**Title: The Effects of water type and nitrogen fertilizer rates interaction on the boll weight, dry accumulation and yield of cotton (Khordad variety) under saline soil**

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In order to investigate the effect of magnetic irrigation on the yield production, early maturity status and nitrogen fertilizer consumption in cotton (Khordad variety), a four-replicated combined analysis design arranged base on randomized complete block design with 12 treatments was carried out on a farm located in Faizabad, Mahvelat, Khorasan-Razavi province in the 2014 growing season. The factors included two types of irrigation (magnified and non-magnified) as the main factor (performed in two separate areas on the farm) and six nitrogen fertilizer rates (control, fertilizer recommendation, 15% less than the fertilizer recommendation, 30% lower than fertilizer recommendation, 15% more than the fertilizer recommendation and 30% more than the fertilizer recommendation) as the main factor. The results showed that magnified water was superior than non-magnified water in respect to leaf area index, dry matter accumulation and wet boll weight. Also, by increasing the nitrogen rate, all mentioned traits increased in both water types. The water type had significant effect on early maturing, but nitrogen fertilizer rate had no effect. Yield was higher in magnified water treatment for all fertilizer rates. Fertilizer use efficiency according to wet boll weight and total yield revealed that magnified water led to increase trend slope of wet boll weight and total yield against each unit change in fertilizer rate. This could led to more yield, which could be important to attain sustainable agriculture goals.

**Key Words:** Magnetic water, Cotton, Khordad variety, Nitrogen fertilizer, Salinity of the soil.