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Experiments on the Vegetative Cycle and Yield Variation of Dioscorea alata by Successive Monthly Plantings and One-Year Aged Seed Tuber Planting

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ABSTRACT

Data from three years of plantings of D. alata (cv. Tahiti and Belep) made with tubers harvested in January, and stored at 18°C, 80% relative humidity, lead to the following conclusions.

Germination showed a dormancy response. In storage, bulb formation occurred after 12 months. In the field, it seemed linked to loss of apical dominance. Once a juvenile stage was completed, flowering appeared to be controlled by thermo-photoperiod. Stem number increased with age for one cultivar, but not the other. Tuber number per plant increased with age. Tuber weight was linked with length of the active vegetative cycle, the duration being maximum for the January planting and minimum for the November one. The biological cycle between mother and daughter tuber germination is maximum for the December planting, minimum for the September one.

Year old tubers of D. alata cv. Pacala stored under the conditions described above gave greater yields than month-old tubers. Their vegetative development, though initially weaker, benefited earlier from good growth conditions due to rapid tuber germination. Older tubers also produced greater stem and tuber numbers per plant.