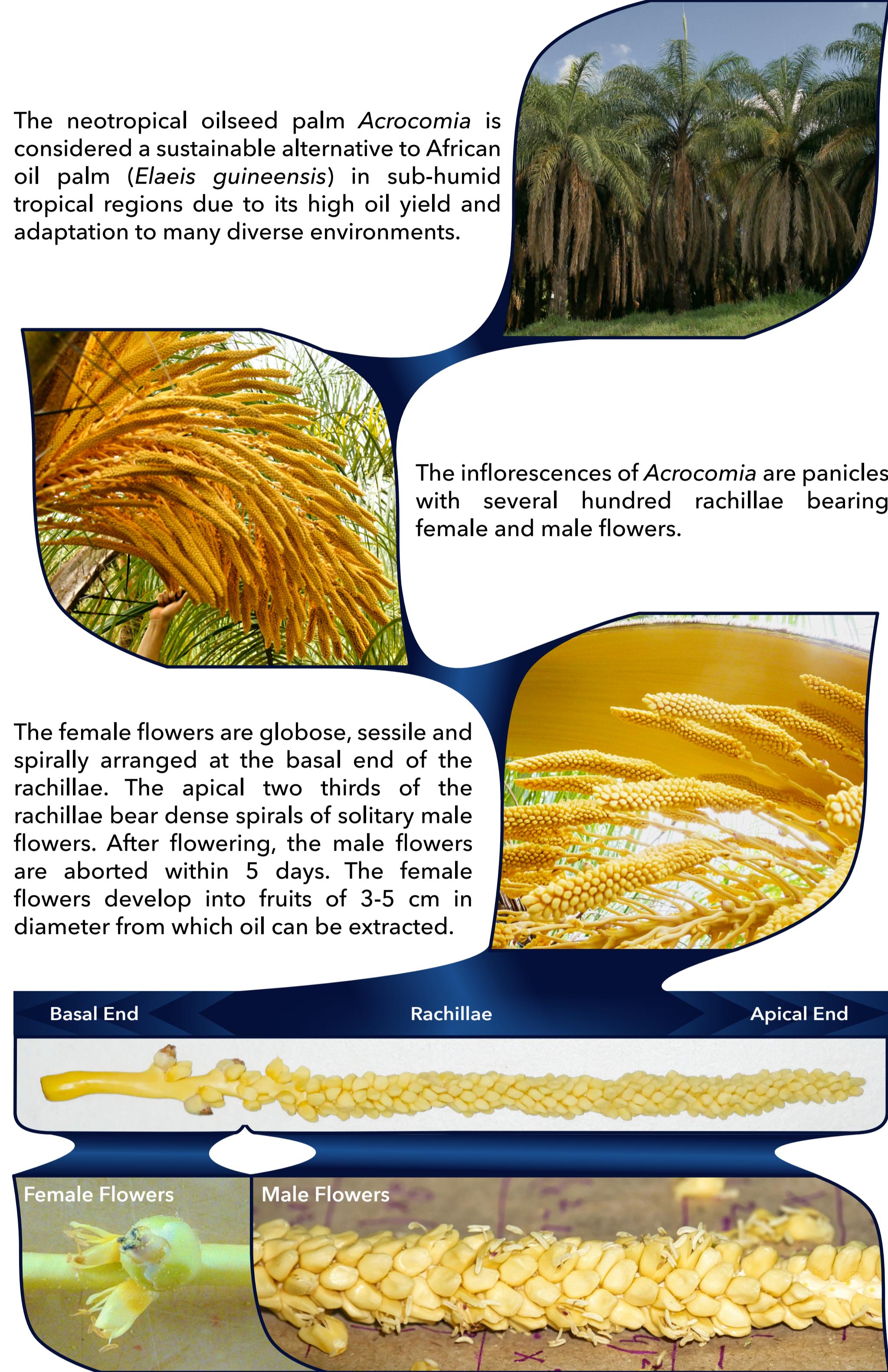


# ECOTYPICAL FLOWER BIOMETRY IN THE NEOTROPICAL OILSEED PALM ACROCOMIA

