OP-20. The Effect of Different Tillage Methods on Plant Emergence Parameters for Wheat

Zeliha Bereket Barut[1], Serkan Özdemir[1]

[1]Cukurova University, Faculty of Agriculture, Department of Agriculture Machinery and Technologies

Corresponding author: cansa.serkanozdemir@gmail.com

Conventional tillage; it is an application where most of the plant residues are buried or burned under the ground, and the plant residues on the soil surface are less than 15% after planting. With the environmental awareness that developed after the 1970s, alternative methods have been developed that minimize the field traffic and soil tillage without overturning it. In this method, which is defined as conservation tillage, the main criterion is that the field surface is covered with at least 30% plant residue. Reduced tillage forms the subgroup of conservation tillage. In this system, chisel or disc tools are generally used for primary tillage, harrow disc or cultivators are used for secondary tillage and seedbed preparation. In tillage application, no-tillage is done before planting after the previous crop harvest. Sowing is done directly on the previous crop stubble without seedbed preparation. In this research; no-tillage, reduced tillage and conventional tillage methods were tested in terms of plant distribution and plant emergence uniformity. The mean emergence date, emergence rate index and percentage of emergence values were calculated for that. In the research, the best mean emergence time value was determined in the reduced tillage method with 15.18 days, the highest emergence rate index and percentage of emergence value were determined in the conventional tillage method with 20.7 plants/day m^2 and 70.4%, respectively.

Keywords: Conventional tillage, Conservation tillage, Sustainable agriculture, No-tillage