

INTISARI

KERAGAMAN HASIL PERSILANGAN *Zephyranthes rosea* dan *Z. candida* BERDASARKAN METODE RAPD

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Penelitian bertujuan untuk mengetahui keragaman hasil persilangan maupun penyerbukan sendiri *Z. rosea* dan *Z. candida* dan menghitung tingkat kekerabatan antara tetua dan anakan hasil persilangan dan penyerbukan sendiri. Penelitian ini dilakukan dengan menyilangkan *Z.rosea* dan *Z.candida* dimana pada *Z.rosea* memiliki bunga warna merah muda dan *Z.candida* memiliki bunga berwarna putih. Persilangan ini menghasilkan F1 sebanyak 4 tanaman dan hasil *selfing* bunga *Z. rosea* (S1) sebanyak 25 tanaman. Sampel daun diambil dari tetua maupun anakan populasi *selfing* dan persilangan berjumlah 42 tanaman yang diekstraksi menggunakan CTAB. 10 primer digunakan dalam reaksi yaitu OPB 17, OPC 2, OPC 5, OPD 5, OPD 7, OPD 11, OPD 13, OPD 16, OPD 18 dan OPD 20. Reaksi PCR terdiri dari pemanasan 95°C, 5 menit diikuti dengan 35 siklus denaturasi 95°C selama 45 detik, penempelan 37°C selama 1 menit, pemanjangan 72°C selama 90 detik dan proses pemanjangan akhir 72°C selama 7 menit. Amplifikasi pada populasi *selfing* menghasilkan 89 lokus dan pada populasi persilangan sebanyak 54 lokus. Untuk mengetahui keragaman genetik dilakukan analisis penanda molekuler dengan melihat nilai keragaman berdasarkan persentase lokus polimorfik, index Shannon, keragaman antar dan dalam populasi serta analisis kemiripan (PCoA). Penelitian ini menghasilkan anakan yang lebih beragam dari tetuanya, dibuktikan dengan uji polimorfisme S1 *selfing* sebesar 91,01% sedangkan F1 persilangan sebesar 20,37%. Tingkat kemiripan pada tetua dan anakan juga tergolong rendah, pada populasi *selfing* koefisien kemiripan terkecil adalah 0,21 begitu pula dengan populasi persilangan memiliki koefisien kemiripan 0,21.

Kata kunci : persilangan, *selfing*, keragaman genetik, *Zephyranthes candida*, *Zephyranthes rosea*

ABSTRACT

MOLECULAR VARIANCE OF CROSS POLLINATION OF *Zephyranthes rosea* AND *Z. candida* USING RAPD METHODS

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The objectives this research was to know the diversity of cross-pollination result and self-pollination of *Z. rosea* and *Z. candida*, to give information of *Z. rosea* and *Z. candida* genotypes as crosses, and to calculate the level of similarity between parents and offspring of self-pollination and cross-pollination. This study was conducted by crossing *Z.rosea* and *Z.candida* which have different flower color. *Z.rosea* had pink flowers and *Z.candida* had white flowers. The crossing between *Z. rosea* and *Z. candida* produced 4 individual F1, otherwise the selfing of *Z. rosea* produced 25 individual plants. DNA of all plant material were extracted by using CTAB method. The primer used for PCR amplification were OPB 17, OPC 2, OPC 5, OPD 5, OPD 7,OPD 11, OPD 13,OPD 16, OPD 18 dan OPD 20. The PCR included preheating at 95°C for 5 min, followed by 35 cycles of denaturation 95°C for 45 sec, annealing at 37°C for 1 minute, and elongation at 72°C for 1 min 30 sec. The last cycle was followed by a final extension cycle at 72°C for 7 min. PCR amplification produce 89 locus from selfing population and 54 locus from cross population. To find out genetic diversity, including percentage of polymorphic locus, Shannon index, diversity among and between population and similarity analysis (PCoA). The result was offspring have more diversity than the parents, that was proof by polymorphism test on self-pollination have 91.01% and F1crossing have 20.37%. The level of similarity between parents and offspring have a low coefficient of similarity, in selfing population the smallest similarity coefficient was 0.21 as well as cross population have 0.21 coefficient of similarity.

Keyword : crossing, selfing, variance genetic, Zephyranthes candida, Zephyranthes rosea