

Cassava planting method trials in NW Cambodia - yield and economic analyses (ACIAR Project ASEM/2013/003)

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Farmers in Northwest Cambodia plant cassava by different methods to their counterparts in Eastern Cambodia. This study investigates the effect that planting method has on yield and profitability of cassava and the potential for more sustainable farming methods in this region. An experiment was conducted at two on-farm sites in the neighbouring Northwest provinces of Battambang (Samlout District) and Pailin, over a period of two years, with a third year of research currently underway. Soil preparation of ploughed and hilled up farmer practice was compared with minimum till (ploughed no hills/flat), and no-till (not ploughed, flat). Furthermore, a split plot of planting method of vertical stake placement vs horizontal stake planting was evaluated. At Samlout in 2017-18, the highest yields were attained by the hilled up treatments (18-22 t/ha, $P < 0.05$), regardless of stake placement, compared to minimum till and no till treatments (5-8 t/ha). Similar results were achieved in 2018-19 at that site, where the hilled up vertical stake treatment yielded significantly higher (22 t/ha $P < 0.05$) than all other treatments (< 15 t/ha). Results were less conclusive at Pailin with no significant differences between treatments in 2017-18. In 2018-19 at Pailin, the hilled up horizontal stake treatment yielded almost twice as much as no till horizontal, and all treatments except for no till vertical and minimum till horizontal were significantly different to no till horizontal ($P < 0.05$). Hilled up treatments provided the highest gross margin returns at both sites in 2017-18 year, yet in the 2018-19 harvest no treatments gave positive returns due to low yields and a lower commodity value than the previous season. This study raises questions with regards to the sustainability of cassava with high break-even yields required to make a profit. Further research will investigate the

environmental cost attributed to these farming practices, evaluating rainfall infiltration, soil runoff and sediment loss.