

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.