

## Response of hot pepper (*Capsicum annuum* L.) cv. K2 to various sources of organic manures and foliar nutrients

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### ABSTRACT

A field experiment was conducted to study the impact of organic manures and foliar nutrients on the growth, yield and quality performance of hot pepper cv. K2. The experiment was laid out in a randomized block design with 14 treatments, each replicated thrice. The treatment schedule includes bulky organic manures viz., FYM @ 25t ha<sup>-1</sup>, vermicompost @ 5t ha<sup>-1</sup>, and concentrated oil cakes viz., Neem cake @ 500 kg ha<sup>-1</sup>, Groundnutcake @ 250 kg ha<sup>-1</sup>, foliar organic nutrients viz., panchakavya-3% ,EM(Effective microorganisms)- 1:1000 dilution, vermiwash -1:5 dilution and inorganic manures @ (160: 60: 30 kg ha<sup>-1</sup>) along with a control. The results revealed that application of inorganic fertilizers had a significant effect on the growth and yield of hot pepper. At the same time, appreciable variation was recorded with organic manures in the yield and quality of hot pepper. Among the various organic manures and foliar nutrients tested, application of Vermicompost @5t ha<sup>-1</sup> and groundnut cake @ 250kg ha<sup>-1</sup> along with foliar spray of panchakavya - 3% for 4 times recorded the maximum yield of hot pepper, which was comparable with the inorganic fertilizers. Regarding the quality attributes, the ascorbic acid (178.03 mg 100g<sup>-1</sup>) and Capsaicin content(0.82%) were maximum in FYM @25 t ha<sup>-1</sup>, neemcake@ 500 kg ha<sup>-1</sup> along with vermiwash - 1:5 dilution treatment.

**Key words :** Hot pepper, Organic manures, Yield, Quality.

**H**ot pepper or Chilli (*Capsicum annuum* L.) is extensively grown for its pungent fruits. They are indispensable adjunct in every house of the tropical part of the world as a spice. The pungent form of chilli earns an attractive export value in the foreign market and is most widely cultivated in India. Being a major spice, the emphasis now lies on improving the quality apart from increasing the productivity. Organic farming is associated with several advantages as it promotes quality and healthy management practices for soil and environment by avoiding chemical pollution through fertilizers and plant protection chemicals. It reduces the entry of toxic residues into the soil thereby promoting production of clean, quality foods. Hence, now the emphasis is being given to organic farming. The demand for organic spices is at increase every year. Therefore, there is a good scope for production and export of organic spices from India (John, 2002). Hence, an investigation was conducted to study the impact of some organic manures and foliar nutrients on the, growth, yield and quality of hot pepper, cv.K2.

### MATERIALS AND METHODS

A field experiment was conducted in a sandy loam soil at Sivapuri village, located 5 km away from Annamalai University during 2005-06. Hot pepper cv. K2, released from Kovilpatti is commercially cultivated in the chosen

agro climatic region for experimentation. The experiment was laid out in a randomized block design with 14 treatments, each replicated thrice. The treatment schedule includes bulky organic manures viz., FYM @ 25 t ha<sup>-1</sup>, Vermicompost (VC) @ 5t ha<sup>-1</sup> and concentrated oilcakes viz., Neemcake (NC) @ 500 kg ha<sup>-1</sup>, Groundnutcake (GC) @ (250 kg ha<sup>-1</sup>), foliar organic nutrients viz., Panchakavya (PK)-3%, EM (Effective microorganisms)- 1:1000 dilution, Vermiwash (VW)- 1:5 dilution and inorganic manures @ 160:60:30 kg ha<sup>-1</sup> along with a control. Bulky organic manures, concentrated cakes and foliar nutrients were applied in combinations. Bulky organic manures and oil cakes were applied as basal before transplanting. 4 sprays of the foliar nutrients were given at 20 days interval commencing from 30<sup>th</sup> day after transplanting.

### RESULTS AND DISCUSSION

Application of inorganic fertilizers had a significant effect on the growth and yield of hot pepper. Highest growth, yield attributes and the highest dry fruit yield (1887.57 kg ha<sup>-1</sup>) (Table.1) were obtained due to the application of inorganic fertilizers.

Regarding the organic manures, appreciable variation was recorded in the growth, yield and quality attributes. Among the various organic manures tested, application of Vermicompost @ 5t ha<sup>-1</sup> and Groundnutcake @ 250 kg ha<sup>-1</sup> along with Panchakavya -3% for 4 times (T<sub>12</sub>) recorded the highest plant height (97.90), maximum