Turkish Journal

of

Agriculture and Forestry

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Turkish Journal of Agriculture and Forestry

Critical Period of Weed Control in Three Winter Oilseed Rape (Brassica napus L.) Cultivars

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Abstract: Field experiments were carried out at the Agricultural Research Station, Faculty of Agriculture, University of Tabriz, in 2004-2005 and 2005-2006. Three winter oilseed rape cultivars (Okapi, Licord, and SLM046) with 12 weed interference durations were evaluated in a factorial experiment based on a randomized complete block design with 3 replications. The experiments consisted of 2 sets of treatments. In the first set, the crop was kept weed-free until the growth stages of 4-leaf, 8-leaf, stem elongation, flowering, and podding. In the second set, weeds were permitted to grow within the crop until the above-mentioned growth stages. Weedy and weed-free checks were also included in the study. Different weed interference durations and interaction of cultivar * year affected significantly the grain, oil, and biological yield, but not the percentage of oil. Minimum values of these traits were observed under the full weed-infestation condition. Maximum values for grain yield, oil and biological yield belonged to the weed free control and SLM046 cultivar in both years. Regression models showed that in order to prevent >10% grain and oil yield loss, canola must be kept weed free between the 6-leaf stage and initial flowering (47-110 DAE) and for biological yield between the 7-leaf stage and stem elongation (52-94 DAE).

Key Words: Biological yield, canola, critical period, grain yield, oil yield, weed interference

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Turk. J. Agric. For., **31**, (2007), 83-90.
Full text: pdf
Other articles published in the same issue: Turk. J. Agric. For.,vol.31,iss.2.