

# Variasi Morfoanatomi Bunga *Hibiscus rosa-sinensis* L. Bentuk Crested dan Keterkaitannya dengan Ekspresi Gen MADS-box = Morphoanatomy Variation of *Hibiscus rosa-sinensis* L. Crested Flower and Its Correlation with MADS-box Gene Expression

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## Abstrak

Penelitian dilakukan untuk mengetahui variasi bunga *Hibiscus rosa-sinensis* L. bentuk *crested* di alam, serta hubungannya dengan ekspresi gen *MADS-box*. Sebanyak 200 sampel bunga *crested* diamati secara morfologi melalui pengukuran panjang *staminal column*, perhitungan perhiasan bunga, dan pengamatan visual permukaan luar ovarium. Sebanyak 137 sampel bunga *crested* diamati secara anatomi melalui pengamatan visual struktur internal ovarium. Hasil pengamatan morfologi dan anatomi menunjukkan tingginya variasi bunga *H. rosa-sinensis* bentuk *crested*. Salah satu karakter yang menentukan tingginya variasi bunga *crested* di alam adalah keberadaan petal tambahan yang diduga tumbuh di lokasi keberadaan *stamen* dan *petal* akibat gejala homeosis. Homeosis pada bunga *crested* diduga karena tidak terekspresikannya gen C yang merupakan salah satu kelas dari gen *MADS-box*. Untuk membuktikan dugaan tersebut, dilakukan pengamatan molekular melalui analisis gen *MADS-box* yang berperan dalam proses pembungaan. Dari kelima kelas gen *MADS-box* yang diamati, hanya gen C yang berhasil diamplifikasi. Hasil menunjukkan bahwa gen C terekspresi di semua bagian bunga *crested*. Berdasarkan hasil tersebut, homeosis pada bunga *crested* bukan disebabkan karena tidak terekspresikannya gen C. Dibutuhkan penelitian lebih lanjut untuk mengetahui tingkat ekspresi tiap kelas gen *MADS-box* terhadap variasi bunga *crested* di alam.

.....The aim of this study is to know the variation of *Hibiscus rosa-sinensis* L. crested flower in nature, and to know its correlation against *MADS-box* gene expression. The study was conducted through morphological, anatomical, and molecular observation. Morphological sections were carried out on 200 samples of flowers by measuring the length of staminal column, counting the number of perianthium, and observing the external structure of ovaries. Anatomical sections were carried out on 137 samples of flowers by observing the internal structure of ovaries. The results showed that *H. rosa-sinensis* crested flower has a high variety in the shape of flower. Two main parts of crested flower that effecting its variety in nature are *staminodium petaloid* and *stamen-petal intermediate* that lied in the position of stamen and petal. This phenomenon is assumed as homeotic due to the absence of C gene expression that belong to *MADS-box* gene family. Based on molecular observation, *AGAMOUS* gene (*MADS-box* class C) expressed in all of crested flower parts, including *staminodium petaloid* and *stamen-petal intermediate*. This results is on contradiction with the assumption that homeosis in *H. rosa-sinensis* caused by the absence of gene C. Further research is needed to know the expression of others *MADS-box class* genes expression, including their level of expression in each parts of crested flower.