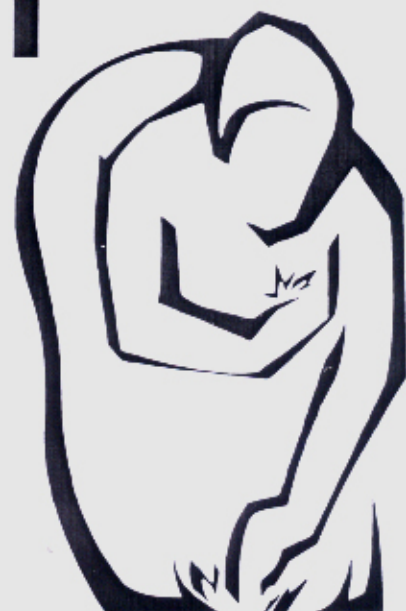




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BOOK OF ABSTRACTS



O2-01. Evaluation of soil solarization effects on weed population dynamics in saffron yield

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In order to evaluate effects of soil solarization on biomass as well as distribution pattern of weeds in saffron field, an experiment was conducted at the farm of Khorasan Agricultural and Natural Resources Research Center (Iran) during 2006 growing season. The experiment was laid out in a randomized complete block design with split plot arrangement. Levels of manure fertilizer were applied in main plots and four periods of solarization (0, 15, 30 and 45 days) devoted to sub plots. Systematic sampling method was employed inside of 2×5 (m²) lattice windows with the help of 1×1 (m²) quadrates at three times with an interval of 30 days from weed density and one stage from weed biomass. To calculate semi variance and kriging, GS+ software version 9 was used. Results showed that 30 and 45 days of solarization significantly reduced weed population. Weed population decreased significantly when manure fertilizer was applied. Application of manure fertilizer could significantly promote effects of solarization period on weeds biomass and their distribution pattern. It may be concluded that to achieve a successful weed management it is necessary to integrate manure application with longer period of solarization.

O2-02. Analysis of agronomic effective factors on yield of saffron agroecosystems in Southern Khorassan

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In order to study effective factors on production of Saffron, a zoning study was conducted in 2007 and 2008 in Birjand Province. The four locations, including Birjand, Khosf, Gazik and Mahmoei were selected as the main Saffron producing areas in Southern Khorassan, Iran. The actual data of agronomic managements were collected from 80 saffron farms, aged between 1 and 5 years. Results showed, that age of saffron farms, corm size, irrigation interval, and summer irrigation have a positive linear relation with yield. Age of saffron farms had the most pronounced effects on yield and was the most important component in all linear equations. With increasing age of farms, saffron yield was increased with a slope of 1.6 kg year⁻¹, reaching from 2.9 at first year to 7.3 kg ha⁻¹ at the fifth year. The most frequencies of longest irrigation intervals (24days) were observed for Birjand and Khosf,

whereas at Mahmoei and Gazik the shortest intervals (12days) were prevalent, which was contributed at their higher yields. The highest actual yield was observed for Mahmoei (5.2 kg ha⁻¹ between all farms with different ages), which is an indication of better farm management, such as applying more irrigation and manure, in comparison with other areas. A mean yield about 4-6 kg ha⁻¹ was most frequent between all farms, however some master farmers could achieved to yields above 7 kg ha⁻¹.

Keywords: age of farm, corm size, irrigation interval, manure, saffron, yield

O2-03. Effects of biofertilizer and inorganic fertilizer on generative growth and yield of saffron under high corm density

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An experiment was conducted under field condition to verify the potential of saffron (*Crocus sativus* L.) production, a bulbous perennial of Iridaceae family, with application of biofertilizer and inorganic fertilizer under high corm density, during the years of 2007 and 2008. A complete randomized block design in a factorial arrangement with three replications was used. Treatments included Nitroxin biofertilizer (a mixture of free-living nitrogen-fixing bacteria *Azospirillum* sp. /*Azotobacter* sp.), Dalfard fertilizer (a commercialized saffron fertilizer with 12% N from Urea and Nitrate sources, 8% P, 4% K and also Zn, Cu, Mg, Fe chelates) and control with five corm density (4, 6, 8, 10 and 12 t ha⁻¹). Results indicated that in general, saffron plants performed better with application of Dalfard. Application of Dalfard increased number of flowers per unit area, dried flower and stigma yield of saffron plants nearly 3 times in comparison with Nitroxin. There was also, a decreasing trend in plant criteria evaluated with increasing corm density from 8 t ha⁻¹. However, in the second year of experiment, the interaction between fertilizer and corm density significantly increased number of flowers per unit area and also dried flower and stigma yield. Application of Dalfard fertilizer with corm density of 4 and 8 t ha⁻¹ showed a considerable positive effect on plant criteria compared with Nitroxin. Preliminary results showed that Nitroxin was not effective for saffron. However additional and long term experiments are needed to determine the effectiveness of biofertilizer for this plant.

Keywords: *Crocus sativus* L., flower yield, organic and inorganic fertilizer