



Research Paper

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Effect of organics on the physico-chemical properties of soil after bell pepper cropping under shade house condition

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Abstract : Field experiment was conducted to find out the effect of organics on the physico-chemical properties of soil after bell pepper cropping under shade house condition. Split plot design with three replications was adopted with two bell pepper varieties *viz.*, California Wonder (V₁) and Gangavati Local (V₂) as main plot treatments and nine completely organic nutrient sources along with recommended package of practice nutrients and only recommended inorganic nutrients sources were used as sub plot treatments (O₁ to O₁₁). The results revealed that after two cropping seasons, in general, there was improvement in the soil physico-chemical properties in all the treatments wherever organics were the components of the treatments. The soils of O₅ [basal applications of N equivalent (150 kg/ha) through FYM 50 per cent and poultry manure 50 %] was found most superior in improving the physico-chemical properties of the soil.

Key words : Physico-chemical properties of soil, Shade house condition, Bell pepper, Organic source of nutrient, Ecosystem

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Organic farming is not mere non-chemical agriculture, but it is a system integrating relations between soil, plant, water, soil micro flora and fauna. Organic farming helps in healthy soil, helps in proper energy flow in soil, crop, water environment systems, keeps biological life cycle alive and helps in sustaining considerable levels in yield (Lampkin, 1990). It is mainly based on principles of restoration of soil organic matter in the form of humus, increasing microbial population, skilful application of the factors contributing soil life and health and treating manures and compost in bio dynamic way (Pathak and Ram, 2003). These organic systems also lead to higher soil quality and more biological activity in soil than conventionally managed systems.

Bell pepper occupies a pride place among the vegetables in Indian Cuisine because of its delicacy, pleasant flavour with rich colours and high nutrient composition. Presently modern capsicum cultivation with a quest to harvest high yield, indiscriminate use of fertilizers and pesticides, has adversely affected physico-chemical properties of soil and

ecosystem with quality of capsicum. Hence, the present study was undertaken with objectives to know the response of bell pepper to organic source of nutrients with respect to physico-chemical properties of soil.

RESEARCH METHODS

The experiment was carried out at Agricultural Research Station, Gangavati during 2006 and 2007 in fixed plot. Gangavati is situated in Northern dry zone of Karnataka (Zone-3) which receives rains both from South-West and North-East monsoons and it comes under Tungabhadra command area. Rainfall of 357.4 mm and 176.4 mm was recorded during cropping season of 2006 and 2007, respectively. The soil of experimental site was medium black. The composite soil samples were collected from 0-25 cm depth before and after the experimentation and samples were subjected for analysis with respect to their physical and chemical properties.

The experiment was designed in split plot with two bell pepper varieties *viz.*, California Wonder and Gangavati Local