

transmitted through the male, inhibition is only partial. It might be considered that such a behavior of  $\underline{I}^{\text{Coe}}$  and  $\underline{I}^{\text{Trombay}}$  is due to a gene-dose effect. However, the isolation of a variant of  $\underline{I}^{\text{Trombay}}$  which gives very little inhibition through the female would cast a doubt on such an explanation. Schwartz (Genetics Today 2:131-135, 1965) has discussed the inadequacies in explaining the action of several gene loci in terms of gene dose.

With a low frequency, the cross  $\underline{I}^{\text{Trombay}} \underline{I}^{\text{Trombay}} \times \underline{\text{AACRR}}$  yields colored or mottled kernels. To date 25 such kernels have been obtained from over 35,000 kernels scored (120 cobs). Out of these 25 kernels, only one was a genuine case of mutation from the dominant to the recessive colorless form. The remaining kernels did not indicate any germinal change.

The frequency of colored kernels is somewhat higher when  $\underline{I}^{\text{Trombay}} / \underline{I}^{\text{Coe}}$  is pollinated by  $\underline{\text{ACR}}$ . One hundred and twenty kernels have been obtained from 57,057 kernels scored (207 cobs). Thirty-four of the 120 kernels when crossed by  $\underline{\text{ACR}}$  gave smoky kernels ranging in number from 5% - 60% of the total, suggesting a possible change in the expression of the inhibitors.

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#### 7. Stability of Ds at the $A_1$ locus.

No change has been detected in the expression of  $\underline{\text{Ds}}$  at the  $A_1$  locus after pollen or seed of an  $A_1 \underline{\text{Ds}}$  no  $\underline{\text{Ac}}$  stock was subjected to the following treatments:

<u>Treatment</u>	<u>No. Analyzed</u>	<u>Observations</u>
1. U. V. irradiation of pollen	12,300	All kernels colorless
2. $P^{32}$ injected i) 30 days after sowing ii) at the time of flowering near tassel node. Pollen used.	21,665	All kernels colorless
3. Desiccated $A_1 \underline{\text{Ds}}$ no $\underline{\text{Ac}}$ seeds heated to 90°C., 100°C. and 110°C. for 15, 30 and 45 minutes and then chilled rapidly. Plants grown.	406	All kernels colorless

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