

Canola production under nitrogen fertilizer at different stages of plant growth in a crop rotation system

ABSTRACT

Nitrogen (N) fertilizer plays a vital role in enhancing canola yield. To assess the influence of nitrogen fertilizer at different stages of plant growth, an experiment was conducted at Research Farm of Agricultural Research Center in Rasht, located in Northern Iran in 2008. The experiment was laid out as a randomized complete block design with three replications. Treatments consisted of two varieties of canola (V1: Hyola, V2: PF7045.91) and five different schedules of nitrogen fertilizer application. The nitrogen treatments comprised of application of a total of 300 kg nitrogen using five different schedules of application: N1 (150 kg/ha at planting time and 150 kg/ha at flowering time), N2 (100 kg/ha at planting time, 100 kg/ha after rosette stage and 100 kg/ha at flowering time), N3 (150 kg/ha at planting time, 75 kg/ha 30 days after planting, 75 kg/ha at flowering time), N4 (75 kg/ha at planting time, 150 kg/ha after rosette stage and 75 kg/ha at flowering time), N5 (conventional schedule of nitrogen fertilizer in the region comprising of 75 kg/ha at planting time, 75 kg/ha 30 days after planting, 75 kg/ha after rosette stage and 75 kg/ha at flowering time). Results showed that the highest seed yield (3597 kg/ha) of canola was obtained from variety PF7054.91 and the best programme of nitrogen fertilizer was N4 where 75 kg N/ha was applied at the planting time, 150 kg N/ha after rosette growth stage and 75 N kg/ha of nitrogen at the flowering time. Production efficiency of canola crop can be enhanced in a crop rotation system in rice farms under agro-ecological conditions of Guilan, North of Iran.

Keyword: Canola; Nitrogen fertilizer; Stage of growth; Oil crop; Crop rotation