

# Thermal Requirements for Mainstem Leaf Development of Spring Barley during Tillering

**1 V. Momcilovic (1), N. Przulj (1)**

(1) Institute of Field & Vegetable Crops, Novi Sad, Yugoslavia, (momcilo@ifvcns.ns.ac.yu)

Time interval between appearances of successive leaves is designated as phyllochron interval (PI). The objective of this study was to evaluate PI of mainstem leaf (MSL) development during tillering of spring barley. Six spring barley varieties were grown in Novi Sad, Serbia and Montenegro (45° 20' N, 15° 51' E, 86m asl) from 1999 to 2001. Phyllochron was estimated using Haun scale where growing-degree-days (GDD) served as time scale. PI ranged from 60.5 GDD in the fifth to 75.8 GDD in the third leaf. All three factors, i.e., year, variety, and their interaction, were included in phyllochron determination of the first leaf. The highest percentage of variance component for first leaf phyllochron belonged to year. Variation in phyllochron of the second leaf was controlled by variety and interaction year x variety, variations in phyllochron of the third, fourth, and fifth leaf by year and interaction, and variation in the sixth leaf by interaction only. The linearity suggests that MSL stage can be used as a predictive measure of plant development and can retroactively show the quality of the preemergent seedbed environment.

**Key words:** Barley (*Hordeum vulgare* L.), Haun scale, phyllochron