The aim of this study was to assess the genetic distance between eleven Bulgarian and four Macedonian cotton varieties by applying the method of cluster analysis. The trial was carried out in 2008 and 2009. The cluster analysis based on the varieties agronomic and fiber technological properties confirmed the genetic differences between them. The varieties grouped into two basic groups depending on the breeding directions and breeding methods. Some varieties were genetically very similar and they could be included in one breeding program for rapid breeding effect. The Macedonian varieties and lines were genetically distant from some Bulgarian varieties and their including in one breeding program can has a good effect. The year conditions had influence on genetic similarity and genetic remoteness as a result of predetermination of genetic formulas controlling the traits. In Strumica the varieties differentiated stronger in yield and lint percentage and weaker in fiber length.

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