

### **The effects of intra-row and N fertilizer on the yield of two potato cultivars in Fars (Daryon).**

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Intra-row and N fertilizer are considered as major factors affecting potato yield. These factors were studied in two successive years, 1996-1997 in Daryon, a potato growing district in north east of Shiraz.

The experiments were conducted as split-split plot design. Two potato cultivars were as the main plot and, intra-row as sub-plot and N fertilizer as sub-sub plot.

The separately recorded data were germination date, percentage of germination, length of stems, number of stems per hill, time of flowering for each cultivar. At the end of growing season, yield was recorded and statistical analysis were performed for each year and for two successive years separately. Results indicate that effect of potato cultivar is significant in combined analysis at  $\alpha=1\%$  level. The cultivar Marfona, showed 28.71% increase in yield over Diamant. Combined analysis at  $\alpha=1\%$  indicated intra-row affect yield. Twenty cm spacing resulted in 23.31% increase in yield over 30 cm spacing. Additionally, N fertilizer affected yield. Combined analysis, at  $\alpha=5\%$  indicated more N fertilizer, 225 Kg/ha, resulted in 7.5% higher yield over the lower amount, 175 Kg/ha.

Combined analysis indicated the positive effect of the year at  $\alpha=1\%$  and, year $\times$ cultivar $\times$ N fertilizer at  $\alpha=5\%$  on the yield. However other interactions were not found to affect the yields significantly.

a) The effect of planting distances were significantly different. The best distance was 40 at 5% level.

b) The yield of two varieties was not significantly different.

However , *Golia*(A2) had more yield Than *Diegc*(A1).

c) Interaction between variety and planting distance was significant at 5% level

. The best result obtained from *Golia* variety with 45 cm distance (A2 B2).

The yield was 20639 t/h.