Entry No. IRRC-0323

Category	: International Rice Research Conference
Select Theme	: Climate change and environmental sustainability
Endorsement email	:
Keyword 1	: Soil, water, and air pollution
Keyword 2	: Climate smart agriculture
Keyword 3	: Ecosystem services
Title of Entry	: Methane, Nitrous oxide, and Carbon dioxide emission by short duration drought tolerant rice varieties under wet seeding system
Presenting author	: B.Sreedevi
Presenting author email	: sreedevi.palakolanu@gmail.com
Co author 1	:
Co author 2	:
Affiliation presenting author	: ICAR-Indian Institute of Rice Research, Hyderabad,India
Affiliation 1	:
Affiliation 2	:
Select only one type of presentation	: 3-5 minute flash talk
Abstract	: Global climate change is threatening the food security of developing countries, and the biggest challenge to be addressed by the agriculture sector, as about 1/3 of GHG emission is attributed to agriculture and land use change globally. Rice provides the staple food for over 60% of world population. In India, rice production is also an important source of green house gas emission (Carbon dioxide (Co2) Methane (CH4) and nitrous oxide (N2O), responsible for 3 - 8 times the emission of wheat. Adoption of other rice cropping techniques like wet and /dry direct seeding, could help increase grain yield, save water and mitigate green house gas emission. The extent of GHG emissions depends on system of crop cultivation, season, soil physical and chemical properties, soil organisms, water and nutrient management. To develop strategies to mitigate climate change, primarily it is essential to identify the sources of emissions from various agriculture practices at crop level. Among the various carbon inputs, use of inorganic nitrogen fertilizer contributes majorly for total emission.With the objective of investigating the influence of different nitrogen doses (100,120,140kg N/ha), short period drought stress on GHG emission by different short duration high yielding varieties IR64, DRRDhan42, DRRDhan44, DRRDhan46) during two crop seasons of 2016-17, the experiment was conducted in replicated split plot design. The nitrogen was supplied crop as Urea in three splits (half at basal, ¼ each at maximum tillering and Panicle initiation stage). Drought stress was imposed at flowering stage for 7 days. The results of three Nitrogen doses (100,120,140 kg/ha) from vegetative to maturity stage of the crop showed that, all the three GHG flux values increased with increase in nitrogen dose significantly. The increase in N dose increased the growth and grain yield also significantly .The tested varieties showed no considerable difference in CH4, N2O and CO2 emissions.

However, relatively low CO2 flux was recorded by DRRDhan44 fb IR64. The N2O flux was lowest with IR 64 and higher with DRRDhan42, DRRDhan44 and DRRDhan46. The CH4 flux was lower with DRRDhan42 compared to others. Hence, nitrogen source need amendments fron current practices to reduce emission levels

Read Less»

Uploaded Files »

No files found.