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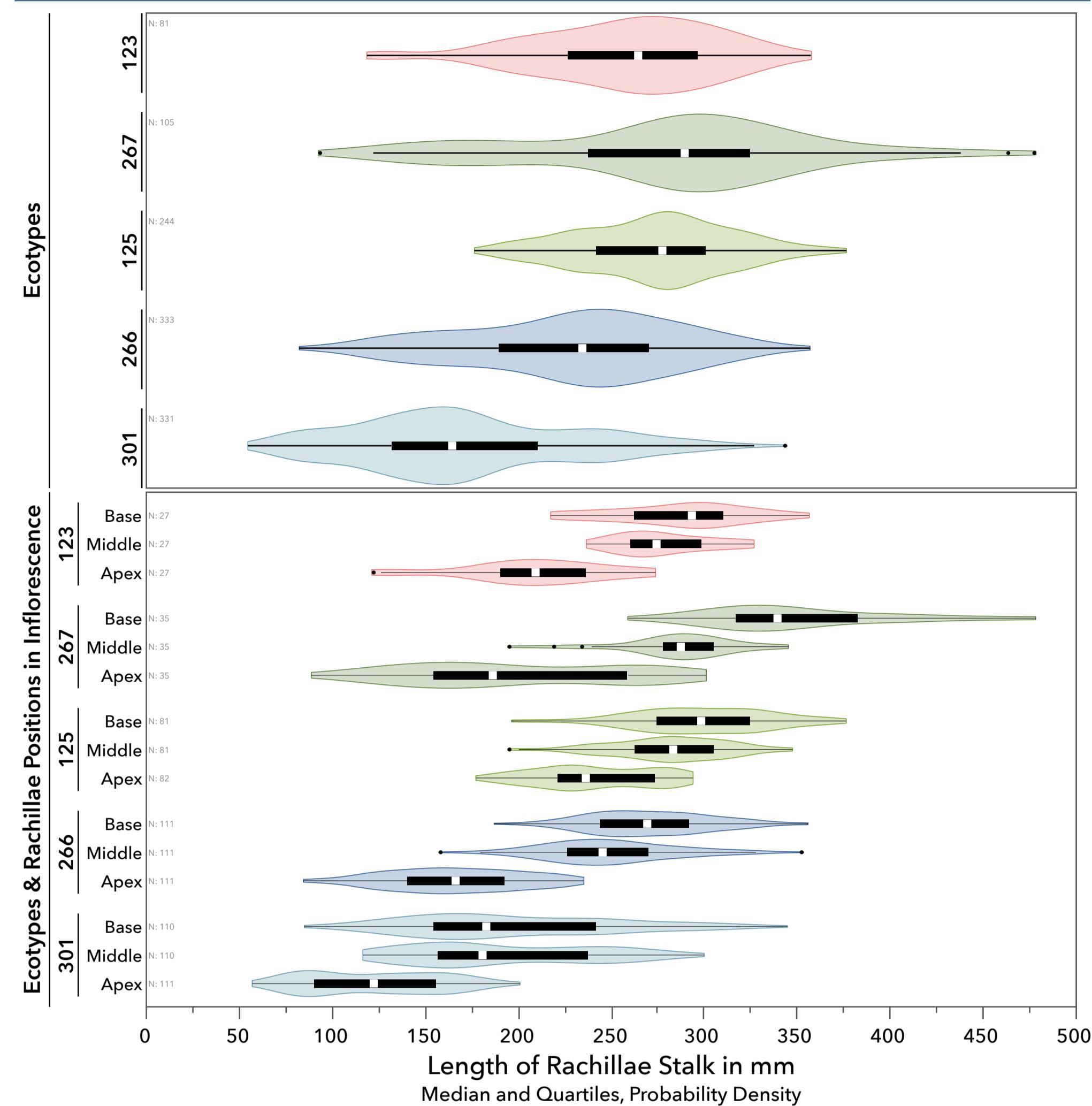
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## Background

