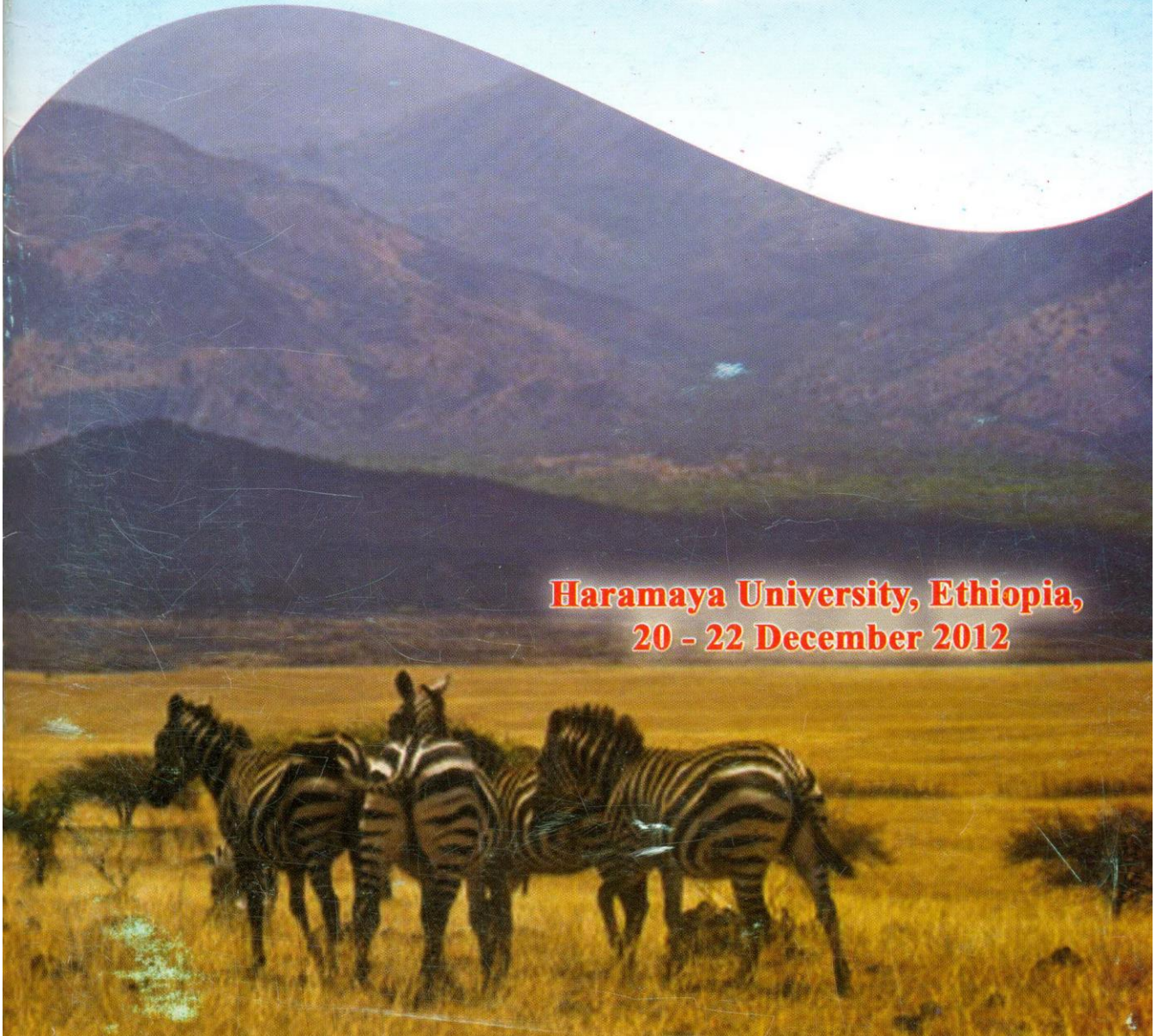




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Sexual and asexual reproduction of enset as tools to increase agro-biodiversity and agricultural productivity

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Abstract

Enset is a drought-tolerant, high-yielding and multi-purpose staple crop, grown in parts of Ethiopia since ancient times. There are several hundred landraces (clones), and six cultivars are registered and nationally released. The aims of this study were to enhance the knowledge of enset seed germination and early growth and to investigate the efficiency of traditional vegetative propagation methods. Seeds from 11 plants were tested for germination. Circa 25 % (min-max: 5-50) germinated within 12 weeks on moist sand. Newly germinated seedlings grew well in local soil (WSU) and manure. These seedlings reached pseudostem base circumference up to 2.67 m within 22 months, and one plant flowered after 21 months. Thus, seedlings can mature relatively quickly and be used for further breeding. Traditional corm pre-treatments were compared. Size of large sprouts was not affected by splitting, while total production was higher for split corms. Emergence was 100 % from corms, which is unusual, and sprouts were larger than expected, probably because dry manure was mixed with soil and applied directly on the corms when buried; traditionally farmers apply manure on top of soil. Irrigation of buried com is traditionally not used but led to even emergence. Therefore, agricultural practices should be further investigated. Seeds can and should be used for development of improved enset cultivars, following established procedures. However, seeds, or seedlings, must not be used as a substitute of farmers' current way of vegetative propagation, because plants from seeds have other characteristics than the parent plants; not necessarily desirable ones.

Key words: Drought-tolerant crop, *Ensete ventricosum*, Genetic diversity.