

## RINGKASAN

Srikaya (*Annona squamosa* L.) merupakan tanaman buah yang termasuk dalam familia Annonaceae, berasal dari daerah tropis yang tersebar luas terutama wilayah Indonesia. Srikaya termasuk tanaman yang dikenal dengan kaya akan manfaat dan kandungan gizi yang cukup tinggi. Tanaman srikaya memiliki potensi menarik untuk dikaji hubungan kekerabatan berdasarkan anatominya. Karakter anatomi dapat digunakan sebagai metode fenetik untuk mengetahui fungsi struktur tanaman, penentuan batasan antar takson dan hubungan fenetik suatu jenis tanaman. Tujuan dari penelitian ini adalah untuk 1) mengetahui variasi karakter anatomi daun srikaya dan 2) mengetahui hubungan fenetik srikaya berdasarkan karakter anatomi daun.

Penelitian ini dilakukan dengan metode survei dengan teknik pengambilan sampel *purposive sampling*. Lokasi penelitian sampling berada di empat kecamatan yaitu Kecamatan Purwokerto Utara, Kecamatan Purwokerto Timur, Kecamatan Kembaran, dan Kecamatan Sumbang. Penelitian dilaksanakan di Laboratorium Struktur dan Perkembangan Tumbuhan Fakultas Biologi Universitas Jenderal Soedirman pada bulan Februari-April 2022. Variabel yang diamati adalah karakter anatomi daun dengan parameter yang meliputi tebal epidermis, tebal kutikula, tebal mesofil, indeks stomata, panjang dan lebar stomata, letak stomata, tipe stomata, jumlah stomata dan trikoma per mm<sup>2</sup> luas daun, tipe trikoma, panjang trikoma, tebal spons, tebal palisade, dan rasio palisade. Data yang diperoleh dianalisis secara deskriptif untuk mengetahui variasi karakter anatomi dan untuk mengetahui hubungan fenetik dianalisis menggunakan metode *Unweighted Pair Group Method Arithmetic Average* (UPGMA) dengan *software* MEGA 6.0.

Hasil penelitian menunjukkan bahwa karakter tipe stomata, letak stomata, dan tipe trikoma memiliki hasil yang sama di setiap masing-masing lokasi. Karakter panjang stomata, lebar stomata, jumlah stomata, indeks stomata, panjang trikoma, jumlah trikoma, tebal kutikula atas, tebal kutikula bawah, tebal epidermis atas, tebal epidermis bawah, tebal palisade, tebal spons, tebal mesofil, dan rasio palisade memiliki perbedaan secara kuantitatif di setiap masing-masing lokasi. Berdasarkan analisis ragam karakter tebal epidermis atas dan epidermis bawah berbeda nyata pada setiap lokasi tempat tumbuh. Hubungan fenetik paling dekat antara srikaya Bancarkembar dan srikaya Tambaksari kidul dengan nilai indeks dissimilaritasnya 0,0605, sedangkan hubungan terjauh srikaya Bancarkembar dan srikaya Grendeng dengan nilai indeks dissimilaritas 0,7867.

Kata kunci: *Annona squamosa*, hubungan fenetik, karakter anatomi daun

## SUMMARY

Srikaya (*Annona squamosa* L.) is a fruit plant that belongs to the family Annonaceae, originate from the tropics which are widespread, especially in Indonesia. Srikaya is a plant that is known for its rich benefits and high nutritional content. Srikaya plants have interesting potential to be studied for relationships based on their anatomy. Anatomical characters were used as a phenetic method to determine the function of plant structures, determine the boundaries between taxons and phenetic relationships of a plant species. The objectives of this study were to 1). determine the variation of the anatomical characters of the srikaya leaves and 2). determine phenetic the relationship similarity of srikaya based on leaf anatomical characters.

This research method was survey method with purposive sampling technique. The sampling research locations were in Kecamatan Purwokerto Utara, Kecamatan Purwokerto Timur, Kecamatan Sumbang, Kecamatan Kembaran. The research was conducted at the Laboratorium Struktur dan Perkembangan Tumbuhan, Fakultas Biologi, Universitas Jenderal Soedirman in February-April 2022. The variables observed were leaf anatomy characters with parameters including epidermis thickness, cuticle thickness, mesophyll thickness, stomatal index, stomatal length and width, stomatal location, stomatal type, number of stomata and trichomes per mm<sup>2</sup> of leaf area, trichome type, trichome length, sponge thickness, palisade thickness, and palisade ratio. The data obtained were analyzed descriptively to determine the variation of anatomical characters and to determine the relationship of kinship analyzed using the Unweighted Pair Group Method Arithmetic Average (UPGMA) method with MEGA 6.0 software.

The results showed that the variation of stomatal type, stomatal location, and trichome type characters had the same results in each location. The characters of stomatal length, stomatal width, stomatal number, stomatal index, trichome length, trichome number, upper cuticle thickness, lower cuticle thickness, upper epidermis thickness, lower epidermis thickness, palisade thickness, sponge thickness, mesophyll thickness, and palisade ratio have different results in each location. The character of the thickness of the upper epidermis and lower epidermis is significantly different in each location where it grows. The results obtained in the thickness of the upper epidermis with a significant value of 0.013 and in the thickness of the lower epidermis with a significant value of 0.030. The closest relationship of srikaya was found in Bancarkembar and Tambaksari kidul locations with a dissimilarity index value of 0.0605, while the farthest relationship was in Bancarkembar and Grendeng locations with a dissimilarity index value of 0.7867.

Keywords: *Annona squamosa*, phenetic relationships, leaf anatomical characters