

theoretical value of 45.3. This total of 11 means exceeds the two expected (5% level) and constitutes statistical argument for the presence in maize of primary non-homologue association.

In the presence of agents which disrupt microtubules, all the homologue ADV's were increased and the number of significant means of comparisons among non-homologues was reduced from 11 to one; i.e., the distributions became random.

J.D. Horn

Effects of cycloheximide on the frequency of somatic polar metaphase observed —

We have found that a short pulse of cycloheximide resulted in a marked increase in the frequency of observed polar metaphase. The sensitivity of the cell to this treatment was cell-cycle time specific. A 15-minute cycloheximide treatment (75 ug/ml) at the beginning of prophase resulted in a marked increase in polar metaphases at 45-60 minutes post-treatment at 27°C and at 135 minutes post-treatment at 18°C (Table 1). We interpreted these results as being indicative of a cell-cycle time specific event.

Table 1. Dividing nuclei (%) following cycloheximide (15'; 75 ug/ml) treatment.

Control	Stage	Minutes following treatment							
		27°C				18°C			
		0	30	60	90	0	30	90	135
60	Prophase	42	61	55	68	57	68	76	63
21	Metaphase	36	18	15	5	24	18	18	6
6	Polar metaphase	6	15	25	27	7	6	6	31
7	Anaphase	8	4	3	0	6	4	0	0
6	Telophase	8	2	2	0	8	4	0	0

Cycloheximide is an inhibitor of protein synthesis. The proteins necessary for coiling of the somatic chromosomes are presumably already synthesized by the time of the onset of prophase since normal-appearing metaphase chromosome morphology is evident in cycloheximide-induced polar metaphase nuclei. Proteins necessary to uncouple the chromosomes from the nuclear membrane, for the breakdown of the nuclear membrane and for spindle fiber synthesis are not produced after the challenge with cycloheximide.

J.D. Horn

Description of chlorophyll mutants by in vivo spectrophotometry — Virescent chlorophyll mutants have long been recognized for their potential not only as genetic tools but also as vehicles for the study of development of the photo-