The term "uniform" as applied to a cotton variety by a breeder implies that all plants conform closely to a fixed standard in all measurable characteristics and that the genetic composition of the variety has been stabilized. The importance of uniformity has been stressed in cotton breeding programs, and line breeding has had as a main objective the selection of strains that are homozygous for plant and fiber characters.

Recent investigations in breeding methodology have indicated that inbreeding may result in greater uniformity, but such increase in uniformity may be associated with loss in vigor and lower yields. On the other hand, hybridization of good combining lines has resulted in increased vigor and larger yields in the early generations of such hybrids. It is to be expected that the product from segregating generations of hybrids will be less uniform than line-bred varieties. Thus, emphasis upon uniformity may deter breeders from using methods that otherwise would seem advantageous. More information is needed on the spinning performance of cottons that differ in uniformity of fiber properties so that the allowable limits of variation in these properties may be more accurately defined.

Cotton samples are never uniform in the sense that all fibers are of equal length, strength, or fineness even on the same plant or on an individual seed. In current methods of field evaluation, the term "uniform" refers to the adherence of individual plants or plants from different parental lines to a standard in all measurable characteristics. It is not always possible to differentiate between the two types of uniformity, and the distinction is often obscured by the use of the term "uniform."