

SOME PHYSIOLOGICAL ASPECTS OF YIELD IN CASSAVA (*MANIHOT ESCULENTA* Crantz)

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SUMMARY

The importance of dry matter production and factors affecting it, such as leaf area index and leaf inclination, are discussed. The relative importance of dry matter production and its distribution in relation particularly to spacing are reviewed.

The author suggests a plant ideotype based on these observations.

RESUME

L'importance de la production de la matière sèche et les facteurs qui l'affectent, tels que l'index de la zone foliaire et l'inclinaison des feuilles ont été abordés. L'importance relative de la production de la matière sèche et de sa distribution surtout par rapport à l'espacement ont été passés en revue.

L'auteur propose un idéotype végétal fondé sur ces observations.

RESUMEN

Se discute la importancia de la producción de materia seca y los factores que la afectan, tales como el índice de área foliar y la inclinación de la hoja. Se revisa la importancia relativa de la producción de materia seca ya su distribución en relación, particularmente, con el espaciamiento.

El autor sugiere una planta ideotipo basado en esas observaciones.

INTRODUCTION

The physiology of *Manihot esculenta* Crantz has received little study. In this paper I shall endeavour to assess some of the physiological variation present within the species that may be used to produce higher yielding types.

For high productivity of carbohydrate it is necessary to have (a) high dry matter production and (b) favourable distribution of dry matter to the economically useful root tubers. Harvest index, the economic yield divided by total yield, can be used to describe this distribution.

MATERIALS AND METHODS

a) CMC 84, a high yielding cultivar, was grown at 1 x 1m spacing, and observations on its growth were taken at seven intervals, up to sixteen months after planting.

b) Cultivars CMC 84, CMC 39 and Llanera were planted at plant populations ranging from 3,000 to 30,000 plants/ha using a systematic design of the type described by Bleasdale². Harvests for fresh yield, dry yield and total dry matter were taken at three, five, seven and eleven months. All results use a three point moving average.

c) Four cultivars, M Colombia 22, CMC 39, M Colombia 1080 and M Mexico 12, were also planted in the systematic spacing design.

Leaf area index was estimated using the grid method and interception of total radiation was measured using Monteith type solarimeters four to five months after planting. Leaf angle was estimated by measuring the angle between the midrib of the central lobe and the horizontal.

d) Eighteen cultivars of different gross morphology were compared in an unreplicated trial; Llanera was repeated three times as a check, making a total of 20 plots. Plant population was 20,000/ha and harvests were taken at approximately 120, 180, 240, and 360 days. Data were corrected to the exact date.

The other trials referred to are described in the text.

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