

4. Pollination with small counted samples of pollen.

In a test conducted by Y. H. Chang in 1967, counted samples of fresh pollen from A C R were carefully applied to silks of c tester ears in a large block of this genotype (i.e., contaminations would be unlikely to be C). The results were as follows (A stands for applied counted pollen grains, P for purple kernels obtained, Y for yellow contaminants, and E for 100P/A as a measure of efficiency):

A	20	20	50	50	50	50	100	100	100	100	150	150	150	150
P	2	5	5	10	13	17	7	28	14	25	6	27	21	33
Y	1	2	4	7	10	6	3	1	2	3	0	0	3	5
E	10	25	10	20	26	34	7	28	14	25	4	18	14	22

I carried out a similar test last summer, with W23/M14 (c c r r) as ear parent, with the following results:

A	7	9	12	12	16	18	20	20	37	38	41	43	78
P	1	2	0	1	0	2	3	0	5	5	4	6	9
Y	2	2	9	0	0	3	0	2	5	5	5	0	9
E	14	22	0	8	0	11	15	0	14	13	10	14	12

At these levels of pollination no "population effect" is operating, since the efficiency seems neither to decrease with higher counts nor to change with higher contamination. The most efficient one of these trials (17 kernels from 50 pollen grains) is evidence, though not proof, that more than one of each four microspores is functional. If only one microspore were functional, only 10% of random samples of 50 grains would include as many as 17 functional grains.

E. H. Coe, Jr.

5. Allelism and expression of Wh and Wc.

Linkage data have established that Wh and Wc are in the same region of chromosome 9. A test for allelism establishes that they are essentially allelic; discrimination tests indicate that Wh is slightly more expressive than Wc. Among 10 ears from the cross of +Wc/bk Wh x bk +, no clearly yellow (wild type) kernels were found in a population of 3,708 kernels. Progeny tests of 14 kernels that were the yellowest from each ear showed segregation of dominant "white" in each instance. The