

Alliance



LAI

Classification

Ploidy: 3X
 Genome: AAA
 Subgroup: Red
 Type: Dessert
 Suspected country of origin: Thailand
 ITC code: ITC0403

Status

Lai is a dessert banana believed to originate from Thailand, rich in pro-Vitamin A carotenoids, with at least **48 µg Retinol Activity Equivalent** per 100g when raw (on fresh weight basis). This is estimated to meet **12% of the daily recommended intake** of Vitamin A of children under 5 years.

It is being fast-tracked for potential adoption into the agri-food systems of Eastern Africa. It has been assessed on-station and on-farm in Burundi and Eastern Democratic Republic of Congo (DRC). On-station trials are also underway in Tanzania, and Uganda.

Description

- * Lai has a tall stature. The underlying pseudostem has a predominantly re-purple colour (fig 3)
- * The leaf petiole is open with spreading margins that are winged and undulating with pink coloured edges. The petiole base has large dark brown blotches (fig 4,5)
- * The leaves have an intermediate habit and are green with both sides of the base rounded (fig 6)
- * The male bud is ovoid in shape with an inner red-purple colour and an outer purple-brown colour. The apex of the bract is pointed (fig 7)
- * The flowers have a yellow compound tepal with a translucent cream free tepal. The style and filament are yellow in colour (fig 8)
- * The fingers are slightly curved and slightly ridged. The fruit apex is blunt tipped without any flower relicts. The peel of mature unripe fruit is light green in colour (fig 9)
- * The pulp colour of a mature finger (unripe) is dark yellow-orange: RHS 9/2 1355U (fig 10)



Fig 1. Lai Bunch



Fig 2. Whole plant



Fig 3. Pseudostem



Fig 4. Neck



Fig 5. Petiole



Fig 6. Leaf



Fig 7. Male bud



Fig 8. Flower



Fig 9. Hand

Agronomic Traits (Average of 8-10 plants for 3 cycles)	Lai
Time from flowering to harvest (days)	137.5
Plant height at flowering (cm)	339.2
Pseudostem girth at base at flowering (cm)	88.2
Number of functional leaves at flowering	9.6
Bunch weight (kg)	13.5
Number of hands	5.4
Number of fingers on bunch	66.3
Weight of hand (kg)	2.2
Fruit circumference (cm)	10.6
Fruit length (cm)	17.2



Fig 10. Finger

Agronomic Performance

- * Characteristics of Lai to the left are based on agronomic data from on-station trials in Burundi, North and South Kivu in Eastern DRC
- * Values are averages of 8-10 plants evaluated from over 3 cropping cycles in each site: Burundi– 2 sites; South Kivu– 3 sites; and North Kivu-3 sites
- * Lai takes approximately **4.6 months** from flowering to maturity
- * A bunch of Lai can weigh up to **25kg**

Pro-vitamin A carotenoids Content

- * Lai contains **746 µg/100g** pro-Vitamin A carotenoids when **ripe** (on fresh weight basis)
- * This yields **48 µg Retinol Activity Equivalent** per 100g which can be estimated to meet 12% of the daily recommended intake of Vitamin A of children under 5 years (400 RAE µg/day) and 7% of the daily recommended intake of Vitamin A of adult women (700 RAE µg/day)

Values are means of three individual samples on fresh weight basis of bunches obtained from North Kivu, DRC¹. 100g of banana is approximately one finger.

- * The pro-Vitamin A carotenoid content increases as the banana ripens
- * Lai is a dessert banana that is mainly consumed when raw and fully ripe

References

1. Ekesa, B., Nabuuma, D., Kennedy, G., and Van den Bergh, I. 2017. Sensory evaluation of Provitamin A carotenoid-rich banana cultivars on trial for potential adoption in Burundi and Eastern Democratic Republic of Congo. *Fruits*, vol72, No 5, pages 261-272
2. Ekesa, B., Nabuuma, D., Blomme, G. 2015. Provitamin A carotenoid content of unripe and ripe banana cultivars for potential adoption in eastern Africa. *Journal of Food Composition and Analysis*, Issue 43, pages 1-6.
3. HarvestPlus carotenoid colour strips. 2007. Standardised using Royal Horticultural Society range of accepted colours and Universal Pantone colours.
4. IPGRI-INIBAP/ CIRAD. 1996. Descriptors for banana (*Musa* spp.). International Plant Genetic Resources Institute, Rome Italy; International Network for the Improvement of Banana and Plantain, Montpellier, France; Centre de coopération internationale en recherche agronomique pour le développement, Montpellier, France.

Content development: Deborah Nabuuma and Beatrice Ekesa (Bioversity International, Uganda)

Photos: Alice Simbare (Bioversity International, Burundi), Muller Kamira (Bioversity International, South Kivu-DRC), Charles Sivirihau-ma (UCG, North Kivu-DRC)

For more information: Beatrice Ekesa, Bioversity International, Uganda: b.ekesa@cgiar.org

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The Alliance of Bioversity International and CIAT

Via dei Tre Denari, 472/a
00054 Maccarese (Fiumicino), Italy
Tel. (+39) 06 61181 Fax. (+39) 06 6118402
bioversity@cgiar.org
www.bioversityinternational.org



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