

## EFFECT OF TILLAGE AND ORGANIC MULCHES ON CONTENT AND UPTAKE OF NUTRIENTS ON INDIAN MUSTARD IN VINDHYAN REGION OF EASTERN UTTAR PRADESH

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**Abstract:** A field experiment was conducted on conventional and reduced tillage with different organic mulches during 2012-13 to study the effect of tillage and organic mulches on content and uptake of nutrients on mustard crop in vindhyan region of eastern Uttar Pradesh at the Agronomy farm of Rajiv Gandhi South Campus, Barakachha (BHU), Mirzapur which is situated in *Vindhyan* region. Data revealed that the content and uptake in grain and stover of mustard crop increased significantly with implementation of reduced tillage and application of water hyacinth. The maximum content and uptake of N, P, K and S were found with application of water hyacinth @ 2 t per hectare under reduced tillage condition. Paddy straw mulch is the second highest treatment in content and uptake of macro nutrients in mustard crop. The increasing order of organic mulches was- No mulch < legume straw mulch < paddy straw mulch < water hyacinth regarding content and uptake of macro nutrients by mustard crop. The maximum content of nitrogen (3.40%) and (3.46%) among all nutrients was observed in mustard grain with application of water hyacinth under reduced tillage system. The similar trend was found in case of potassium uptake by stover of mustard crop (62.51 and 65.29 kg ha<sup>-1</sup>) under reduced tillage and water hyacinth, respectively.

**Keywords:** Soil, Mulching, Mustard, Content, Uptake

### REFERENCES

**Awasthi, U.D.; Dubey, A.P.; Tripathi, D.K.; Yadav, P.N.; Tripathi, A. K.; Kumar, Kaushal & Singh, Mahesh** (2009). Effect of sowing date and moisture conservation practice on growth and yield of Indian mustard (*Brassica juncea*) under scarce moisture condition. *Current Advances in Agricultural Sciences* **1**(1):8-10.

**Bonciarelli, F.; R. Archetti, G.; Farina & Battiselli A.** (1986). Effect of tillage practices on some chemical and physical soil properties. *Rivista di agronomia*. **20**: 172-177.

**Cepeda, M. A. & Gomez, B. L.** (2010). Response of canola (*Brassica napus*) at different conservation tillage in rainfed Purhepecha Plateau, Michoacan, Mexico. *ITEA*: **106**(4):282-293.

**Jackson, M.L.** (1973). Soil Chemical analysis, *Prentice Hall of India Ltd; New Delhi*, pp. 183-204.

**Katiyar, S. C.** (2001). Water use and yield of rainfed mustard as influenced by moisture conservation practices. *Indian Journal of Soil Conservation*; **29**(2):182-183.

**Kumar, S.D. & Lal, B. R.** (2012). Effect of mulching on crop production under rainfed condition: a review. *International Journal of Research in Chemistry and Environment* **2**(2):8-20.

**Quddus, M.A.** (1989). Weed infestation and performance of wheat as affected by tillage and weed control practices. *M.Sc. (Ag.) Thesis in Agron. Bangladesh Agril. Univ. Mymensingh*.

**Verma, C. K.; Yadav, D. D. & Kushwaha, K. P.** (2011). Effect of fertilizers and moisture conservation practices on mustard (*Brassica juncea* L.) under rainfed condition. *Crop Research (Hisar)*. *Current Advances in Agricultural Sciences*; **3** (2):108-111.

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