

Abstract

In order to increase production and to improve production efficiency, using of magnetic field is safe and low cost inputs approach. Magnetic field effects evaluated on the growth of chickpea in three conditions (laboratory, greenhouse and field). The Duration and intensity of the magnetic field on the properties of chick pea, germination tests were conducted in a laboratory in one experiment. Treatments were included: duration of seed exposure to the magnetic field at 5 levels (1 , 2 , 3 , 4 and 5 hours) and magnetic field intensity at two levels (100 and 150 mT) and control (normal seed).vegetative Growth of chick peas (delayed phase , exponential phase and linear phase), in completely randomise designe with 3 replications with water treatments in 4 levels (ordinary, distilled, ordinary and distilled water passed through a magnetic field of 650 mT) and efficiency of Pyridate herbicide on control of Common lambsquarters and pigweed weeds in 7 levels (zero , 12/6 , 5/12 , 25 , 50 , 75 and 100 percentage of the recommended dose) and irrigation water (ordinary water and ordinary water magnetic) in greenhouse was evaluated .

feild experiment in factorial ($2 \times 3 \times 4$), in a split plot with four doses of herbicide (0, 75, 100 and 125% of the recommended dose) horizontal bar, two levels of irrigation water (ordinary and passed through the 650 mT magnetic intensity) vertical strip, three seed (Normal, Seed 100 and 150 mT in 2 hours) as sub plots with 3 replications was conducted.

The final percentage of germination , length , wet weight , dry weight , water content and share partition to shoot and root improved by application of a magnetic field , and depletion the food manufacturer seeds compared to control ,was faster and better , leading to accelerated growth period in the germination stage. In green house, the magnetic 150 mT resulted in the production of dry matter in seeds and application of magnetic ordinary water had no effect on the delayed phase, but linear phase showed a positive response and two weed species in 75% of the recommended dosage and application magnetic water, show serious damage. In field conditions, passing seeds from the magnetic field caused increasing yeild of seed , straw and biological chickpea (22 , 39 and 35%respectively) ,and in passing water from magnetic field , there were 18 , 12 and 16 percent respectively. The interaction of the magnetic field on water and seed and simple effect of herbicide had no significant effect on the yield. The maximum yield of seed was observed in 75 % herbicide with in150 mT. Intraction of using herbicide and magnetic water had

maximum yields (334/6g / m²). Triple effect of herbicide and magnetic field (seed - water) was not significant on yield of seed and straw, but it was significant ($01/0 \leq p$) on biological yield and harvest index of chick pea. Application of a magnetic field of 150 mT of magnetic irrigation water and use the 75 or 100 % of recommended dose, resulting in optimal control of Common lambsquarters (in terms of chlorophyll fluorescence).also, in pigweed using magnetic water increases the chlorophyll fluorescence, but the use of ordinary water with seed of chick pea in 150 mT and 75 % dose of herbicide resulted in the most damage to pigweed chlorophyll fluorescence.

Key words: Magnetic water, magnetic seed, germination of chickpea, Floresence Chlorophile