

Category	: International Rice Research Conference
Select Theme	: Climate change and environmental sustainability
Endorsement email	:
Keyword 1	: Mitigation of climate change
Keyword 2	: Climate smart agriculture
Keyword 3	: Crop residue management
Title of Entry	: Enhancing productivity through climate smart agriculture in rice-based cropping system of Eastern Uttar Pradesh, India
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Select only one type of presentation	: 15 minute oral presentation
Abstract	: Climate smart agricultural practices play a vital role in improving, resource use efficiency, productivity profitability and stability of the rice based cropping systems. Conservation agriculture (CA) practices evaluated in rice based cropping system in Eastern Uttar Pradesh; India revealed that direct seeded rice (DSR) with residue retention gave higher yield, profit and early maturity avoiding terminal heat stress in wheat. Zero tillage (ZT) DSR with anchored residue 40 cm & application of Pendimethalin 1000 g ha <sup>-1</sup> (pre-em) fb azimsulfuron 35 g ha <sup>-1</sup> (POE) +one HW at 40 DAS was effective in minimising weed density and enhancing yield (25.6 %) and profit over reduced till DSR . ZT DSR with 150 kg N ha <sup>-1</sup> applied as 33.3 % at 15-20 DAS + 33.3 % at active tillering stage + 33.3 % at panicle initiation had lower weed infestation, higher yields and net return. ZT DSR with anchored wheat residue (30 cm) followed by ZT wheat with anchored rice residue (30 cm) + 3 t/ha loose residue was effective in achieving better crop growth, lower weed infestation, higher nutrient uptake, productivity and profitability of rice & wheat crops. ZT DSR–ZT wheat (residue retention) with application of bispyribac 25 g ha <sup>-1</sup> + azimsulfuron 35 g ha <sup>-1</sup> at 15-20 DAS in rice and clodinafop 60g ha <sup>-1</sup> + carfentrazone 20g ha <sup>-1</sup> at 30-35 DAS in wheat was effective for weed management, higher yield, system productivity and profitability. ZT DSR–ZT wheat with residue retention and nutrient application based on SSNM - Rice-Wheat Crop Manager Recommendation gave better crop growth, lower weed population, efficient nutrient management and higher yield, system productivity and profitability. ZT DSR- ZT wheat ZT mungbean with residue resulted 16.8 % higher rice yield and 25.6 % higher rice

system yield equivalent and climate mitigation over conventional tilled practice (puddled transplanted rice - tilled wheat without residue) in irrigated rice-wheat ecosystem.. Diversification and inclusion of pulses (lentil, gram, pea, lathyrus, pigeon pea and mungbean) through zero till / raised bed planting increased the yield equivalent and net return over conventional rice-wheat system.

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