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80501 USA -The evaluations of methods for ploidy determination in Beta Vulgaris L.

Various methods for Ploidy determination in sugar beet (Beta Vulgaris L.) were evaluated. These methods included the measurements of leaf stomatal density, stomatal size, chloroplasts number in stomatal guard cells, pollen size and somatic chromosome counting. All these methods were conducted among a diploid population and its equivalent triploid and tetraploid populations. The results indicated that the somatic chromosome counting was the most reliable and efficient method. However, good cytological technique was required. The pollen size measurement is a practical method, though the measuring time is limited. The chloroplast number in stomatal guard cells also provided useful information for ploidy determination, its simple, but lack of accuracy between triploid and tetraploid. The measurements for stomatal density and size showed quite variations and hard to be accurate for practical use. The method of using flow cytometer to measure ploidy levels was also discussed.