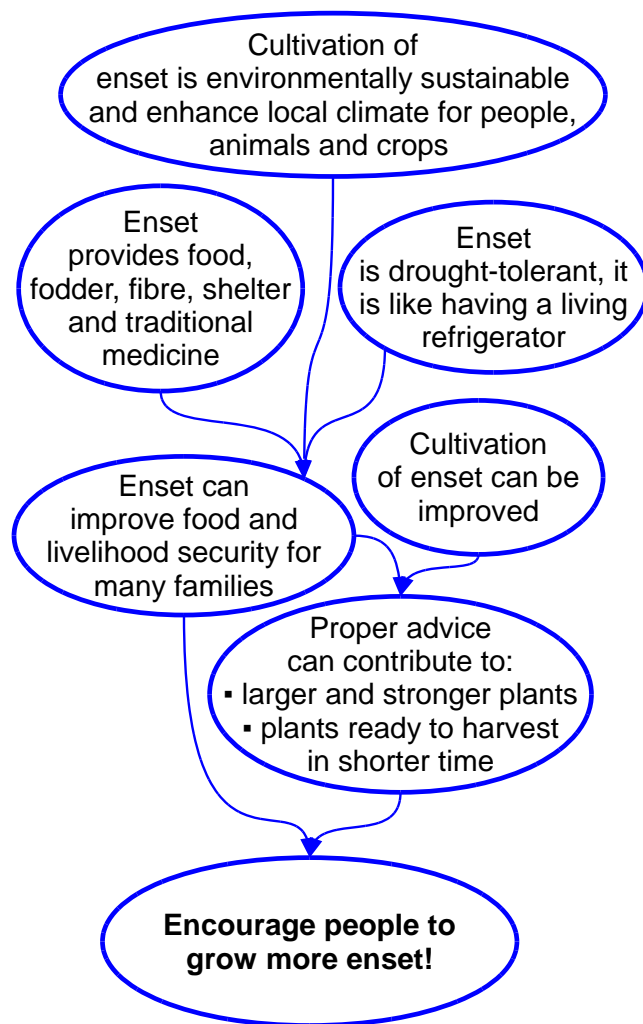


It is possible to get large plants quick.  
This is nine months after corm burial.



They are grown with concern of good agricultural practice, but without any chemical fertilizer or other input of synthetic or costly components.



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# Enset corm sprouting

## Cultivars, corm splitting and watering



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Five months after corm burial,  
2.5 months after first emergence.

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## Background

Enset (*Ensete ventricosum*) is an important multi-purpose and drought-tolerant crop in parts of Ethiopia. Many landraces exist, and from these, six certified cultivars are released. Enset is propagated by burying the corm (underground stem). It is necessary to get documented knowledge about responses. The purpose of this study was to investigate:

- 1) Possible sprouting and growing differences between the six released cultivars.
- 2) Effects of splitting corms on sprouting and growth. All farmers claim that their technique is the best, regardless of which method they use. We compared different traditional methods.
- 3) Effects of watering corms after burial, to test if irrigation makes the buried corm rotting, as traditional advice tells.

## Method

The apical meristem (the point of growth which, if kept, suppresses the growth of more than one shoot) was removed from totally 63 corms (about 8 kg each, including 18 cm pseudostem), from the six released cultivars. They were either kept entire, split in two pieces or split in four pieces. One cultivar was used to investigate watering.

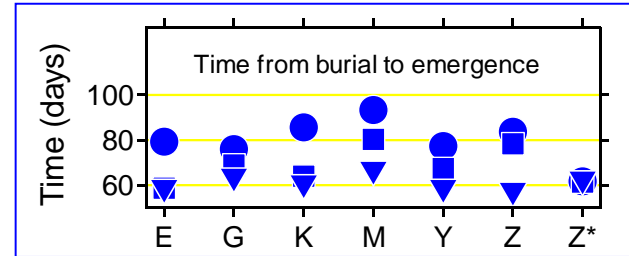
All corms were buried in holes dug to 40 cm deep and 50 cm wide, bottom was refilled with 10 cm softened top soil, the corms were placed thereon and on them 15 L of 50/50 % dry cow dung and soil. This was done in January 2011 at Wolaita Sodo University. The corms allocated to watering were irrigated with 5 L per corm every day. Sprouting was recorded. Sprouted plants were harvested and recorded in October, nine months after corm burial.

## Results

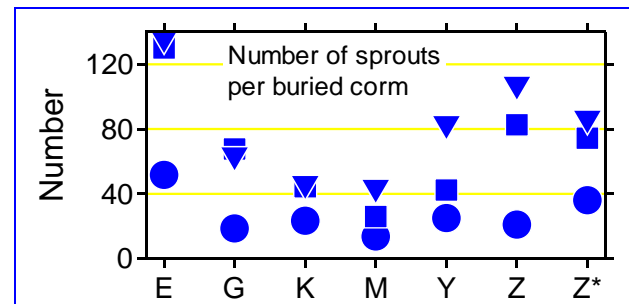
Mentioned results are statistically significant ( $p < 0.01$ ,  $N = 3$ ). X-axes show cultivars: E – Endale, G – Gewada, K – Kelisa, M – Mesena, Y – Yanbule, Z – Zerita, Z\* – Zerita irrigated.

Symbols:

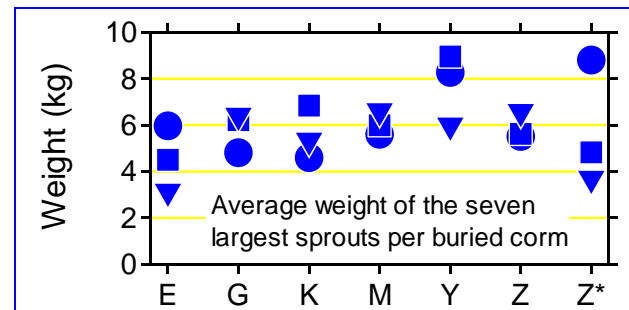
- Entire corm ■ Split in two ▼ Split in four



Entire corms emerged later than split corms, but all emerged and irrigation reduced time.



Numbers of sprouts differed between cultivars, in all cases being more when corms were split.



Plant size of the largest sprouts from each corm was independent of cultivar, split and irrigation.

## Conclusions

### Emergence and Watering

Emergence for entire corms was later than for split corms, probably due to splitting causing stress. First sprouts from not irrigated corms came 50 days after burial and soon after onset of belg rain. Thus, the moisture stored in corms was enough to prevent drying out until emergence. Irrigation decreased overall time to emergence and levelled out the differences.

- Moderate irrigation, if not raining, ensures earliest possible emergence.

### Number of Sprouts

Cultivars differ regarding number of sprouts, but splitting increases the number. However, in areas with serious moisture stress it can be preferable to keep the corm entire, to better withstand extended drought after burial.

- Splitting of corms gives a higher total number of sprouts per original corm.

### Size

All cultivars and original corms produced a number of very large sprouts. From original corms with many sprouts, there was also a large fraction of smaller, but healthy, sprouts.

- Size of the largest sprouts from each original corm is not affected by splitting.

### General

We got 100% emergence, which is unusual, and the sprouts in this study were much larger than expected. This may be due to dry cow dung being applied directly on the corms, allowing quick uptake and use. Traditionally, soil only is used to cover the corm, and cow dung is used on top, in order to not risk rotting. Therefore, agricultural practice has to be further investigated.