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The interactions between cassava mealybug (*Phenacoccus manihoti* Mat.-Ferr.) populations and cassava (*Manihot esculenta* Crantz) as influenced by weather.

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presented by
FRITZ SCHULTHESS
dipl. Ing. Agr. ETH
born 27 March 1953
citizen of Busswil, Bern

accepted on the recommendation of
Prof. V. Delucchi, examiner
Prof. A.P. Gutierrez, co-examiner
Dr. J.U. Baumgärtner, co-examiner

SUMMARY

A high yielding profusely branching cassava cultivar from the International Institute of Tropical Agriculture was planted four times between 1982 and 1985 at different times of the year to study source development and dry matter allocation. The climatic conditions of the subhumid tropics are characterized by a four months dry season that greatly affects the growth dynamics of the crop. The highest yield (58 t dry matter ha⁻¹) and highest short term crop growth rates (380 g dry matter week⁻¹) were obtained in the 1983/84 growing season that was marked by a relatively short dry season. Generally, maximum crop growth rates were far above the values reported in the literature and occurred in each field at the highest leaf area index. Growth rates were markedly reduced during long drought stress periods presumably as a result of leaf fall and concurrent reduced leaf production, with stem and tuber growth rates being even negative in the 1985/86 dry season. Net assimilation rate decreased sharply after reaching a maximum five months after planting and reached a minimum after one year.

The distribution of current assimilates to tubers indicated a strong competition between roots and the top. Priority was given to the top before tuber bulking started and at the time of branching only. It was concluded that the initiation of branching was linked to a surplus of assimilates, i.e. photosynthetic capacity of the top and limited sink capacity of the tubers.