

# RESPONSE OF LINSEED (*LINUM USITATISSIMUM* L.) VARIETIES TO VARYING FERTILITY AND IRRIGATION LEVELS IN VERTISOLS OF SOUTH- EAST RAJASTHAN

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**Abstract:** A field experiment was conducted during *rabi* seasons of 2000-01 and 2001-02 at Agricultural Research Station, Umedganj, Kota to find out the suitable variety of linseed for fertility and irrigation. The experiment consisted of 24 treatment combinations, comprised of 2 varieties (Meera and Rashmi), 3 irrigation schedules (IW/CPE of 0.3, 0.5 and 0.7) kept in main plots and 4 fertility levels (0 kg N + 0 kg P<sub>2</sub>O<sub>5</sub> ha<sup>-1</sup>, 40 kg N + 20 kg P<sub>2</sub>O<sub>5</sub> ha<sup>-1</sup>, 80 kg N + 30 kg P<sub>2</sub>O<sub>5</sub> ha<sup>-1</sup> and 120 kg N + 40 kg P<sub>2</sub>O<sub>5</sub> ha<sup>-1</sup>) in sub plots in split plot design with 3 replications. Maximum seed yield, contents of N, protein and oil and oil yield was recorded in Meera as compared to Rashmi. Significantly higher seed yield (15.47 q/ha) was recorded at IW/CPE of 0.5 which was 20.11 % higher than IW/CPE of 0.3. Significantly and maximum higher oil yield (662 kg/ha) and protein content (11.98 %) was recorded at IW/CPE of 0.5 and per cent increased was 11 and 10.7 over IW/CPE of 0.3. The higher seed yield (17.48 q/ha) was recorded by application of 80 kg N + 30 kg P<sub>2</sub>O<sub>5</sub>/ha, which was 22.2 and 92.1 % higher over 80 kg N + 20 kg P<sub>2</sub>O<sub>5</sub>/ha and no fertilization. The oil content (42.80) and oil yield (753.60 kg ha<sup>-1</sup>) also significantly increased by 3.62 and 12.2, 26.82 and 115.70 per cent at 80 kg N + 30 kg P<sub>2</sub>O<sub>5</sub>/ha over 40 kg N + 20 kg P<sub>2</sub>O<sub>5</sub>/ha and 0 kg N + 0 kg P<sub>2</sub>O<sub>5</sub>/ha, respectively.

**Keywords:** N content, Oil yield, Protein content, Seed yield

## REFERENCES

- Alessi, J. and J.F. Power (1970). Influence of row spacing, irrigation and weedicide on dry load flax yield, quality and water use. *Agronomy Journal* 62 (5): 635-37.
- Ameta, V. L. (2002). Genetical and analysis of qualitative and quantitative traits in Linseed (*Linum usitatissimum* L.). Ph.D. Thesis, R.C.A. MPUAT, Udaipur.
- Anonymous (1968). Antibiotics from flax seed. *Am. Repr.* 18:5.
- Asthana, K. S. and U.K. Rai (1971). Linseed variety T-397 of U.P. (Uttar Pradesh) does well in Bihar. *Indian Farming* 21(5): 27-28.
- Chan, J.V. Bruce, V., and B. McDonald (1991). Reply to S. Cunnae, *American Journal of Clinical Nutrition* 53: 1230-1234.
- Dubey C.S. and J.P. Sharma (1980). Both fibers and oil from Linseed. *Apna Patra (Directorate of Extension Education, Sukhadia University, Udaipur)* 7 (9): 32-34.
- Forment, M.A., S.K. Cook and E.J. Booth (2000). Evaluation of Linseed cultivars in England and Scotland. *Test of Agrochemicals and cultivars* 21:27-28.
- GopalKrisna, Y.H., B.K. Ramchandrapa and H.V. Najappa (1996). Effect of scheduling irrigation at different stages on growth and yield of linseed varieties. *Karnataka Journal of Agricultural Sciences* 9 (3): 411-146.
- Green, A.G. and D.R. Marshal (1981). Variation for oil quality and quantity in linseed. *Australian Journal of Agricultural Research* 32:599-607.
- Nimje, P. M. and A. P. Gandhi (1994). Effect of stage of harvesting and nitrogen levels on oil quality of Linseed. *Journal of Oilseeds Research* 11 (2):141-151.
- Sharma J.C., S.S. Tomar, Chandra Prakash and R.K. Shivran (2012). Effect of Fertility Levels, Irrigation Schedules and Variety on NPK Content and its Uptake in Linseed (*Linum usitatissimum* L.). *Advances in Life Science I*: 40-42.
- Walsh R.J. (1965). Linseed oil protection for New York state thruway bridges. *Civ. Engg. ASCE*, PP.39-41.