

2. The relation of Enhancer (En) to Spm.

Tests have now been completed that show a relation between the action of En (reports of this system in previous MGCNL) and that of Spm. In crosses of Dr. McClintock's Spm tester allele, a_1^{m-1} (pale and stable) with an En stock, the kernels, a_1^{m-1}/a_1^{dt} , are characterized by mutant purple areas on a colorless background. In a further test-cross of these mutable kernels stable pale segregants typical of the a_1^{m-1} expression were recovered and this is correlated with the absence of En in these kernels.

These tests show that En can both suppress the action, the pale coloration, of this allele and also induce this allele to mutate to higher levels of pigmentation. The principal difference in the En system is the occurrence of a colorless allele, $a_1^{m(r)}$, that becomes mutable in the presence of En. This is in contrast to the pale coloration of McClintock's a_1^{m-1} allele.

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3. The effect of B-chromosomes on pollen size.

In an effort to evaluate the role of B-chromosomes, studies on the effect on pollen size were conducted. Measurements were made of pollen grain diameters. This experiment was based on the premise that the genotype of the pollen grain is reflected in a phenotypic character, in this case pollen size. Thus, a correlation was sought between pollen size and the absence or the presence of a variable number of B-chromosomes. Rather than use mean values in the comparison (since plants are highly subject to environmental variation), the variances (s^2) of the measurements of individual plants were analyzed. It was found that in a comparison of non-B and B-containing plants there is a greater amount of variation (significant at the 10% level) in the plants with B-chromosomes.

Further experiments using the same comparison on additional data are now being evaluated.

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