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TAXONOMIC SIGNIFICANCE OF POLLEN, ANATOMICAL AND MORPHOLOGICAL CHARACTERISTICS OF RED AND GREEN LEAVES *CHRISTIA VESPERTILIONIS* (L.f.) Bakh. f. (FABACEAE)

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Abstract

Anatomy, morphology and palynology studies were conducted on green and red *Christia vespertilionis* (L.f.) Bakh.f. The objective of this study is to identify the common, variation and diagnostic features and to construct key identification of species. Anatomy study involves sectioning using sliding microtome on the petiole, lamina, midrib and leaf margin, epidermal mechanical scrapping to observe epidermis, leaf clearing for type of venation, for observation under light microscope, images are captured using Olympus DP25 camera and images analyzed using Docu Analysis software. Leaf and flower morphological features are measured for morphology study. Pollen study involves sample preparation, acetolysis techniques and observation under a light microscope. Common features obtained from this study such are the presence of crystals and mucilaginous cells, presence of additional vascular bundles in the petiole and midrib, the presence of air spaces between the cells, pattern of anticlinal cells wall, presence of glandular and papillae trichomes, number of leaf veins, pedicel characteristics, number of petals, pollen class, aperture type, pollen size, and exine pattern. Variation than can be used to distinguish green and red leaf *C. vespertilionis* are outline shape of leaf lamina, presence of swollen tracheid, type of trichome, vascular tissue arrangement in the midrib and petiole, presence and type of stomata, leaf colour, petiole characteristics, terminal leaf characteristics, abaxial and adaxial leaf surface, main leaf and calyx feature, pollen shape and exine thickness. The results have shown high variation between green and red *C. vespertilionis*. In conclusion, this study proves that green and red leafy *C. vespertilionis* are likely different species, subspecies or varieties and accordingly a status study should be done on both green and red leafy to see their taxonomic position. © 2024, Pakistan Botanical Society. All rights reserved.

Author Keywords

Anatomy; *Christia vespertilionis*; Morphology; Palynology; Rerama

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