

## Short Communication

# Longest legume inflorescence in Sri Lanka

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## ABSTRACT

The recent record of an unusually long inflorescence of *Cassia fistula* ('Ehela') from Sri Lanka, reaching up to 238 cm can be considered as the longest recorded legume inflorescence. In the world of legumes, records surpassing such lengths are very rare and are not well authenticated. Therefore, the present record can be considered as a strong contender for the longest inflorescence in the legume family.

**Key words:** *Cassia fistula*, Fabaceae, raceme, Leguminosae, 'Ehela'

## INTRODUCTION

The legume family (Leguminosae or Fabaceae), commonly known as Pea or Bean family is the third largest flowering plant family in the world with over 17,000 species in about 730 genera (Heywood, 1993) However, in Sri Lanka, it is the largest family with 402 species (Rudd, 1980; 1991a; 1991b; Kostermans, 1980; Maxwell, 1991; Pedley and Rudd, 1996). *Cassia* is a well known genus in the tropics and consists of over 500 species. In Sri Lanka, the genus is represented by 30 species and is the second largest legume genus, next to *Crotalaria* (32 species).

### *Cassia fistula* ('Ehela')

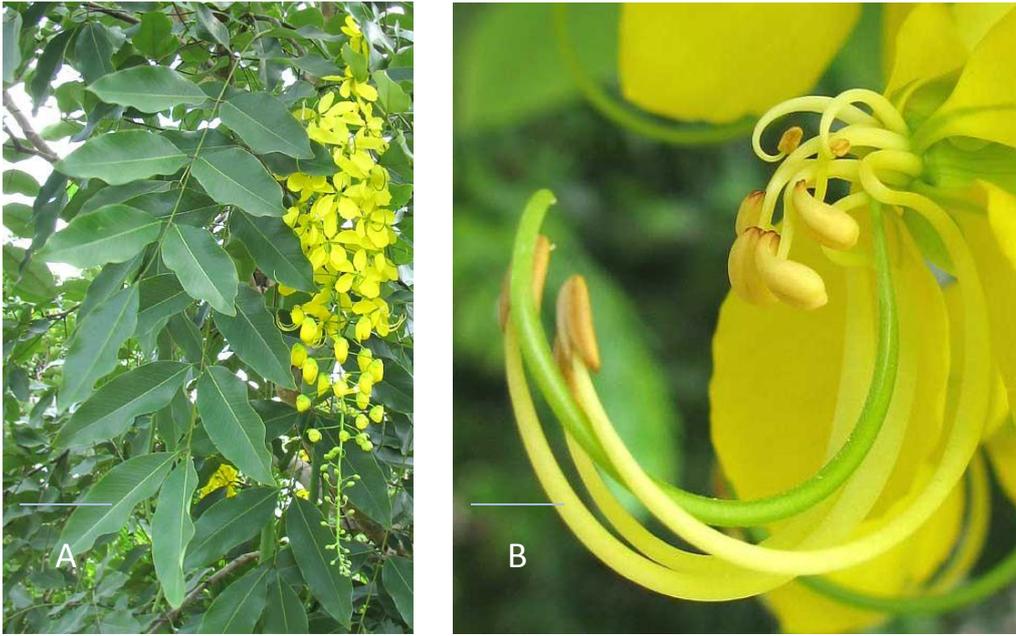
*Cassia fistula*, known as 'Ehela' in Sri Lanka is native to South and Southeast Asia. It is widely grown as an ornamental tree in many tropical countries of the world due to its profuse blooms, often with the tree crowns covered with flowers, at times when almost no leaves are borne by the crown. The tree grows naturally in dry climates, but it can be easily cultivated in the Wet zone. It grows best in full sun, on well-drained soils and is relatively drought-tolerant and slightly salt-tolerant.

The popularity and cultural importance of *C. fistula* is evident by its adoption as the national tree and the national flower of Thailand, the state tree and the state flower of Kerala State in India and the provincial flower of the North Central Province in Sri Lanka. It is known as the Golden Shower tree, Shower of Gold or Pudding Pipe tree in English, 'Konrai' in Tamil and 'Bendra lathi' in Hindi.

