

In view of the above facts it is appropriate to change the designation of this mutant to a dominant yellow-green allele of oy and give it the symbol Oy^{YG}.

Another peculiar characteristic of this dominant allele is that homozygous kernels appear to lose their viability quite rapidly. Plantings made soon after harvest of randomly selected kernels from selfed ears from dominant/normal heterozygotes gave good 1 yellowish white: 2 yellow-green: 1 green ratios, while plantings from the same ears 1 year later gave 2 yellow-green: 1 green seedlings with an occasional yellowish white seedling. Approximately 1/4 of the kernels did not germinate. These would account for the missing yellowish white seedlings.

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10. tn allelic to oy, designated oy^{tn}.

Crosses of tinged (tn tn) with yellow-green heterozygotes (Oy Oy^{YG}) and with oil yellow (oy oy) plants have given seedling progenies whose phenotypes clearly indicate allelism. The interactions are as follows:

<u>parent genotypes</u>	<u>seedling phenotype</u>
<u>tn tn</u>	green → yellow green
<u>oy oy</u>	oil yellow → yellow green
<u>tn tn</u> x <u>oy oy</u>	intermediate (yellow green)
<u>tn tn</u> x <u>Oy Oy</u> ^{YG}	1 green: 1 lethal yellow
<u>oy oy</u> x <u>Oy Oy</u> ^{YG}	1 green: 1 lethal yellow
<u>Oy Oy</u> x <u>Oy Oy</u> ^{YG}	1 green: 1 yellow green

These observations demonstrate a complexity of activity at the oy locus that had not been suspected. More complete descriptions of phenotypes and better comparisons await conversion to a common background.

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11. Tan necrotic (nec-E409).

One of the tan necrotic mutants reported last year (nec-E409) has been located by selfing the hypoploids from each of the TB tests. Three out of four selfed ears from TB-5a hypoploids produced from the cross of

+nec x N/TB-5a gave a total of 208 necrotic: 9 normal seedlings in progeny tests. Therefore, since hypoploids transmit only the normal chromosome (in this case chromosome 5) the mutant must be located proximal to the breakpoint of TB-5a. Excluding unlikely contaminants and the coincidental union of crossover gametes, the 9 normal seedlings represent 9 crossover and 9 noncrossover gametes among 434 chances or 2% exchange between the mutant and the breakpoint. Allowing for crossover reduction around the breakpoint, this would place the mutant near and possibly on the opposite side of the centromere.

For reasons as yet unknown, the mutant seedlings from the selfed hypoploid were not lethal initially, but gave green seedlings with tan necrotic crossbands. This contrasts with earlier observations that this mutant failed to develop chlorophyll after emergence.

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12. Pale green mutable.

Two separate cases of pale green mutable seedling (frequent normal green sectors on pale green background) arose in a culture that also had Spm present. The mutants resemble Dr. Peterson's pg^m. Crosses by A-B translocations produced mutant hypoploids for both from crosses involving translocation 3b; therefore the mutants are tentatively located on the short arm of chromosome 3.

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