminopeptidases were shown to be controlled by four separate loci each exhibiting a pair of codominant alleles. Recently, a maize enzyme which cleaves the trypsin substrate, α-N-benzoyl-DL-arginine p-nitroanilide, was found in maize (Melville and Scandalios, Biochem. Genetics 7:15, 1972). A fast (more anodally migrating at pH 7.0) or slow variant is present in maize inbreds. Heterozygotes possess both isozymes with no hybrid enzyme band