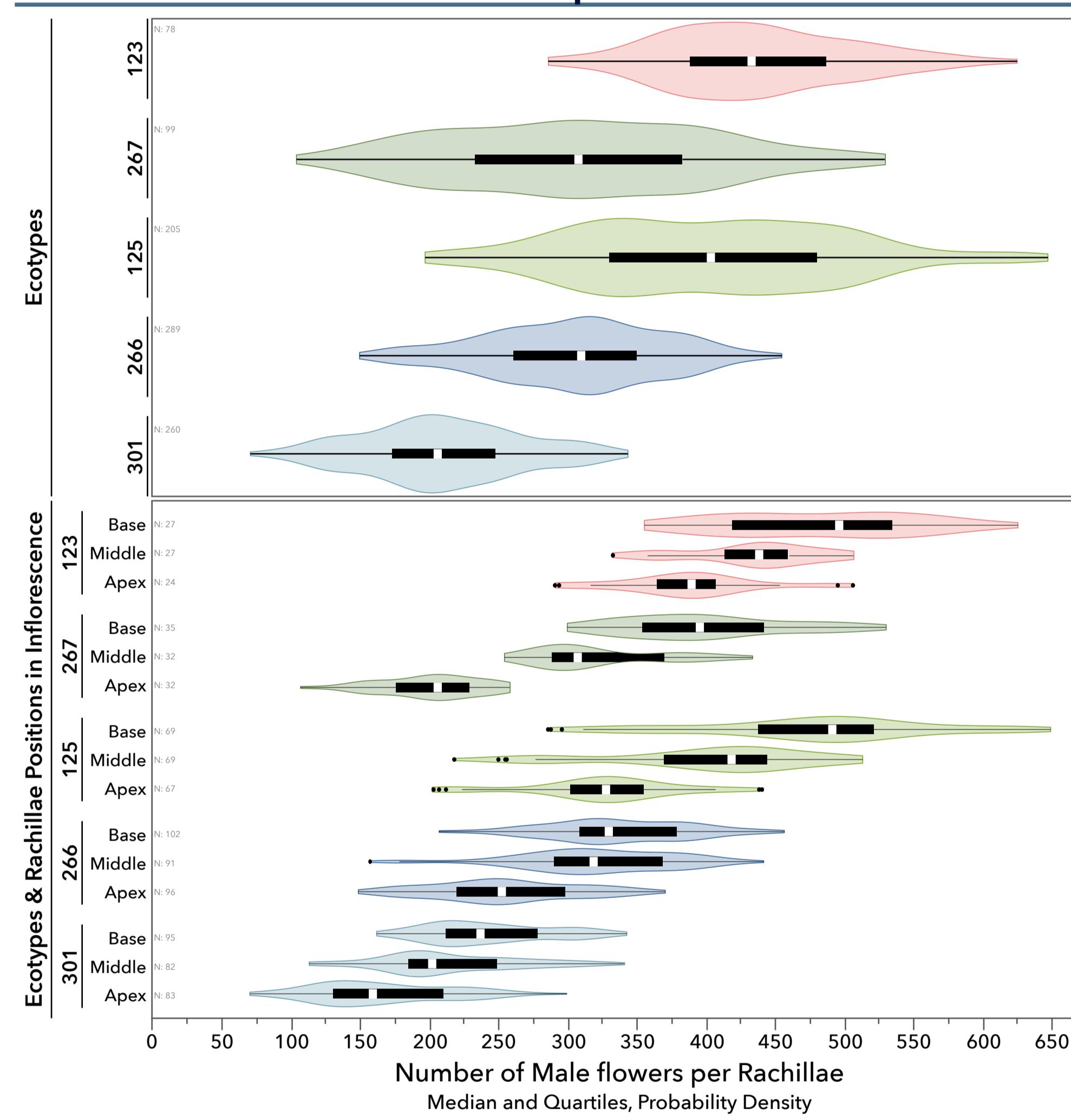


## Results and Discussion

### A. Length of Rachillae Stalk



### B. Number of Male Flowers per Rachillae



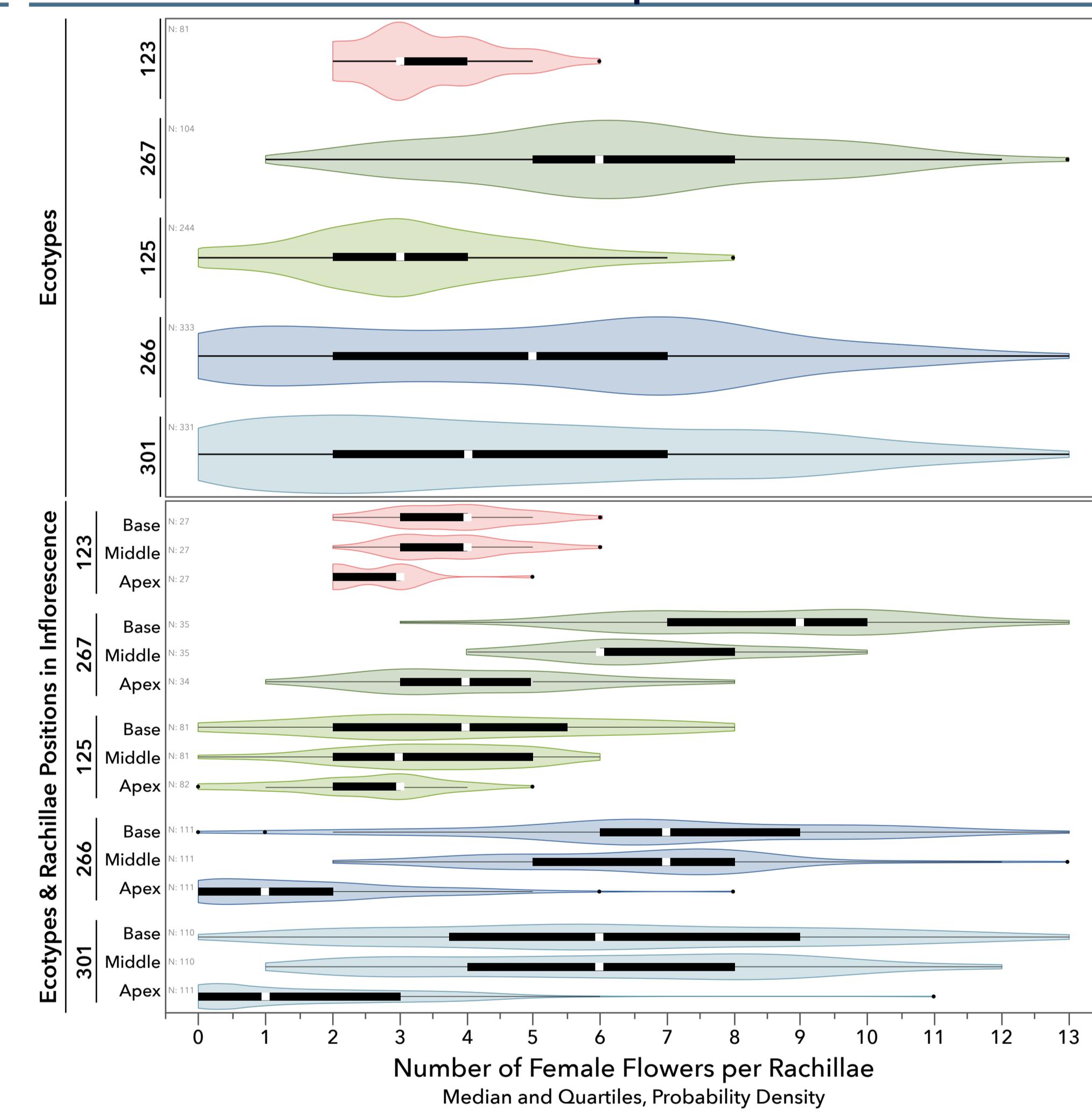
### Number of male and female flowers

- General: Decrease in numbers per rachillae from base to apex regions of the inflorescences → Due also to shorter rachillae
- Male flowers:
  - High in numbers
  - Emission of sweet, intense odour to attract pollinators
- Female flowers:
  - 6-8 female flowers are considered optimal for good yield formation → Oftentimes not the case: Ecotypes 123 and 125: most rachillae have less than 6 female flowers
  - Ecotypes 125, 266, 301: rachillae with no development of female flowers

