

**Entry No. IRRC-0204**

Category	: International Rice Research Conference
Select Theme	: Sustainable and equitable farming systems
Endorsement email	:
Keyword 1	: Sustainable management practices
Keyword 2	: Sustainable intensification
Keyword 3	:
Title of Entry	: Zero Tilled Rabi Crops Following Aman rice Enhances Productivity of Saline Land
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Select only one type of presentation	: 15 minute oral presentation
Abstract	: Cropping intensity of the coastal area of Bangladesh is far below those achieved elsewhere of the country. The productivity of the salt affected area can be increased by sowing dry season (rabi) crops in the moist soil between the stubble of aman rice without tilling the land. However, the options for rabi cropping without tillage or with minimum tillage need to be evaluated in farmers' fields. Therefore, an on-farm experiment was conducted over two years in three levels of saline soils (up to 7, 11 and 13 dS m <sup>-1</sup> ) in Satkhira district, Bangladesh to compare the productivity of the cropping patterns-i) Transplant (T.) aman-Zero tilled

(ZT) dibbled sunflower, ii) T. aman-ZT row sown wheat, iii) T. aman-Strip tilled wheat, iv) T. Aman-ZT row sown spinach, v) T. aman-ZT broadcast spinach and vi) T. aman-Fallow (current system). The electrical conductivity of the rabi cropped land were lower by about 2 dS m<sup>-1</sup> at the later stage of crops than those of fallow plots. Rabi crops were affected by unusual heavy rainfall of 137 mm during 23-26 February in 2015-16. Spinach sown either by row or broadcast following T. aman rice produced significantly higher rice equivalent yield (REY) than all other cropping patterns which earned 98 to 302 % and 75 to 246 % net return compared to existing T. aman-Fallow in 2014-15. The REY of T. Aman –ZT dibbled sunflower followed the T. aman-ZT row sown spinach and T. aman-ZT broadcast spinach but significantly higher than T. aman-Wheat. The net return of the cropping patterns in an as usual year (2014-15) followed the trend of T. aman-ZT row sown spinach >T. aman-ZT broadcast spinach >T. aman-ZT dibbled sunflower >T. aman-Strip tilled wheat > T. aman-ZT row sown wheat >T.aman-Fallow. In the unusual rain affected risk year, only T. aman-Spinach was profitable and found technically better adaptation option. There is a need to examine the long term effect of minimum and zero tilled rabi crops following aman rice through a farmers' participatory approach in diverse situations of saline ecosystem. Keywords: Sustainable management practices, sustainable intensification

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