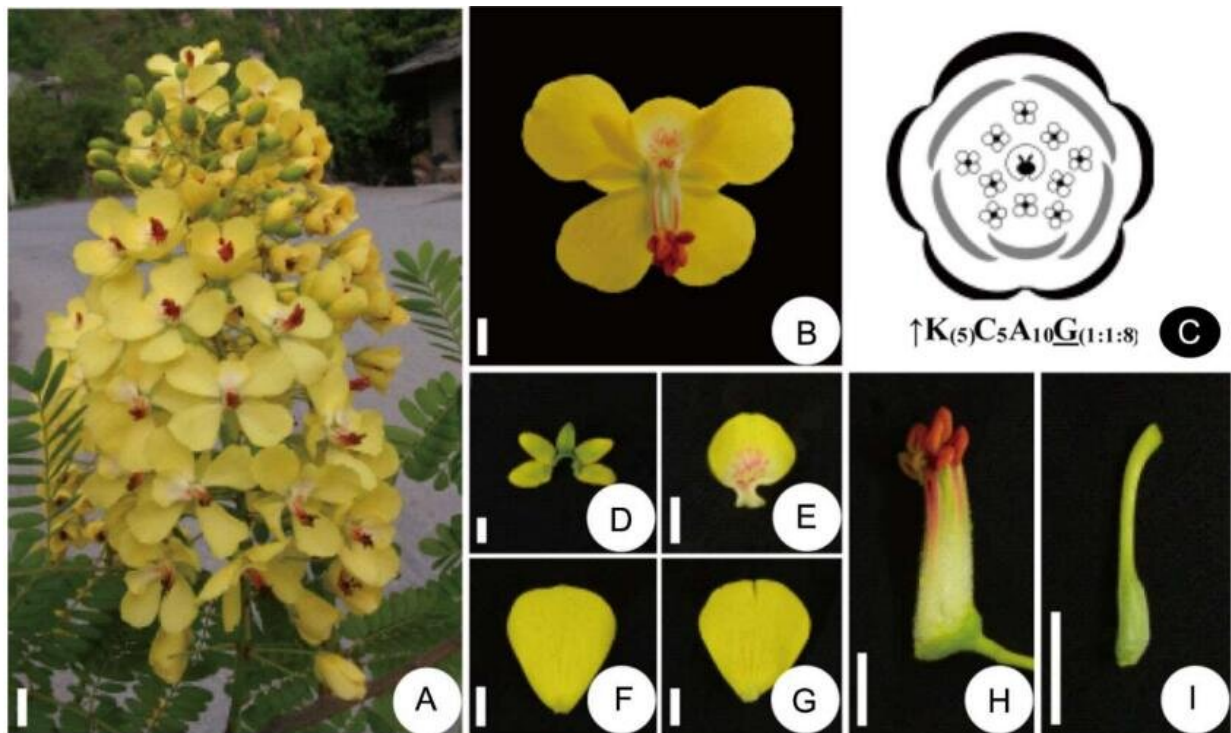


# Researchers investigate floral development of two legume plants

July 10 2023, by Zhang Nannan



Floral biology of *Biancaea decapetala* represented by A. inflorescence, B. flower, C. floral diagram and floral formula, D. sepals, E. standard petal, F. lateral petal, G. abaxial petal, H. stamens and I. pistil. Credit: Shabir A. Rather

The legume family (Fabaceae) is one of the largest groups of flowering plants. The Fabaceae are further divided into six subfamilies based on morphological and molecular data. Despite its diversity in floral

architecture and morphology, the subfamily Caesalpinioideae has been understudied.

In a study published in *Taiwania*, researchers from the Xishuangbanna Tropical Botanical Garden (XTBG) of the Chinese Academy of Sciences and their collaborators used scanning [electron microscopy](#) to examine the floral morphology and development of two legume species in the subfamily Caesalpinioideae, *Biancaea decapetala* (a caesalpinoid), and *Albizia julibrissin* (a mimosoid).

They observed that *Biancaea decapetala* had a racemose inflorescence, whereas *Albizia julibrissin* had capitate heads. In *A. julibrissin*, central sepal initiation was adaxial, and sepal development was helical, whereas it was unidirectional and abaxial in *B. decapetala*. Another notable difference was that in *A. julibrissin*, the carpel remained open and unfused at the initiation of ovule and fused later, whereas, in *B. decapetala*, the carpel margins fused before the ovules appeared.

They also found that the floral initiation and development took place in a sequential manner, and that all floral whorls underwent the necessary changes in cell/tissue organization. In *A. julibrissin*, ovule initiation appeared to be earlier, and there was also a marked fusion of sepals.



Floral biology of *Albizia julibrissin* represented by A. inflorescence and B. dissected mature flower showing sepals, petals, androecium and gynoecium. Credit: Shabir A. Rather

Furthermore, variability in sepal initiation may be due to the helical pattern of floral [development](#) in Caesalpinoids.

"Our data on phylogenetically relevant characters can provide [valuable insights](#) and help to further understand legume systematics, especially in the mimosoid clade nested in the subfamily Caesalpinioideae," said Liu Hongmei of XTBG.

**More information:** Shabir A. Rather Floral development in *Biancaea decapetala* and *Albizia julibrissin* (Fabaceae: Caesalpinioideae), and its systematic significance, *Taiwania* (2023). [DOI: 10.6165/tai.2023.68.281](https://doi.org/10.6165/tai.2023.68.281) . [taiwania.ntu.edu.tw/abstract/1937](http://taiwania.ntu.edu.tw/abstract/1937)

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