We have investigated the stalk rot resistance of some normal lines and their opaque analogues, as well as hybrids (Table 2). Among them, the best was the single cross hybrid, 156 x B 14, in both the normal and the opaque forms.

Table 2

Stalk rot resistance of opaque-2 and normal hybrids and their parents

Pedigree	Normal	Opaque-2	Average
156	0.0	4.1	2.0
W 153	3.8	7.1	5.4
156 X W 153	20.0	30.0	25.0
156	0.0	4.1	2.0
B 14	0.0	0.0	0.0
156 X B 14	3.3	3.1	3.2
N 6	81.6	75.1	78.4
C 103	0.0	2.0	1.0
N 6 X C 103	63.1	53.4	58.3
Inbreds average	14.2	15.3	14.7
Hybrids average	28.8	28.8	28.8

István Kovács

2. Heat unit differences for germination of maize.

The many year's experiences with cold testing of maize have led to significant achievements in maize breeding. Attention has mainly been concentrated on good germination percentages at low temperatures. Maize breeding, together with a good seed technology and effective fungicides, resulted in a good field stand even in northern regions of maize cultivation. But there are also great differences in germination processes among samples germinating well under low temperatures.

In the last ten years we tested a few hundred samples of breeding materials in Martonvásár and observed highly significant differences in the heat requirement of maize genotypes which have good germination per-

Table 1

Processes of germination and sum of temperatures

Number of days after planting		18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Sum of temperatures		192	206	220	234	248	262	276	290	303	318	332	346	360	374	388	402	416
No.	Pedigree	Germination percentages																
1	6 oszv. S_2	50	80	90														
2	8 oszv. S_2	60	80	86														
3	5 oszv. S_2	60	80	83														
4	4 oszv. S_2	50	70	80	82													
5	187	16	31	52	80													
6	W 17		28	47	70	93												
7	H Mv 356		7	33	65	87												
8	W P14 (1970)		23	63	73	86												
9	W P14 (1966)			20	53	80												
10	7 oszv. S_2	15	20	30	60	80	90											
11	A			7	24	50	60	80										
12	014		7	30	53	63	70	77										
13	WF9				46	60	70	70	80									
14	N 6			17	40	60	66	68	70									
15	A 375		3	3	20	47	60	65	75	86								
16	A 264				7	30	53	-	83	86								
17	A 293				3	13	23	-	60	83								
18	R 4				10	30	43	47	50	60	83							
19	Oh 43				20	30	40	67	73	73	80							
20	Ia 153					3	13	27	47	67	70							
21	A 286					7	30	-	50	63	70							
22	4519 segr.			3	10	20	23	30	43	50	73	83						
23	40 a		7	17	47	60	60	60	63	67	67	73						
24	9 oszv. S_2 I			3	56	61	66	66	75	76	80	83	86					
25	W 23 (C5)							13	23	37	40	47	60	70				
26	4518 segr.			3	60	10	23	36	50	56	63	73	73	80	90			
27	9 oszv. S_2 II		1	33	40	40	53	53	60	60	63	63	63	66	70			
28	H Mv 850				16	23	43	53	60	60	63	63	63	63	66	70		
29	4504 segr.			3	10	16	20	23	30	33	36	56	56	63	63	66	66	80

centages. We studied germination under the following conditions: three replications of 20 seeds each were planted in 5-6 cm deep soil (taken from a maize field). During the first ten days, the temperature was 8°C and from the eleventh day, 13-14°C. In Table 1, we have summarized the data from 29 maize genotypes with germination percentages of 70-90. We also calculated the sum of temperatures. It is probable that there are strong differences in the heat requirement, because all maize samples were able to germinate to an almost similar per cent, but the dynamics and final stage were very different in time. For the best types, 220°C was enough for complete germination, while others only began to germinate and finished above 400°C. Samples marked "oszv" are progenies of seeds overwintered in the breeding nursery in Martonvásár. These S_2 plants showed less heat requirement for good germination than any others.

We hope that by this technique we can select maize genotypes which have much less "time-loss" under low temperatures during a cool spring.

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1. Screening for redundant segments in the Zea mays genome with monosomic maize plants.*

Reciprocal translocations are found in the progeny of monoploid X diploid crosses (Alexander, Nature 201:737-738, 1964). We (Weber and Alexander, Chromosoma 39:27-42, 1972) have recently identified break-points of 22 reciprocal translocations generated in this way. The points of translocation appear to be at points of interchromosomal redundancy because a) certain of the translocations were found repeatedly and b) my previous work (Weber, Genetics 60:235, 1968) indicated that illegitimate recombination between nonhomologously synapsed segments does not occur in

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