



# Mirimir

• ETHIOPIAN • INSTITUTE • OF • AGRICULTURAL • RESEARCH •

## Chayote Potential Diversification in Food Variability

**C**hayote (*Sechium edule* Jacq.) is a vigorous, climbing herb that belongs to the gourd family *Cucurbitaceae* which includes melons, squash and cucumbers. The family comprises a wide range of plants of considerable importance in tropical agriculture.

Observations in southwestern Ethiopia revealed that some less utilized species such as chayote (*S. edule* Jacq.) SW., smooth loofah, sponge gourd, dischcloth gourd (*Luffa aegyptiaca* or *L. cylindrica*), passion fruit (*Passiflora edulis*), tree tomato (*Cyphomandra betacea*), and bird's eye chillies (*Capsicum frutescens*) are found in wider areas. However, but some of these especially chayote and smooth loofah are less utilized and have less distribution and less popularization while their use is so vast.

Farmers are becoming familiar with chayote plant a few years ago. However, as there was no knowhow on the appropriate ways of growing the plant, there have been instances where the plant was left to grow horizontally on the surface of the land and decayed, while its growth characteristics requires support. And farmers also confirmed that it was a very nice local food as additional ingredient in their daily dish. Because the growing method of the chayote plant is very similar to that of passion fruit, as farmers say, they will be capable of cultivating it with no problem.

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Results of records indicated that as already pre-emerged fruits were planted, full emergence and launching of seedling growth took almost 7-15 days, and flowering started 51-55 days after planting.

Fruit setting was recorded 57-62 days after planting, and a reasonable number and size (edible as vegetable) fruits could be obtained within this time.

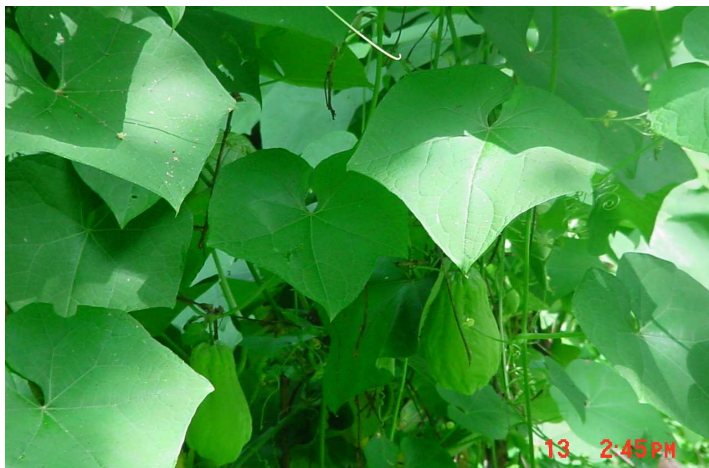
According to Rice *et al.* (1986), fruits may be harvested 100-120 days from planting and are harvesting continue for a long period.

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The fact that time to get fruit was shorter by half than the report from other countries could be due to the suitable climatic environment and fertility of the soil at Tepi condition.



Chayote plants and fruits

Average leaf length (16.8 cm) and relatively edible tender fruit weighed in average 330 g, and width and length 25.88 and 15.53 cm respectively.

Generally, the status of distribution of such neglected or underutilized fruits as chayote and smooth loofah/sponge gourd (*Luffa cylindrica*) is very low while their use is known to be so good. With the current condition, it is not possible to say germplasm is in safe condition. One of the factors for lessening or narrowing the diversity of this plant is the feeding habit of most Ethiopians. That is, people are not well aware of the advantage of diversifying the daily dish from different locally and easily available fruits and vegetables. Because of this, the culture still awaits a hard work to channel it

towards the modern food habit, otherwise as obtained from practical observations, a considerable number of people especially in the countryside try to underestimate thoseone who exercise diversifying their dish as if it is the sign of poverty. Such issues require the aggressive approach to let people know the importance of such fruits (chayote, smooth loofah, passion fruit, etc.) in the growing areas and also start value adding of these fruits and introduce, improve and promote their marketing.

