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Introduction

Cassava (*Manihot esculenta* Crantz) is considered one of the most important economic crops in the Philippines. However, cassava is no longer a staple food for Filipinos as it is used to be, but it is an important cash crop for upland small and large farmers. It is widely cultivated in many areas in the Philippines thus it is important crop to be integrated into the conservation agriculture production system (CAPS). Nearly all the harvested roots are now processed into dry chips and pellets for export as animal feed, as well as into starch, both for domestic and international use. Major production problems are declining soil fertility, soil erosion and the strong fluctuation of the cassava root prices. Identification of suitable high yielding cassava varieties is equally important in our on CAPS. In the context of CAPS, total aboveground biomass is one of the important parameters in selecting appropriate variety. Thus we are evaluating cassava varieties that have high both in root and above ground biomass that can be used as mulch for the subsequent crops.

Objective

To identify cassava cultivar with high root yield and aboveground biomass to be used in Conservation Agriculture Production Systems (CAPS).

Methodology

Seven cassava varieties were collected and evaluated on a sloping acid upland in Claveria, Misamis Oriental. We were looking at which among these 7 varieties produce high root yields and aboveground biomass. Stalks were cut at two nodes. One node was buried on the ground at 0.5m apart at the furrows spaced at one meter apart. Before planting, P_2O_5 and K_2O both at the rate of 45 kg per hectare were applied at basal. Lime was also applied at the rate of 3 tons per hectare before furrowing. Nitrogen in the form of Urea was applied at 30 and 60 days after planting (DAP). Hand weeding was done at 15 and 30 DAP and subsequent weeding was done as needed.

Results

The relationship between total fresh weight of the aboveground biomass and total fresh root yields is presented in Figure 2. Rayong 72 cultivar from Thailand yielded highest both in fresh roots and aboveground biomass of 65 and 106 tons per hectare, respectively. This was followed by VISCA 4 which was bred from Visayas State University (VSU) in the Philippines. Other promising varieties were Lakan and local yellow gold. The poor performing varieties were local varieties such as local yellow and local white. The same trend we can see in the root yield (Figure 3). With the yield of 65 tons fresh roots at P2.5 per kilo, farmers can earn as much as P162,500.00. The amount of 106 tons fresh biomass has implication on land management particularly on managing the biomass before planting the subsequent crop as well as its implication on soil fertility and conservation.

Conclusion

Rayong 72, Visca 4, Local dwarf yellow and Local yellow gold were promising cultivars of cassava to be included in CAPS since it performs well in acid upland soil of Claveria which yielded high both in aboveground biomass and roots.



Figure 1. Different photos of Cassava varieties grown in acid sloping land. Claveria, Misamis Oriental, Philippines.

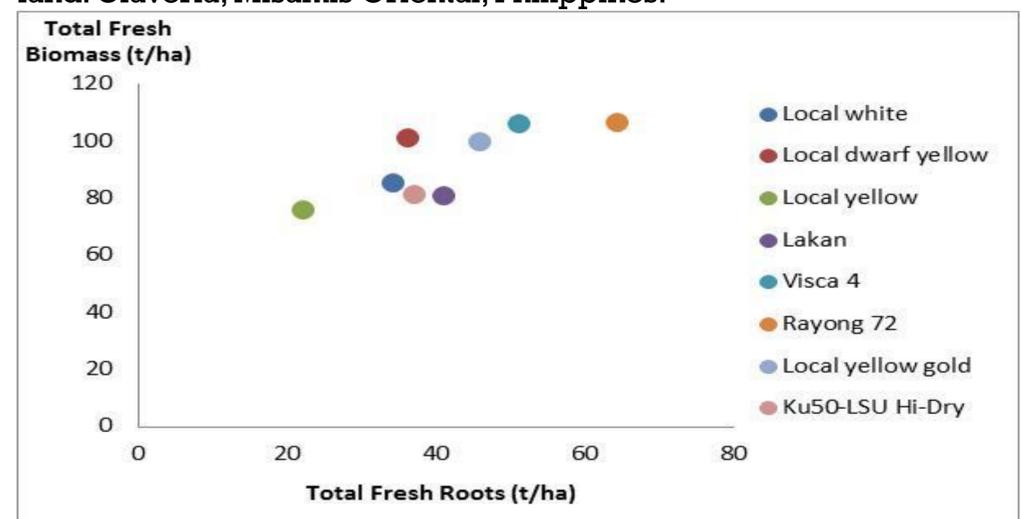


Figure 2. Relationship between total fresh weight and dried chips of different Cassava varieties. Claveria, Misamis Oriental, Philippines

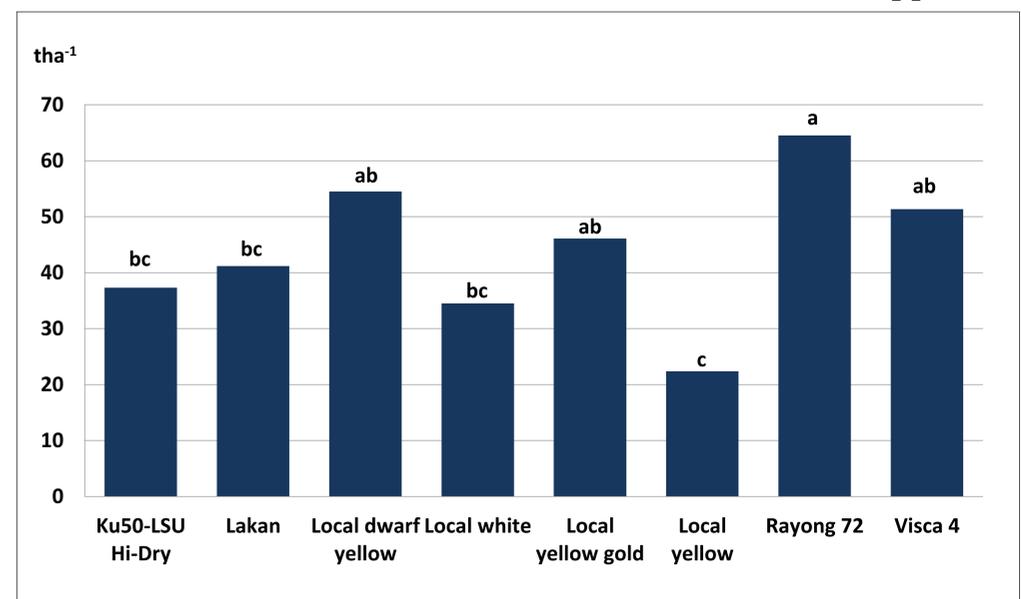


Figure 3. Root yield of Cassava varieties evaluated for CAPS. Claveria, Misamis Oriental, Philippines