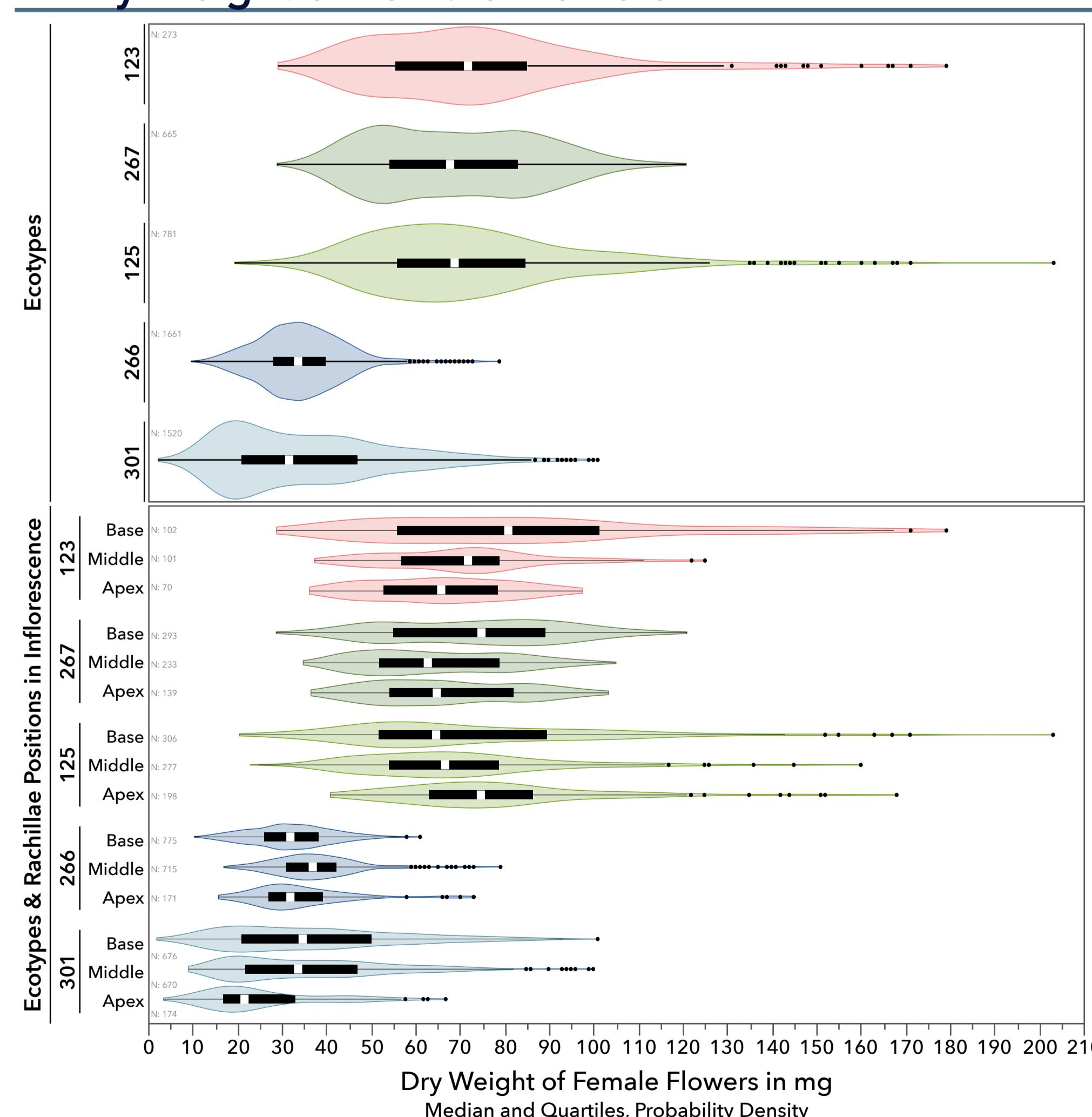
### Dry weight and height of female flowers

- Ecotypes 123, 267 and 125 (*A. intumescens* and *A. aculeata*) have bigger and heavier flowers than 266 and 301 (*A. totai*)
- No differences between rachillae of basal, medial and apical regions of inflorescences → Tendency of heavier and bigger flowers in basal region

