Agrotechnol 2014, 2:4
http://dx.doi.org/10.4172/2168-9881.S1.008

OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference on
Agricultural & Horticultural Sciences
Radisson Blu Plaza Hotel, Hyderabad, India February 03-05, 2014

Interactive effect of nutrients and wastewater on capsaicin content and fruit yield of chilli (*Capsaicin content* L.)

Saba Iqbal, Arif Inam, Akhtar Inam and Seema Sahay
Aligarh Muslim University, India

In recent years water shortages and environmental hazards of wastewater have promoted the formers to use of wastewater for irrigation especially for the cultivation of vegetable crops in urban areas. Chilli (*Capsicum annuum* L.) a member of nightshade family *Solonaceae* is one of the most widely grown vegetable in the world and is an important commercial vegetable and spice crop of India. This study was therefore conducted to observe the promotion of capsaicin content and yield of chilli (*Capsicum annuum* L.) by interactive effect of nitrogenous fertilizer and wastewater. Four different doses of nitrogen at the rate of 0, 30, 60 and 90 kg N/ha along with a constant dose of phosphorus at the rate of 60 kg P/ha and potassium at the rate of 50 kg K/ha were applied one day prior to sowing. Seedlings were irrigated with three levels of waters (GW, 50% WW and 100% WW). The data of growth and photosynthetic rate were recorded at 60 days after transplantation (DAT) while yield characteristics were determined at harvest. Capsaicin content was estimated in dried chilli powder. Results revealed that wastewater irrigation resulted significant increase in shoot, root fresh weight and dry weight, leaf area, net photosynthetic rate (P_N), stomatal conductance (g_s), transpiration rate, internal CO_2 and fruit yield. Among nitrogen treatments, N_{60} proved best and recorded highest capsaicin content while among interactions the lower nitrogen dose N_{30} with 100% WW proved optimum by giving at par result with combination of higher nitrogen treatment N_{60} with GW indicating that fertilizer rates could be lowered with the use of wastewater which can serve not only as the source of water but of nutrients also. However, regular monitoring of wastewater and soil for any build up of heavy metals is necessary. The physical and chemical parameters of wastewater were also tested and most of them were found to be well within the permissible limits as set by the Food and Agriculture Organization (FAO).

Biography

Saba Iqbal is a research scholar doing Ph.D. (Plant Physiology and Environmental Sciences) from Aligarh Muslim University, Aligarh, India.

saba.iqbal5067@gmail.com

Studies on heterosis and combining ability in tomato (*Solanum lycopersicum* L.)

Madhusmita Dishri
Orissa University of Agriculture and Technology, India

An experiment was carried out at the Research Farm, Department of Vegetable Science, Dr. Y S Parmar University of Horticulture and Forestry, Nauni, Solan (HP) during Kharif, 2011. The experiment was laid out in a Randomized Block Design (RBD) with three replications. Five diverse tomato lines were crossed in a diallel fashion (excluding reciprocals) to obtain ten cross combinations to study heterosis and combining ability for important horticultural traits. Significant differences were observed among parents and crosses for all the traits studied. The three hybrids Solan Vajr × EC-2791,UHFT-55 × EC-2798 and EC-2791 × EC-29414 best heterotic crosses for yield and component traits. The lines Solan Vajr, EC-2791 and UHFT-55 were good general combiners for fruit yield, number of fruits per cluster and average fruit weight (g) whereas, EC-29414 found to be good general combiner to earliness. Similarly, line Solan Vajr was good general combiner for longer harvest duration (days). The Cross Solan Vajr × EC-2791 followed by UHFT-55 × EC-2798 and EC-2791 × EC-29414 found to have high sca effects for most of the horticultural traits whereas, cross EC- 2791 × EC-2798 and UHFT-55 × EC-2791 showed negative sca (desirable) effects for number of seeds and for number of locules per fruit. The cross UHFT-55 × EC-2798 gave significant sca estimates in desirable direction for ascorbic acid contents. Hence, Solan Vajr × EC-2791 and EC-2791 × EC-29414 can be recommended for commercial cultivation after multi-location testing.

Biography

Madhusmita Dishri is pursuing her Ph.D. in Vegetable Science from Orissa University of Agriculture and Technology, Bhubaneswar, India. She completed her Master's degree at the age of 24 years from Dr Y S Parmar University of Horticulture and Forestry, Solan, Himachal Pradesh, India during the year 2012.

madhuouat@gmail.com