Table 1. Total variation attributable to additive and additive epistatic gene effects in the o2 and analogous normal triallels.

Character	o2	Normal
Days to 50% pollen-shed	96.56	90.08
Days to 50% silking	96.34	83.96
Total leaves	91.63	77.80
Grain yield	80.53	87.28
Raw ear yield	88.83	88.23
Leaf area index	94.76	89.02
Leaves above the ear	93.23	90.26
Ears per plant	78.78	79.48
Plant height	91.14	93.01
Ear height	96.47	93.77
Tillers per plant*	78.11	71.08
Ear length	86.15	86.54
Ear diameter	90.13	93.25
Kernel rows	82.89	93.52
Kernels per row	76.70	85.12
Kernels per ear	78.96	85.36
Drying percentage	93.18	85.98
Shelling percentage	94.22	92.76
Rachis diameter	87.74	90.80
200-kernel weight	88.56	90.75
Kernel density	84.63	84.47
% water imbibition	72.48	80.27
Kernel length	86.92	87.42
Kernel width	83.98	92.34

*Data from one year (1973) only.

yield components as ear diameter, kernel rows, kernels per row, kernels per ear, rachis diameter, 200-kernel weight and kernel width had more variation due to additive and additive epistatic gene effects in the normal cross-hybrids than in their o2 counterparts. The proportion attributable to additive and additive epistatic gene effects appeared to be unaltered for such traits as raw ear yield, ears per plant, ear length, kernel density and kernel length.

D. Gupta

Investigation of some varietal hybrids developed at CIMMYT under our continental climatic conditions — In 1974 in collaboration with CIMMYT we studied the adaptation of 132 varietal crosses selected by CIMMYT's Dr. E. C. Johnson from many parts of the world and representing different latitudes and altitudes. The important geographical data for Martonvásár are: latitude 47°21', longitude 18°21', elevation 150 m. The general behavior of these crosses observed at Martonvásár can be summarized as follows: they have good early vigor and are very tall (3-4 m) with highly placed ears, an under-developed root system with a rather high percentage of root lodging and a significant susceptibility to stalk-rot and to Ustilago maydis.

Table 1. Relationships of two earliness characteristics in some of the CIMMYT varietal crosses.

Symbol of varietal crosses	Days to 50% male flowering											
	Average number of leaves above the ear											
	5.0	5.2	5.4	5.6	5.8	6.0	6.2	6.4	6.6	6.8	7.0	7.2
131 A	109											
130 A	108											
129 A		113										
39 A			107									
64 A				110								
108 A					110							
77 A						114						
127 A							116					
55 A					96							
76 A					99							
9 A						100						
18 A							100					
40 A								100				
1 A									100			
50 A											106	
4 A												106

Mean male flowering time: 104 days
Mean leaf number above the ear: 5.97

The adaptability to environmental factors can be evaluated on the basis of such earliness characteristics as the days to 50% male flowering and the number of leaves above the ear. We obtained a highly significant positive correlation ($r = 0.2989^{+++}$) between these two traits. Within this relationship, however, we have found several special responses to the climatic conditions, including the day length. It can be seen in Table 1 above that certain combinations having a lower number of leaves above the ear require more days to 50% male flowering; conversely, there are certain combinations which have relatively more leaves above the ear and at the same time have a short vegetative period.

I. Kovács

Heat requirement for germination of maize at low temperature — We have presented data in the 1973 News Letter (47:214-216) on the characteristic behavior of certain inbred lines of maize during the germination process and on their heat requirements at low temperatures (10 days at 8°C, followed by 21-22 days at 14°C. planted in a plastic box 5 cm deep in soil). In the present paper we have new experimental data from tests conducted in the incubators of the Martonvásár Phytotron.

Effect of growing conditions of different years: We found that seeds harvested in different years were very similar in their time of germination and heat requirements (Table 1), despite the variable quality of the seed, as indicated by