

WEED COMPETITIVENESS OF WINTER AND SPRING WHEAT IN ORGANIC FARMING

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Abstract

Weed plants are one of the main factors limiting the level of agricultural yield. Damages are very important in organic farming now. Because of the availability of herbicides in the last 50 years, the natural competitiveness of field crops to weeds during breeding process and also VCU testing has been overlooked. Many control methods may be used by farmers to reduce weed populations, including harrowing and hoeing or increased seed rate. The simple and the cheapest solution will be use natural weed competitiveness ability of varieties. Our study is concentrated on the testing of methods of weed competitiveness evaluation. There were used some simple scoring methods (tuft shape, the length of the plant). These methods were compared with indirect methods based on LAI (SunScan Devices - Canopy Analysis Sytem) and soil coverage evaluation (multispectral image data analyzes by software MultiSpec W32). There were used spring and winter varieties of wheat. Small plot trials were grown on organic certified experimental area. In case of parameter LAI, there were positive correlations with the length of the plant in all stages of measuring (BBCH 33-36, 55, 69). When assessing ground cover vegetation in BBCH 29, there were possitive correlations with the length of plants in all stages of the evaluation (BBCH 33-36, 55, 69). After evaluating the characters contributing to the weed competitiveness of varieties, we didn't find variety with the highest weed competitiveness. But the results of our experiment shown that tools based on LAI and soil coverage measurements could be use for proposal of varieties with potential of better weed competitiveness.

Key words: organic farming, weed competitiveness, wheat
