

16. Effect of Vg on development of the ligule.

Classifications for the ligule character were made among mature plants in several families segregating approximately equal numbers of normal and Vg (vestigial glume) individuals. All normal (non-vestigial) plants were found to have a normal ligule whereas all of the plants classifiable as Vg (vestigial) on the basis of reduced glumes associated with male and female florets were without ligules. These plants have a transverse ridge of compact tissue bordering the sheaths and blades of leaves but lack the membranous extension or flap which is characteristic of a normal ligule. Casual observation of these plants does not permit classification for the liguleless character since the leaf blades of Vg plants are oriented at a sharp angle with the culm as in normal plants, a habit which probably accounts for the earlier failure to recognize this character. Well over 100 field grown Vg and normal plants were classified this past summer for the ligule character; all Vg plants were liguleless while all of the non-vestigial plants had normal ligules. Since it appears that the liguleless character of Vg plants may be classified in the seedling stage, it should provide a valuable marker for chromosome 1 for which relatively few genes with seedling effects are known.

Since there is no basis on which to argue a homology between glumes and ligule, it is suggested that Vg may have a generally adverse effect on those meristems which, in terms of the cycle of development in the particular organ concerned, are initiated relatively late.