

ABSTRACT

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Title of Thesis Microscopy of Elderberry flowers from cultivated varieties.

Sambucus nigra L. (Sambucaceae) is an important medicinal plant. Flowers and fruits are used in folk medicine, pharmaceutical and food industries. Drug *Sambuci nigrae flos* has perspiratory and diuretic effect. It is a component of many tea blends used for colds and infections of the urinary tract. It is also used as a flavor and appearance corrigens. More recent studies have observed the effects of antioxidant, antibacterial and antiviral and influence on type 2 diabetes. The Flowers are used in the food industry as flavoring in corrigens syrups, jams and beverages. The flowers contain flavonoids (0.7 to 3.5%), specially flavonols and their glycosides derived from quercetin (rutin, isokvercitrin, hyperoside, kvercitrin). The flowers also contain small amounts of essential oils, triterpenes and sterols, mucilage and calcium oxalate. Elderberry flowers are harvested from plants growing wild in the countryside. Flowers of cultural varieties that have been selected and bred for fruit production are subject of farmacognostic review, which also includes microscopic evaluation of different varieties of flowers. It were studied microscopic features flowers of 11 varieties planted elderberry. Observations were conducted on native preparations, prepared in accordance with pharmacopoeia. Attention was focused on the characters that shows Czech Pharmacopoeia 2009 to microscopy drugs *Sambuci nigrae flos*. It were monitored : idioblasts containing sand crystals of calcium oxalate, occurrence, shape and size of pollen grains epidermal cells crown, shape and size of stomata and Stomatal index was calculated. In elderflower, which originated from the cultivated varieties were found the same anatomical shapes which are listed in the microscopic description of pharmacopoeial drugs *Sambuci nigrae flos*. In a detailed microscopic examination of flowers from eleven varieties planted elderberry between varieties were observed differences in the size and shape of stomata, pollen grains and idioblasts containing calcium oxalate crystals. In terms of microscopic characters, on which is the emphasis in pharmacopoeia in the identification test, the flowers meet the criteria of cultivated plants from the pharmacopoeia prospective.