

47-1973

and testcross ears gave a 1:1 segregation for yellow green and green seedlings.

Yellow green plants were crossed by each of the A-B translocations (MNL 45:144) and plantings made from the resulting seeds. All of the ears gave a 1:1 segregation for yellow green except the cross by TB-10c, which had 69 green, 29 yellow green and ten pale yellow seedlings. The pale yellow seedlings appeared to be hypoploids, thus indicating that the mutant has a yellow seedling phenotype when hemizygous.

These results indicate that the mutant is a dominant yellow green in heterozygotes and a lethal yellow in homozygotes and hemizygotes and that it is located on the short arm of chromosome 10. It is tentatively designated as Yg₁.

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5. Tan necrotic.

Two cases in which the mutant seedlings emerged with tightly rolled leaves were found in the EMS progenies. When the leaves were unrolled, they were found to be tan in color with uniformly spaced bands of dark brown tissue. A slight amount of chlorophyll appeared on the coleoptile and underlying leaf sheath at soil level. The seedlings grew very little and died in a few days. A good but not exclusive test by existing A-B translocations failed to uncover either mutant.

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6. Pale green spotted.

Several cases characterized as pale green with fuzzy dark green spots have been found in EMS, NG and mutator system progenies. One of these (pgs, E-464), which was found in an EMS-treated culture and has been located on the long arm of chromosome 2, can be described as an example. The seedlings emerge as a moderate pale green with good vigor. At about the 2 leaf stage, small fuzzy spots of dark green (slightly larger than a pin head) appear and increase in number until there may be 40-100 on a leaf. Occasionally a spot may be much larger, in which case it will be elongated, conforming to the pattern of cell lineage of the