

2. Segregations of the Cg gene in the presence of plus modifiers.

Genetic evidence has been obtained that the expression of the Cg (corn grass) gene may not only be reduced from the dominant to the recessive condition but be eliminated entirely by the accumulative effect of plus modifier genes. In some F₂ families the Cg gene was expressed in less than three per cent of the individuals.

The genotype of plants from F₂ segregations of the Cg gene at high plus modifier levels may be determined by a progeny test with F₃ families or by outcrosses to Connecticut 142, a prolific rice pop inbred. The progeny test is effective in determining whether the normal F₂ segregants are +/+ or Cg/+ because the Cg/Cg plants can be recognized as corn grass in cases where the Cg/+ plants appear normal. C142 may be used to determine the corn grass genotype because the plus modifier genes for the Cg gene are largely recessive in combination with this rice pop inbred although they are dominant in combination with most other inbreds.

The wide array of distinct pleiotropic effects of the Cg gene has made possible the interaction of many plus modifier genes and their subsequent classification.