with cold 10% TCA and cold acetone, dried and counted in a Tricarb Scintillation spectrometer. The acid-insoluble counts give a measure of DNA synthesis. MC inhibited the incorporation of ^{3}H-thymidine into DNA, the maximum inhibition being about 70% at conc. of 200 µg/ml.

The seeds were not killed at this concentration and when returned to MC-free medium, the thymidine incorporation returned to normal in about 12 hours.

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4. Rates of DNA synthesis in embryos of Black Mexican Sweet strains with and without B chromosomes.

Rates of DNA synthesis were measured by ^{3}H-thymidine and ^{32}P incorporation in DNA of germs of Black Mexican Sweet strains with and without B chromosomes. The strain with B chromosomes had an average of two B chromosomes. In both cases 10 seeds of each strain were treated with fungicide, washed thoroughly and then incubated in the isotope solutions at 35°C with shaking. Results might have been somewhat vitiated as the germination in the two strains was not uniform. DNAs were extracted by the procedure of Marmur (J. Mol. Biology 3:208-218) after the embryos from the two strains had been matched, homogenized and lysed. DNA solutions were treated with RNase (50 µg/ml) to degrade any RNA. Spots (0.1 ml) were made on filter paper discs, treated with cold 10% TCA and cold acetone, dried and counted in a Tricarb Scintillation spectrometer. The counts are given below:

	DNA Soln.	DNA Soln.
	^{3}H Cts./min/0.1 ml	^{32}P Cts./min/0.1 ml
Strain without B chromosomes	2051	1618
Strain with B chromosomes	1359	1633

While ^{32}P incorporation is equal in the two strains, ^{3}H incorporation is considerably lower in the strain with the B chromosomes. No unequivocal conclusions are possible.

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5. Effect of change in chromosomal position of endosperm markers in maize on their radio-sensitivity.

It has been shown that the loss of endosperm markers following pollen irradiation in maize is dependent on the absolute (pachytene) length of the chromosome arm and on its position in that arm. Although, evidence

had been obtained from data collected for the loss of markers I Sh_1 Bz Wx, it nevertheless allowed a forecast of the relative loss of other endosperm markers. The forecast was verified for A_1, Pr, R, Su and Sh_1 (Faberge). An independent verification of the forecast may be obtained by comparing the calculated and observed loss rate of markers when they are situated on chromosome arms with changed pachytene lengths. This condition may be provided in stocks with suitable chromosomal translocations.

A number of such translocation stocks were selected and made homozygous. Four of such homozygous stocks with proper genetic background were used for experiments. Two of the stocks (I and II) had increased length of the 9th chromosome short arm, one stock (III) had increased length of the 10th chromosome long arm and one stock (IV) had decreased length of the 4th chromosome short arm. Fresh pollen from each stock was collected, cleaned and irradiated with 1 Kr of γ-rays and crossed on to appropriate testers. With each sample of pollen, a sample of pollen from an appropriate control stock was also irradiated and test-crossed.

Stocks I and II showed complete and partial loss of markers by formation of breakage-fusion-bridge cycles for the 9th chromosome short arm linked markers in 3.43% and 3.40% of kernels, respectively, whereas in the control only 0.57% kernels showed loss of markers. The figure for the control is comparable to figures found in the literature. It seems that changed arm length in stocks I and II did bring about change in the expected direction in the loss rate of markers on them. There was very little seed set from stock III and nothing could be scored. Stock IV showed whole or partial loss of kernel markers in 4.78% cases but no comparison could be made as the control had no seed set. The known loss rate in the normal type is 1.0%. It is difficult to compare these data with those from other sources because of different genetic backgrounds of the stocks and possible differences in the dosimetry. In our experiments, though the translocation and normal stocks were irradiated together, eliminating any difference in dose, the genetic background of the stocks was not the same. For a proper comparison of loss rate a reference marker in the normal position should be used as a control. We are preparing double tester stocks for that purpose.

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6. Inhibitor of aleurone colour.

A comparison has been made of aleurone colour inhibiting capacities of inhibitors from different sources. While the inhibiting capacities of I^{Coe} and $I^{Coop.}$ are roughly similar, $I^{Trombay}$ inhibits pigmentation to a lesser extent when tested against a common tester (color indices 2.31, 2.16 and 3.54 respectively). $I^{Trombay}$ is apparently allelic to I^{Coe} as borne out by linkage tests and by segregation pattern of kernels from a testcross of $I^{Coe}/I^{Trombay}$ heterozygotes. With our ACR tester (originally obtained from Prof. R. A. Brink), all inhibitors effect complete inhibition only when transmitted through the female. When