

Answer to the Lok Sabha unstarred Question D.No.265

Whether it is true that a research on rice has been conducted to combat climate change;

- Yes

If so, details thereof;

Research on the following subjects was taken up on rice

- Modelling studies to assess the climate change impact on yields
- Screening varieties and improving management practices for developing adaptation strategies
- Agronomic practices to reduce green house gas emissions

Whether the said research has been conducted in many parts of the country;

- Yes, The research has been conducted at IARI, New Delhi, CRIDA, Hyderabad, TNAU, Coimbatore, CRRRI, Cuttack and DRR, Hyderabad

If so, the outcome there of; and

Modelling studies to assess the impact of climate change on rice yields

- INFO CROP model output reveals that there will be likely reduction in rice production (2.8 to 9.3 %) in Tamil Nadu due to climate change by 2020
- The impact analysis coupled with INFO CROP and HadCM3 A2a scenario reveals that the kharif rice yield projected to reduce by 3.4% in Rangareddy district, 1.9% in East Godavari district and 0.3% in Guntur district of Andhra Pradesh by 2020
- INFO CROP model study showed that by 2030 rice yields in Haryana, Punjab, UP and Bihar are likely to reduce between 3 to 8%.

Experimental studies under elevated CO2 chambers and temperature gradient tunnels

- Rise in atmospheric temperature (+1-3°C) is expected to reduce the rice yields substantially. The reduction in biomass and yield was mainly due to marked reduction in the yield attributes.
- Elevated CO2 level (560ppm) in the air enhanced the biomass and economic yield of rice due to increase in photosynthetic rate and yield attributes of rice crop.
- Quality of the rice especially protein content in rice grain is expected to reduce under elevated CO2 condition at all nitrogen levels
- Studies on the impact of climate change on rice phenology and yield under three different dates of sowing (early, normal and late) with same genotype at 8 locations have shown advancement of the growth stage by 7 days with higher yield under early sowing as compared to that of normal sowing.

Screening varieties and improving management practices for developing adaptation to climate vulnerability

- In Tamilnadu, cultivars for high temperature tolerance were screened (ADT - 36 ,ADT – 37, ADT – 38, ADT – 39, ADT – 43, CO 43, CO 48, Zeeraga samba, White ponni , CR 1009 and CORH -3)
- 60 rice varieties growing nationwide were screened for drought tolerant and early recovery during vegetative stage
- Rice varieties viz., CR 143-2-2, RR 2-6 and IET 18817 were reported to be drought tolerant at reproductive stage

Agronomic practices to reduce green house gas emissions

- Emission of GHG can be reduced with improved nutrient and water management and cultural practices in rice crop.
- Aerobic and direct seeded rice and SRI cultivation methods expected to help in reducing the GHG emissions from rice and saves water
- Application of the combination of Azolla and cyanobacterial reduce methane emission in rice fields

Whether the government has asked the scientists to prepare a document in this regard; and

- NA

If so the details thereof

- NA