

## KARAKTER MORFOLOGIS BUNGA, POLEN DAN POLINASI DENGAN POLEN AWETAN BUAH NAGA SUPER MERAH (*Hylocereus costaricensis* (Web.) Britton & Rose)

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### INTISARI

*Hylocereus costaricensis* adalah jenis buah naga yang berasal dari Amerika Selatan. Penelitian ini bertujuan untuk mengetahui karakter morfologis bunga, polen dan tingkat keberhasilan polinasi dengan polen awetan. Karakter morfologis diketahui dengan membandingkan 10 sampel bunga, karakter morfologis polen segar menggunakan metode asetolisis dan uji fertilitas polen awetan menggunakan metode YKI, serta tingkat keberhasilan polinasi diamati setelah seminggu. Hasil penelitian menunjukkan bahwa karakter morfologis bunga *H. costaricensis* yang berkaitan dengan polinasi yaitu bunga berbentuk terompet, berwarna putih, termasuk bunga lengkap (*complete flower*) dan bunga sempurna (*perfect flower*), berumah satu (*monoecus*), susunan bunga majemuk, bunga bersifat *self-incompatibility* dengan posisi stigma lebih tinggi ( $\pm 2$  cm) daripada antera, jenis penyerbukan yaitu penyerbukan silang (*cross pollination*) dengan bantuan manusia, tingkat kemasakan stigma dan polen tidak bersamaan. Karakter morfologis polen segar yaitu unit polen bertipe monad. Ukuran polen berdasar panjang eksin polar (P) 78,2  $\mu\text{m}$ , diameter ekuatorial (E) 62  $\mu\text{m}$  dengan indek P/E ( $\mu\text{m}$ ) 1,26, bentuk polen bertipe *subprolate*. Tipe aperture polen yaitu *tricolpate* dengan celah memanjang disebut *colpus/colpi*. Tipe ornamentasi eksin yaitu *echinate*. Uji fertilitas polen awetan tertinggi pada penyimpanan suhu 4°C, hari ke-3 (S1H1) yaitu 99,59%, dan terendah pada suhu 0°C, hari ke-9 (S2H3) yaitu 98,34%. Berdasarkan uji ANOVA tidak ada pengaruh signifikan dari perlakuan suhu, tetapi ada pengaruh signifikan dari perlakuan hari atau lama penyimpanan. Polinasi bunga *H. costaricensis* yang berhasil yaitu 65%, sementara 35% tidak berhasil. Tingkat keberhasilan polinasi pada penyimpanan suhu 0°C, -4°C, dan 4°C berturut-turut yaitu 16 calon buah, 14 calon buah, dan 9 calon buah. Polinasi paling tinggi pada suhu 0°C hari ke-3 yaitu 100%, sedangkan paling rendah pada suhu 4°C hari ke-3, ke-9, dan ke-12 yaitu 40%.

Kata kunci : *Hylocereus costaricensis*, bunga, polen, fertilitas, polinasi

**FLOWER AND POLLEN MORPHOLOGICAL CHARACTERS,  
POLLINATION WITH PRESERVED POLLEN ON SUPER RED  
DRAGON FRUIT (*Hylocereus costaricensis* (Web.) Britton & Rose)**

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**ABSTRACT**

*Hylocereus costaricensis* is a kind of dragon fruit originating from South America. This study aimed to determine the flower and pollen morphological characters, and pollination on super red dragon fruit with preserved pollen. Flower morphological characters were known by comparing 10 samples, fresh pollen morphological characters by acetolysis method and pollen fertility test by YKI methods, the success of pollination was observed after a week. The results showed that flower morphological characters of *H. costaricensis* with preserved pollen were trumpet-shaped, white in colour, complete flower, perfect flower, monoecus, compound interest flower, self-incompatibility with position stigma is over ( $\pm 2$  cm) than anther, pollination type is cross pollination with human helped, the maturity level between stigma and pollen were not same. The morphological characters of fresh pollen showed unit-type pollen was monads (free pollen consists of a pollen grain). The size and shape of pollen-based long-exine polar (P) 78,2  $\mu\text{m}$ , equatorial diameter (E) 62  $\mu\text{m}$  with the index P/E 1,26, so this form of pollen-based index P/E of type *subprolate*. Apertura type of pollen was *tricolpate* (pollen round to oval-shaped) with a lengthwise slit called *colpus/colpi*. Exin ornamentation type was *echinate* (shaped like thorns). The preserved pollen fertility test showed that the highest pollen percentage on the temperature of 4°C, 3<sup>rd</sup> day (S1H1) was 99,59%, and the lowest of 0°C, 9<sup>th</sup> day (S2H3) was 98,34%. Based on the results of ANOVA, there was no significant effect of treatment temperature, but there was significant effect of days treat days or longer storage. Flower pollination of super red dragon fruit (*H. costaricensis*) with preserved pollen was 65% successful and 35% was not successful. Pollination success rate from the highest to the lowest on the storage temperature of 0°C, -4°C and 4°C were 16 candidates fruit, 14 candidates fruit, and 9 candidates fruit respectively. The highest pollination was turned at 0°C, 3<sup>rd</sup> day of 100%, and the lowest was at 4°C 3<sup>rd</sup>, 9<sup>th</sup>, and 12<sup>th</sup> were 40%.

Keywords: *Hylocereus costaricensis*, flower, pollen, fertility, pollination