

PRACTICE ABSTRACT n° 18

Author: FoodLAND team at the University of Mekelle

Precision Harvesting Systems prototype Ethiopia



Teff (*Eragrostis tef*) is believed to have been domesticated in ancient Axum, northern Ethiopian highlands, where its centers of origin and diversity are located in our modern times. An innovative technological research was conducted to label the highest probable yield goals for teff in its center of origin, around Axum, Tigray. A factorial arrangement of randomized complete block design (RCBD) experiment was carried out involving a missing plot trial approach involving 210 farmers across the districts (Debrebirhan, Hatsebo and Lesaliso) with treatments inputs including using tractor ploughs vs oxen ploughs, row planting vs broadcasting, using herbicides vs manual weeding, using mechanized harvesting vs manual harvesting, and using thresher vs oxen threshing on open ground.

Our results indicated that the participant group of farmers would fall in a low management intensity (teff yield <1.0t/ha), improving management intensity (teff yield 1.0-1.6 t/ha), intermediate management intensity (teff yield, 1.6-2.0 t/ha), transformative management intensity (teff yield 2.0-3.0 t/ha), or

high management intensity (teff yield, >3.0 t/ha). Thus, our missing input trial approach found that about 38.09% of the farmers fall in low intensity, 35.24% of farmers in slightly improved management, 13.33% of farmers in intermediate intensity, 10% in transformative intensity and 2.85% of the farmers are already achieving approaching towards the highest yield goal.

Teff farming in the study area can be a viable commercial farming at its center origin and diversity indicating to a focus that the rest of the world could have sufficient reasons to Teff of ancient Axum in Tigray Ethiopia.

