

## Research Article

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# Impact of elevation of atmospheric CO<sub>2</sub> on yield and biomass partitioning in rice and wheat

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**Summary**

To study the impacts of elevation of CO<sub>2</sub> on rice-wheat system, a pot culture experiment and a field experiment were undertaken. The pot culture experiment was conducted in open top chambers (OTCs) with surface soils collected from a typic haplustept (IARI, New Delhi). Rice and wheat were grown as test crops at ambient (approx. 370 μ mol mol<sup>-1</sup>) and elevated (600±50 μ mol mol<sup>-1</sup>) levels of atmospheric CO<sub>2</sub>. Total biomass yield was increased by 32.26 and 33.83 per cent as a result of elevation of CO<sub>2</sub> concentration in the micro climate of rice and wheat, respectively. Various plant parts differed with respect to their relative gain in yield and the relative gains in biomass of different plant parts on exposure to elevated CO<sub>2</sub> were in the order of: Rice: Grain (48.11) > Leaves (43.97) > roots (34.95) > stem (18.80) and Wheat: Root (70.54) > Leaves (42.50) > grain (35.39) > stem (21.00). At all stages of crop growth, exposure to higher CO<sub>2</sub> in atmosphere increased the preferential partitioning of carbon to roots both in rice and wheat.

**Key words :** OTC, FACE, Elevated CO<sub>2</sub>, Rice-wheat**Co-authors :****T. J. Purakayastha and Deo Pal**, Indian Agricultural Research Institute, **New Delhi, India****How to cite this article :** Thulasi, V., Purakayastha, T.J. and Pal, Deo (2020). Impact of elevation of atmospheric CO<sub>2</sub> on yield and biomass partitioning in rice and wheat. *Asian J. Soil Sci.*, **15**(1): 59-64 : DOI : 10.15740/HAS/AJSS/15.1/59-64. Copyright © 2020: Hind Agri-Horticultural Society.