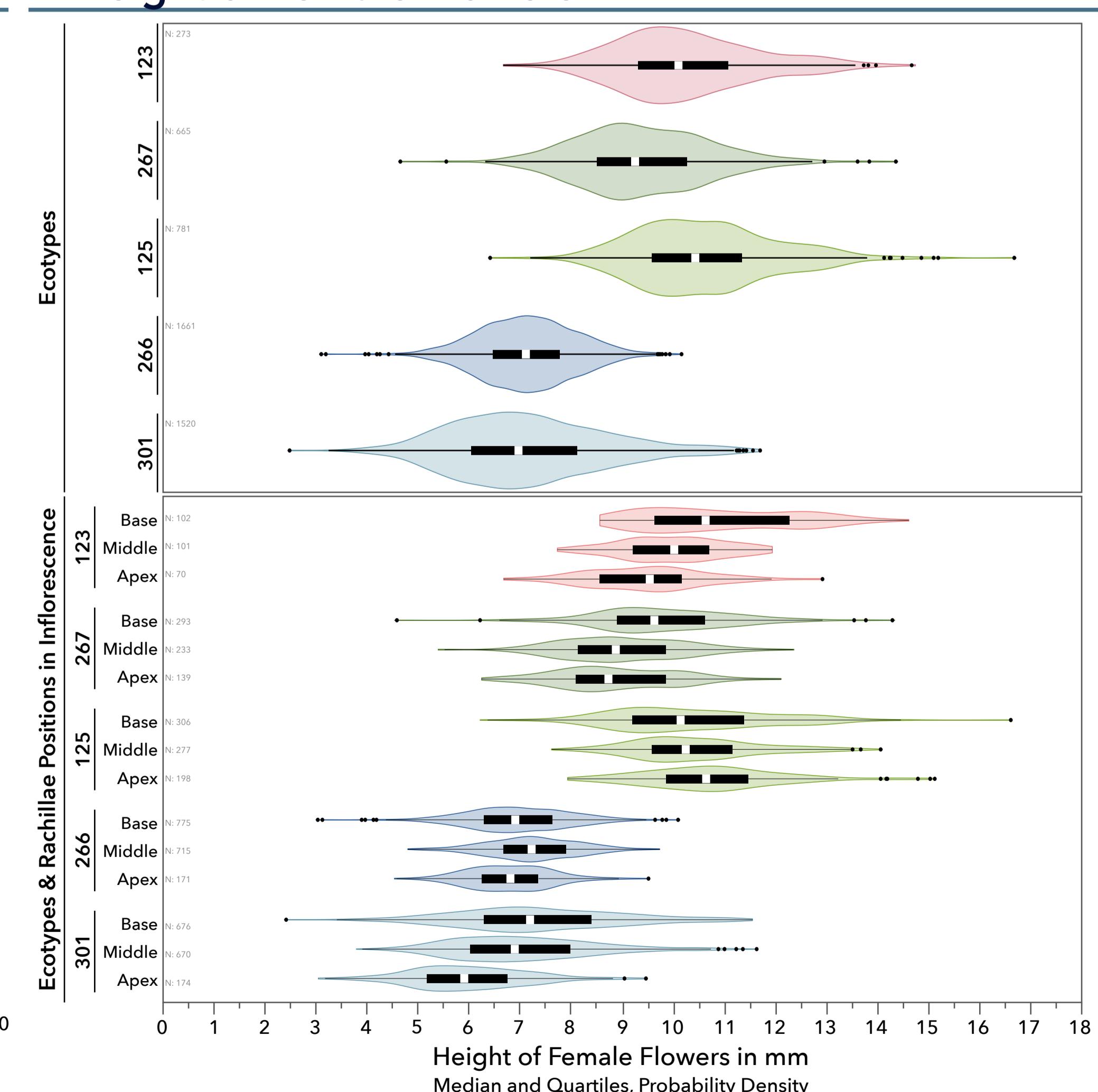
### C. Number of Female Flowers per Rachillae



### D. Dry Weight of Female Flowers



### E. Height of Female Flowers



## Aims

## Conclusion

1. To gain detailed knowledge on the flower biometry in ecotypes of *Acrocomia* originating from different regions of Brazil

Effect of species and ecotype on flower biometry observed  
Most prominent species effect seen in dry weight and size of female flowers  
⇒ Further investigations needed

2. To evaluate the differences in female flower biometry and flower number in rachillae from the basal, middle and apical portion of the inflorescences