Chayote fruit has significant nutritional components (water, calories, protein, fat, fiber and vitamins) at different quantities that can have greater contribution for daily dish improvement. With this it necessitated studying the biology and/or phenology of not only chayote but also other neglected but important fruit crops such as smooth loofah, tree tomato. Moreover, it will be very appropriate to work hard on popularization of cultivation and post harvest and appropriate utilization of such plants that will contribute for efficient utilization and also for conservation of the germplasm.

Data on phenological records on Chayote at Tepi National Spices Research Center

seed weight (g)	Emergence date	Date to flowering	Date to fruit setting
550	7	51	57
500	10	55	59
400	10	55	59
450	9	55	59
450	14	55	62
Average	10	54.2	59.2

Data on fruit yield and yield-related parameters of Chayote at Tepi National Spices Research Center

Leaf dimensions (cm)			No. of fruit per plant	Weight of fruit (g)	Length of fruit (cm)	Width of fruit (cm)
Length	width	Area (cm <sup>2</sup> )*				
15.2	18.8	618.33	80	350	14.75	12.83
15.8	14.6	296.3	70	320	13.45	11.80
17.5	16.6	367.2	43	340	13.90	16.48
18.7	16.2	396.08	16	310	12.00	10.65
16.80	16.55	419.48	52.3	330	13.53	12.94

\* calculated by using tracing on paper

**NB.** All the parameters are mean of five records

*Girma Hailemichael and Amsalu Nebiyu*

## Gambella in New Courage of Technology Scaling up

On September 1, 2011, a field day was organized on successful agricultural technology scaling up activities in Gambella Region. The event was attended by the regional higher officials lead by the president of the Region, parliament delegates and Director General of EIAR. The field visit was conducted in Lare, Abobo and Gambella Town Zuriya weredas on selected farms of maize, sesame, rice and groundnut fields in the representative locations. Senior researchers from EIAR and researchers from Gambella Agricultural Research Institute participated on the event.

During the visit, Dr Fasil Reda, event coordinator from EIAR, and Director of Gambella Agricultural Research Institute

(GARI) declared the remarkable achievements in terms of the changes in farmers' practices, performance of the technologies, and coordination and linkages established to sustain the process of technology delivery to the farmers. The challenges and constraints faced in getting technologies to the farmers in the previous years were also explained. The coordinators on behalf of their respective research institutes gave grateful appreciation for the Regional Government officials for their commitment and dedication to get things right.

Dr Solomon Assefa, DG of EIAR, on the event appreciated the commitment and interest of farmers to try and use proven agricultural technologies by the research

system and the relentless effort of the administrative bodies to realize the scaling up activities in the Region. He said that the current achievements provide an additional impulse to move forward in a coordinated manner to fully cover the need of farmers with regard to agricultural technologies, so that national agenda of doubling agricultural production in GTP implementation period could be realized. He underlined the commitment of EIAR to continue working with agro pastoral and pastoral based regions by building capacity of research centers for the enhancement of farmers' livelihood.

H.E Ato Mesert, a representative of the Parliament Team of Pastoral and Agro Pastoral, commented on the performance of the selected technologies in the Region and the changes of farmers practice. He also appreciated the linkage of research with regional government structures to reach more farmers in a sustainable and planned manner.

Gora Omed, an innovative farmer from Abobo Wereda who has tried many of the technologies, expressed his plan to produce more than his family's consumption demand and for sale. He mentioned the need to continuously supply seeds for farmers and train others to adopt the technologies. He also asserted his commitment to help others use the improved technologies.

The event created an opportunity to share the best experiences among farmers, experts and leaders on the performance of research generated technologies, helping farmers improve their livelihood. The event was also mentioned as an opportunity to link the scaling up activities with resettlement programs in the Region.

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