

# MECHANIZATION OF CASSAVA PRODUCTION

## A STUDY TO DETERMINE THE SUITABILITY OF PRESENT CASSAVA CULTIVARS FOR MECHANICAL HARVESTING

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### SUMMARY

The rooting patterns of four commonly grown selected cassava cultivars (60444, 60447, 60506 and 44086) in Nigeria were studied. There was variation between cultivars in root weight, depth of penetration, number of roots per stand, and root length. Large numbers of correlations and linear regressions between cultivars have been computed. The rooting patterns of none of these cultivars allow easy mechanical harvesting. An attempt is advocated to select new cultivars whose roots can be harvested cheaply and effectively.

### RESUME

La structure des racines de quatre cultivars de cassava (60444, 60447, 60506 et 44086) généralement cultivés au Nigéria ont été exposées. Les cultivars varient selon le poids de la racine, la profondeur de la pénétration, le nombre de racines par pied et la longueur des racines. Un nombre important de corrélations et de régressions linéaires entre les variétés ont été estimées. Aucun des cultivars ne présente une forme d'enracinement permettant une récolte mécanisée réalisable dans de bonnes conditions. L'accent a été mis sur la nécessité de sélectionner de nouveaux cultivars dont on peut récolter les racines aisément et à peu de frais.

### RESUMEN

Se estudiaron los patrones de enraizamiento de cuatro cultivares selectos (60444, 60447, 60506 y 44086), comunes en Nigeria. Hubo variación entre cultivares en cuanto a peso de raíces, profundidad de penetración, número de raíces por mata y longitud de raíces. Se computaron un gran número de correlaciones y regresiones lineales entre variedades. Los patrones de enraizamiento de ninguno de estos cultivares permiten una cosecha mecánica fácil. Se hacen intentos para seleccionar nuevos cultivares cuyas raíces puedan ser cosechadas económica y efectivamente.

### REVIEW

Cassava (*Manihot esculenta* Crantz) is widely used in tropical countries as a source of carbohydrates for both humans and livestock. FAO<sup>2</sup> estimated that in 1971 Nigeria produced 7.3 million metric tons of cassava which was grown on over one million hectares, making the country the second largest producer in Africa. Most of Nigeria's production is by peasant farmers. Two factors prevent there being much increase in production: (1) high labour requirement at harvest accounts for over 40 per cent of the total costs of production and (2) peasant methods of processing the roots for food are laborious and time consuming.

The development by the Nigerian Institute for Industrial Research of an integrated cassava processing plant which processes cassava roots into gari has opened the way for large scale production and processing. Thus, cassava may shortly become an important commercial crop in Nigeria.

An integrated plant is also being operated in Gambia. This processes 45 metric tons of raw cassava roots daily. With the present average yield levels in Nigeria, such a plant would require the production from three hectares daily at full capacity, approximately 1000 hectares of production per year. This would most conveniently be produced by a commercial operation and mechanized harvesting.

Activities are already under way in Nigeria to establish processing facilities which emphasize the urgency for the development of mechanical harvesting equipment.

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