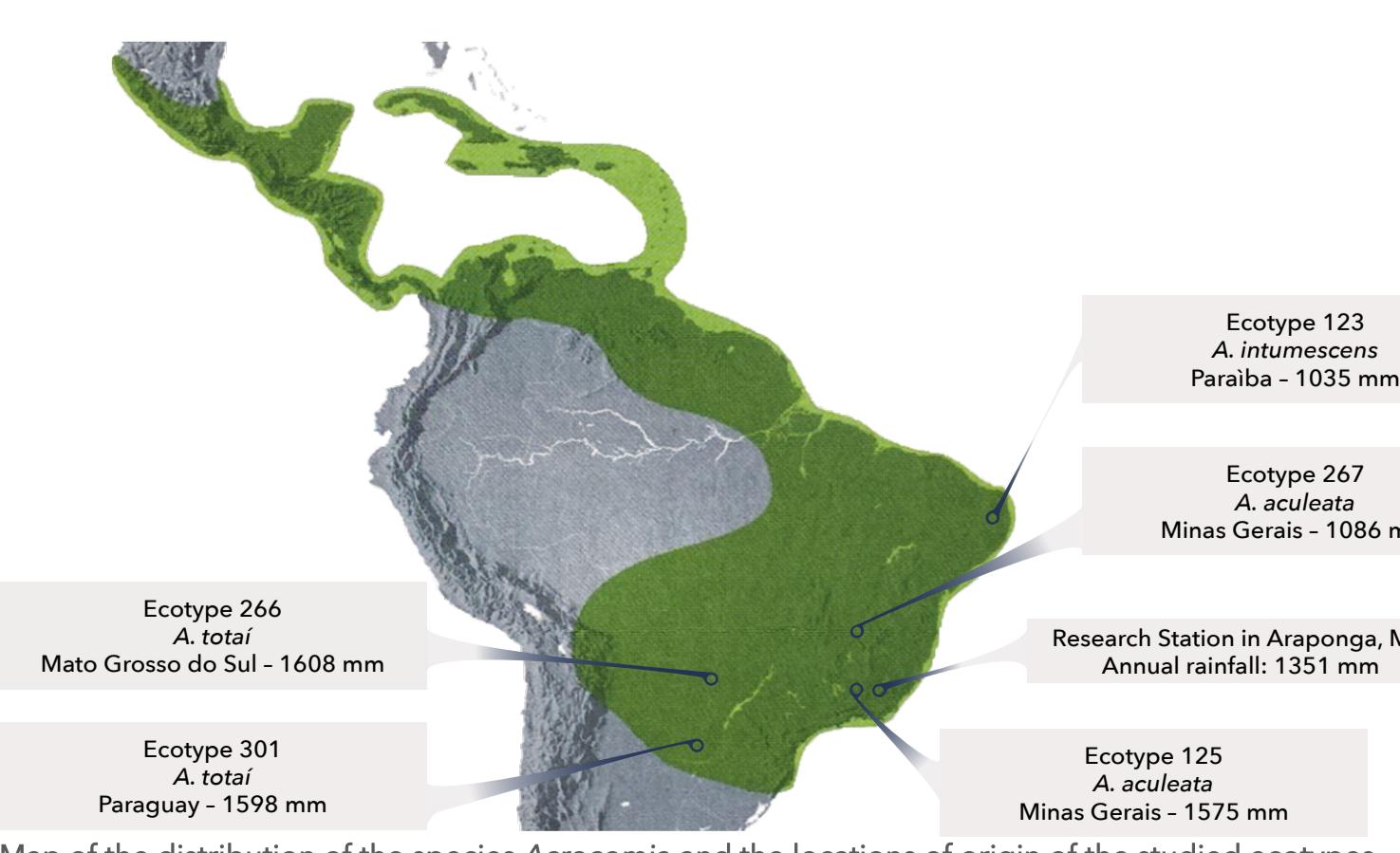
Generally for flower numbers, flower weight and height  
→ Decrease from basal to apical region  
Effect more or less pronounced in certain traits and/or ecotypes

### Acrocomia:

- Genetic improvement is required
- High genetical and ecotypical variability
- Great potential of superior breeding material

## Materials and Methods

- Study Site: *Acrocomia* Active Germplasm Bank in Araponga, MG, Brazil (see map)  
Managed by the Universidade Federal de Viçosa
- Study Object: Five Ecotypes of *Acrocomia* sp. from different climatic regions of Brazil and Paraguay (see map)
- Sampling: Nine rachillae of each open inflorescences from September 2019 to January 2020;  
3 per basal, middle and apical part of the inflorescences (=Rachilla Position)
- Measurements:
  - Length of Rachillae
  - Height and diameter of female flowers using a digital sliding calliper
  - Fresh and dry weight of the individual female flowers
  - Counting of female and male flowers  
(Total number flowers formed = number of flowers present + number of scars of aborted flowers)



## References

- Alvares, C. A., Stape, J. L., Sentelhas, P. C., de Moraes Gonçalves, J. L., & Sparovek, G. (2013). Köppen's climate classification map for Brazil. Meteorologische Zeitschrift, 22(6), 711–728.
- Dransfield, J., Uhl, N. W., Asmussen, C. B., Baker, W. J., Harley, M. M., & Lewis, C. E. (2008). Genera palmarum: The evolution and classification of palms (1. Edition). Kew Publ. Royal Botanical Garden

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