*Cassia fistula* is a relatively fast-growing, medium-sized tree, reaching up to 10 m and even up to about 20 m under optimal soil and moisture conditions. The leaves are deciduous, 15–60 cm long, pinnately compound with 3–8 pairs of leaflets, each leaflet 7–21 cm long and 4–9 cm broad. The flowers are produced on pendulous racemes 20–45 cm long (Perry, 1992; Rudd, 1991a; Fig. 1A). Each flower is 4–7 cm in diameter and with five yellow petals of equal size and shape (Fig. 1B). The fruit (pod) is cylindrical, 30–60 cm long and 1.5–2.5 cm in diameter, with a pungent odour and containing a series of disc-shaped seeds that are poisonous. The tree has strong and durable wood that has been used to construct the famous 'Ehela kanuwa (pole)', on the climb to Adam's Peak. In Ayurvedic medicine, it is known as 'Aragvadhā', meaning 'disease killer'. Its roots are considered a very strong purgative, however, self-medication without medical supervision is strongly advised against in Ayurvedic texts.

### Length of inflorescence in legumes

The long inflorescence in legume species are invariably racemose. In racemes the inflorescence axis (peduncle) grows indefinitely producing a series of flowers from its base up to the apex (centripetal development). The basal flowers mature first and either fall or develop pods, while flower buds towards the apex continue to open in sequence. Racemes, due to their long and slender nature, are invariably pendant. The lengths of the inflorescence in legume species, both native and exotic, occurring in Sri Lanka, as recorded in the literature, are shown in Table 1.



**Figure 1.** *Cassia fistula* (A) Inflorescence, (B) Floral parts. (Source: Conrad, 2008)



**Figure 3.** Inflorescence (raceme) of *Cassia fistula* measuring up to 238 cm [Jayasuriya 10132, 31 July 2012, National Herbarium, Peradeniya (PDA)], showing the basal part of the extremely long inflorescence axis arranged in loops and its apical part still bearing flower buds. It is a strong contender for the longest inflorescence among the world of legumes.

**Table 1.** Length of the inflorescence in native and exotic legume species occurring in Sri Lanka.

Status of species in Sri Lanka	Inflorescence length (cm)	Reference
<b>Indigenous species</b>		
<i>Cassia fistula</i>	10-40	Rudd (1991a)
	30-60	Perry (1992)
	61	Edward & Morley (1974)
	<b>238</b>	<b>Present record</b>
<i>Derris scandens</i>	45	Rudd (1991a)
<i>Dioclea javanica</i>	30-85	Rudd (1991a)
<i>Dioclea virgata</i>	40-80	Rudd (1991a)
<i>Canavalia cathartica</i>	40	Rudd (1991a)
<i>Canavalia ensiformis</i>	50	Rudd (1991a)
<b>Exotic introduced species</b>		
<i>Amherstia nobilis</i>	60-90	Perry (1992 )
	91	Edward & Morley (1974)
<i>Caesalpinia pulcherima</i>	20-50	Rudd (1991a)
<i>Cassia alata</i>	50-70	Rudd (1991a)
<i>Cassia siamea</i>	30-60	Rudd (1991a)
<i>Cassia didymobotrys</i>	40	Rudd (1991a)
<i>Mucuna bennettii</i>	61	Meninger (1970)
<i>Mucuna novo-guineensis</i>	60	Rudd (1991a)
<i>Pachyrhizus erosus</i>	60	Rudd (1991a)
<i>Pachyrhizus tuberosum</i>	40	Rudd (1991a)
<i>Macroptilium lathyroides</i>	45	Rudd (1991a)
<i>Strongylodon macrobotrys</i>	152	Meninger (1970)
	300	Andrews & Lewis (1984)
<b>Exotic species, not known in SL</b>		
<i>Wisteria floribunda</i>	183	Perry (1992)

**Records and voucher specimens**

A relatively long inflorescence of *C. fistula* ('Ehela'), reaching 238 cm was observed on a tree growing in a home garden in Seeduwa in Gampaha District in July 2010 (Fig. 3). This tree is about 8 years old, measured about 8 m in height and 15 cm in diameter. The origin of the tree is from a seed brought from Menikdena Archaeological Reserve and Arboretum (Matale District in Sri Lanka). A herbarium specimen was collected and deposited at the National Herbarium in Peradeniya as a voucher - *Jayasuriya 10132*, 31 July 2010 (PDA).

According to known records, this is the longest inflorescence among native or exotic legume species occurring in Sri Lanka. The well-known ornamental 'Jade vine'

(*Strongylodon macrobotrys*), a native of the Philippines, has strikingly beautiful flowers. Its long, pendant inflorescence reaches up to 152 cm in length (Meninger, 1970). Furthermore, another report states a length of 300 cm, although this observation has not been authenticated by specimens or photographs (Andrews and Lewis, 1984). A raceme of *Wisteria floribunda* is reported to record a length of 183 cm (Perry, 1992). This beautiful flowering vine is native to eastern Asia and eastern United States and not known in cultivation in Sri Lanka. Therefore, it appears that the inflorescence of *C. fistula* reported here would be a strong contender for the longest inflorescence among the world of legumes.

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