METHOD FOR DETERMINING THE LEAF AREA IN SWEET CHERRY TREE VARIETIES (*PRUNUS AVIUM* L.)

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Non-destructive methods for determining tree leaf area are a useful tool for physiological and agronomic research. The purpose of this work was to carry out a comparative analysis of the methods used to determine the surface of leaves of fruit plants by linear measurements of the height and width of the crown and the leaf density, which would make it possible to determine the photosynthetic potential and the leaf index of the orchard during the growing season without leaf destruction.

The Regina cherry variety, grafted onto the Maxma 14 rootstock, planted in 2011 at a distance of 5x3 m was studied. The surface of the leaf blades was determined using the weight of leaf blades, the number, area and weight of round cuts. The conversion factor or regression equation relating the area of a leaf to its linear dimensions (length-width) was used to determine the area of the leaf.

The method consists of assessing the leaf surface by the density of leaves found on one linear meter in the crowns and rows of trees. An algorithm and regression equations have been developed to estimate PFL and IF according to the following scheme: the determination of the average leaf area per unit volume, including one linear meter of volume of tree rows. The method involves placing a one-meter ruler at different angles to the vertical in the crown several times. The average leaf surface per unit volume is determined by the number of found leaves (N) per linear meter and the average area of a leaf (Sf), calculated using the gravimetric method. The actual volume of the crown is determined depending on the height of the crown (H), the width of the central part of the crown (B), and the distance between the rows of trees (L). The leaf surface per 1 m^2 of crown projection on the ground (PFL) and per 1 m^2 of the orchard surface (IF) is calculated according to the following formulas: PFL = Sf * N3 *H, m^2/m^2 (1); IF = PFL *B/L, m^2/m^2 (2).

As a result of the study, a model for calculating PFL and IF was proposed, based on the average number of leaves per 1 linear meter of crown volume and the average leaf surface of the Regina sweet cherry variety, grafted on MaxMa 14, planted at a distance of 5x3 m. The method is an effective and easily accessible way to assess the surface of leaves without destroying them.

Keywords: leaf area, sweet cherry tree (Prunus avium L.).