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Evaluate the effect of mulches on soil temperature, soil moisture level and yield of capsicum (*Capsicum annuum*) under drip irrigation system

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■ **ABSTRACT :** Drip irrigation with mulches is the best suitable approach for conservation of moisture and for producing higher yield to fulfill the food demand in the country. Therefore, this experiment was laid out to evaluate the effect of mulches on soil temperature, soil moisture level and yield of capsicum (*Capsicum annum*) at Precision Farming Development Centre of Indira Gandhi Krishi Vishwavidyalya, Raipur. The daily soil temperature observation were taken from 15 January, 2010 to 03 March, 2011 at 7:30 AM and 2:00 PM. Soil thermometer was used for the measurement of soil temperature. The black plastic mulch (BPM), paddy straw mulch (PSM) and without mulch (WM) with four level of irrigation were taken to study the effect on growth and yield of capsicum. It is concluded from the study that at 7:30 AM the average soil temperature under black plastic mulch (BPM) was 1.29 and 1.93°C higher as compared to the paddy straw mlch (PSM) and without mulch (WM), respectively. At 2:00 PM under BPM the average soil temperature increased by 4.6 and 1.62 °C compared to under PSM and WM condition, respectively. At the same time the average soil temperature of under WM was 3.0°C more as compared to PSM condition. PSM kept the soil temperature less than WM. It was also found that the soil temperature under PSM was higher than the WM condition, when the atmospheric temperature was low in the morning. From the analysis it is concluded that BPM saved significantly higher soil moisture (49 %) as compared to paddy straw mulch at 15 cm soil depth, similarly BPM saved 44 per cent more soil moisture as compared to paddy straw mulch at 30 cm soil depth. BPM with 80 per cent irrigation level gave maximum yield 20802.40 kg/ha, followed by BPM+100 per cent irrigation level which gave 20000.00 kg/ha. Minimum yield was found in without mulch with control irrigation condition.

■ **KEY WORDS :** Mulch, Soil temperature, Soil moisture, Yield, Drip irrigation

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