Four monosomic 2 plants were analyzed, and the following results were obtained:

Plant Number	Quartets with normal nucleoli in		
	4 cells	3 cells	other
3549-31	200	0	0
3550-14	276	2	0
4374-53	278	0	0
4480-27	259	0	0
Total	1013	2	0

In each quartet the four nucleoli appeared identical. It is clear from these data that the 5S template is not necessary for formation of a normal-appearing nucleolus at the quartet stage. Thus, the 5S rRNA template is not a nucleolar-organizing region in these cells. [Research supported in part by U. S. Atomic Energy Commission Contract AT(11-1)-2121].

David F. Weber

A test of the effects of DPX 3778 on the meiotic cytology in Zea mays — DPX 3778, an experimental compound from E. I. DuPont De Nemours and Co., Inc., appears to have promise as a pollen control agent. Extensive tests in several laboratories (Laible and Kincaid in this Newsletter, and others) indicate that relatively low amounts of this compound (as low as 0.5 lb/A) can prevent pollen release in corn, so that use of this compound might be an alternative for detasseling in commercial seed production.

In addition, this compound can induce production of silks and kernels in the staminate inflorescence, cause bent or curved tassels, induce both flowers in some spikelets to function and delay silking time (Laible and Kincaid in this News Letter; Charles Laible, personal communication).

Because this compound has such a wide spectrum of effects, and because it is effective in preventing pollen release if it is applied near the time that meiosis is taking place, it was felt that this chemical might also affect meiosis. At the time this study was carried out, the most effective time to treat plants was believed to be at the time meiosis was taking place. However, it is now known that if plants are treated 7 days before anthesis (long after meiosis is completed), the chemical is effective as a pollen control agent.

Plants of the inbred KYS were sprayed with DPX 3778 as an over-the-top spray at a rate of 5 lb/A. Microsporocyte samples were taken at 4, 8.5 and 48.5 hours after treatment. The microsporocyte samples were fixed and prepared for slides by the propio-carmine squash method. Pachytene, diakinesis, metaphase I, anaphase I,

metaphase II, anaphase II and the quartet stage were analyzed in each sample as well as from untreated sibling controls to detect any abnormalities which might be caused by DPX 3778.

At each stage, almost all of the cells were normal. Although a very low frequency of abnormal cells was detected at certain stages in these samples, a similar frequency of these abnormal cell types was also observed in untreated control plants.

Plants of the inbred A632 were also treated in a similar way at a rate of 4 lb/A, and microsporocyte samples were taken at 30 and 105 hours after treatment. Meiosis in these samples also appeared no different from meiosis in control, untreated sibling plants.

Thus, meiosis in DPX 3778-treated plants does not appear to differ from meiosis in untreated control sibling plants. (I would like to express my thanks to Dr. Charles Laible for treating the plants utilized in this study. I would also like to thank Funk's Seeds International for providing nursery space in which these and other plants were grown).

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A maize-microbe bioassay for the detection of proximal mutagenicity of agricultural chemicals — We have devised a bioassay to detect the presence of proximal mutagens of agricultural chemicals. A proximal mutagen is a mutagen that arises from the host metabolism of a non-mutagenic substance or "promutagen" (Brusick, D. J., and V. W. Mayer, Environ. Health Perspec. Experimental Issue No. 6:83-96, 1973). Although we believe the wide use of pesticides is necessary, we suggest that the present monitoring systems used to detect genetic damage are inadequate. Since the possibility exists that mutagenic agents may be passed along the food chain, we contend that additional genetic monitoring systems should be developed and tested for their accuracy and economic feasibility. The recent citation of aldrin and dieldrin as carcinogenic compounds (Carter, L. J., Science 186:239-242, 1974) amplifies our concern, especially since many scientists hypothesize that carcinogens cause cancer by somatic mutations (Ames, B. N., Genetics 78:91-95, 1974). Thus a rapid method to detect mutagens arising from the use of agricultural chemicals is urgently needed.