

## **Effect of elevated CO<sub>2</sub> and temperature on growth and yield contributing parameters of pea (*Pisum sativum* L.) crop**

**MEENAKUMARI<sup>1</sup>, S.C. VERMA<sup>2</sup> and S.K. BHARDWAJ<sup>1</sup>**

<sup>1</sup>*Department of Environmental Science, College of Forestry,*

<sup>2</sup>*Department of Entomology, College of Horticulture,*

*Dr. Y.S. Parmar University of Horticulture and Forestry Nauni – Solan (H. P.) 173230 India*

*\* Corresponding author email: meena.sankhyan@gmail.com*

### **ABSTRACT**

An experiment was conducted during 2014 and 2015 at Solan, Himachal Pradesh to study the effect of elevated CO<sub>2</sub> (eCO<sub>2</sub>) and temperature (eT) on growth and yield contributing parameters of pea (*Pisum sativum* L.) crop under four conditions of CO<sub>2</sub> and temperature in open top chambers and open natural condition. The study revealed that pea plants performed better under eCO<sub>2</sub>, with slight changes in development and yield attributing traits, depending on the cultivars. However, the beneficial direct impact of elevated CO<sub>2</sub> (eCO<sub>2</sub>) on crop yield can counteract by elevated temperature (eT). Pooled data for two years indicated that growth and yield attributing traits like plant height, days to first harvest of pods, harvest duration, fresh weight and biomass, number of pods per plant, pod length, pod girth, pod yield were improved under eCO<sub>2</sub>. However, responses of these attributes were negated with eT. Pea cultivars PB-89 performed well under eCO<sub>2</sub> and eT conditions as compared to Azad P-1.

**Key words:** Elevated CO<sub>2</sub>, elevated temperature, pea, yield, vegetables, OTC.