EFFECT OF TILLAGE SYSTEM AND MULCHING ON GROWTH AND YIELD COMPONENTS OF TWO RAPESEED CULTIVARS

(*Brassica napus* L.) UNDER DRY LAND FARMING.

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ABSTRACT

The experiment was conducted out at the field of college Agriculture and Forestry at two agricultural seasons 2009 – 2010 and 2010 – 2011 in clay loam soil. The aim of the present research is to study the effect of two varieties: RPG902 and Bristo, and two tillage systems: minimum tillage (at the depth 8 – 10 cm) using a disk harrow and convential tillage (at the depth 18 – 20 cm) using mold board plow, and three mulching levels: control (without mulching), mulching with 2000 and 4000 kg.ha^{-1} wheat straw, on the growth and yield of rapeseed. The experiment was laid out as factorial experiment in split – plot design with three replicates. The tillage system engaged the main – plots, whereas two varieties and mulching considered as sub – plots. The result of two seasons reveled that minimum tillage and mulching with wheat straw showed a greater water retention capacity with low bulk density and high soil porosity compared with convential tillage and without mulching treatments, this led to improved soil structure and plant growth. The following characters were significant surpass: no. siliqua / plant, 1000 seed wt. , seed yield and oil percentage affected by RPG902 variety. The previous characters were also surpass at the minimum tillage except for 1000 seed wt. . using mulching with wheat straw led to significant increase in most of characters studied. The highest no. Siliqua / plant, seed yield and oil percentage were achieved by interaction RPG902 variety with minimum tillage for both seasons, whereas interaction minimum tillage with straw mulching gave a significant increase in the No. siliqua / plant and seed yield for the first growing season only.

Key words: Varieties, tillage system, soil mulching, yield and yield component, rapeseed.