

## EFFECT OF MOISTURE CONSERVATION PRACTICES ON YIELD, QUALITY AND NUTRIENT UPTAKE OF INDIAN MUSTARD AND CHICKPEA INTERCROPPING SYSTEM UNDER RAINFED CONDITIONS

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**Abstract:** A field experiment was conducted during winter season 2018-19 and 2019-20 at the Research Farm, College of Agriculture, Gwalior (M.P.) to study the effect of moisture conservation practices on Indian mustard-chickpea intercropping under rainfed conditions. The treatments comprised of four intercropping systems and four moisture conservation practices which were evaluated in randomized block design (factorial) with three replications. The results revealed that the seed and straw yield (23.05 and 24.21q/ha) were found significantly higher in case of 1:4 and 2:4 intercropping systems, respectively, followed by chickpea grown alone. The mustard grown alone produced the lowest seed (13.54 q/ha) and straw (23.32 q/ha). Straw and weed mulching brought about equally higher seed and straw yields of mustard plus chickpea. This was followed by soil mulching. The lowest yields were obtained under no mulching treatment. The M+ ch (2:4) recorded maximum oil content (41.47%) and protein content (24.37%). This was closely followed by M+ ch (1:4) treatment (39.76 and 24.06%, respectively). Sole mustard or sole chickpea recorded the lowest values. The oil yield was found significantly maximum (529.12 kg/ha) under sole cropping of mustard, followed by M + ch (2:4) i.e. 334.76 kg/ha and then M + ch (1:4) i.e.183.41kg/ha. Similarly protein yield was found significantly highest under sole cropping of chickpea (519.04 kg/ha). This was followed by M + ch(1:4) i.e. 446.09 kg/ha and then M + ch (2:4) i.e.395.55 kg/ha. Sole mustard and sole chickpea recorded significantly higher nutrient uptake. This was followed by mustard + chickpea (1:4 row ratio) and then mustard + chickpea (2:4 row ratio). Weed mulching registered maximum N, P and K uptake by grain and straw of mustard and chickpea.

**Keywords:** Nutrient uptake, Quality, Intercropping, Mulching, Chickpea

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