

MICROSCOPIC STUDY OF *LAVANDULA ANGUSTIFOLIA* MILL. NEW GENOTYPES TO IDENTIFY STRUCTURAL INDICES WITH DIAGNOSTIC ROLE

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Introduction: New obtained genotypes of *L. angustifolia* require complex studies to determine the adaptive capacity to climatic conditions and the potential for volatile oils accumulation.

Keywords: microscopy, genotype, lavender

Purpose: Microscopic study and highlighting of structural indices with diagnostic role in determining the adaptive and biosynthetic potential.

Material and methods: Lavender plants micropreparations: hybrids – Fr.5S8-24 (1); Cr.13S-6-7 (2); Fr.8-5-15V (3); cultivars – Vis Magic 10 (4), Alba 7 (5), Moldoveanca 4 (6), Aroma Unica (7) and were analyzed under the microscope *Micros* . with camera.



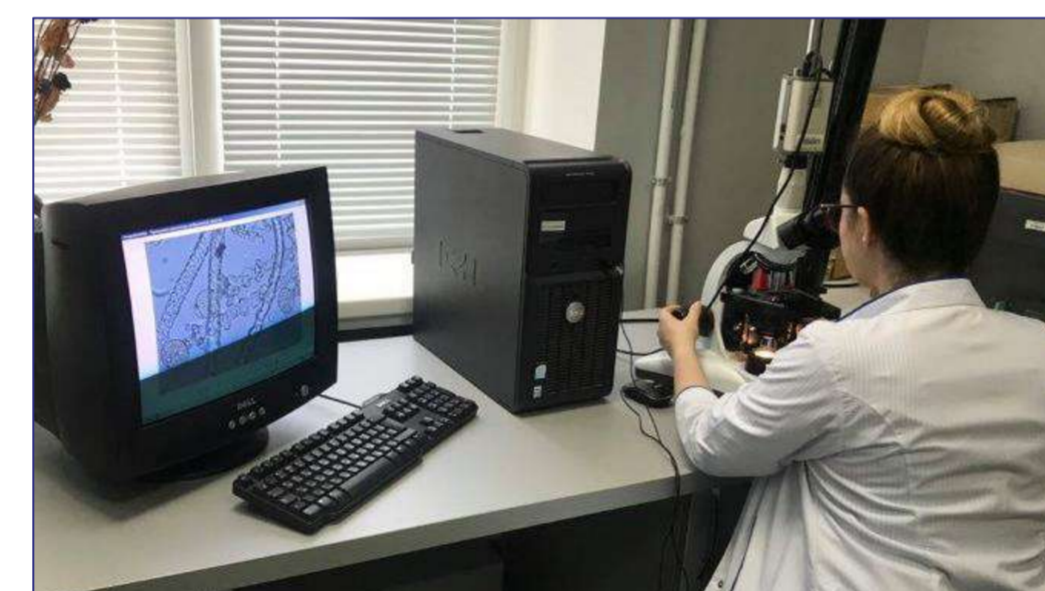
Levander genotypes collection



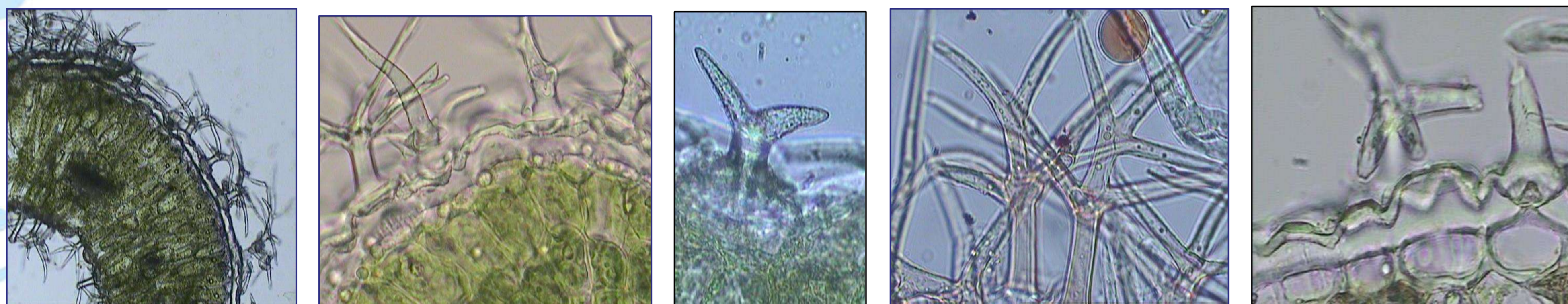
1 2 3 4 5 6 7



Preparation and Studying in *Micros* microscope



Microscopic criteria in identification of the adaptive potential of Lavender genotypes



Pubescens

Different types of branched tector trichomes

Embossed epidermis cuticle

Microscopic criteria in identification of essential oils acumulation in the Lavender genotypes



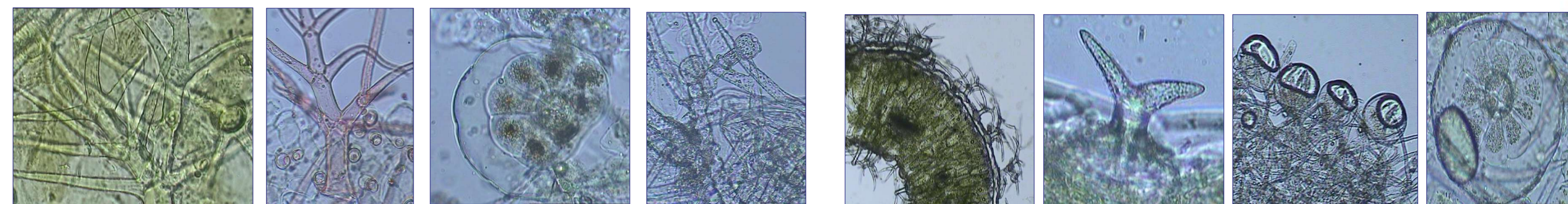
Peltate octacellular glandular trichomes

Other secretory structures

Secretory 8-cells of pelatate trichome Globules with essential oils One large globule with essential oils Capitate trichomes with long stalk Capitate trichome with short stalk Mameliform structures

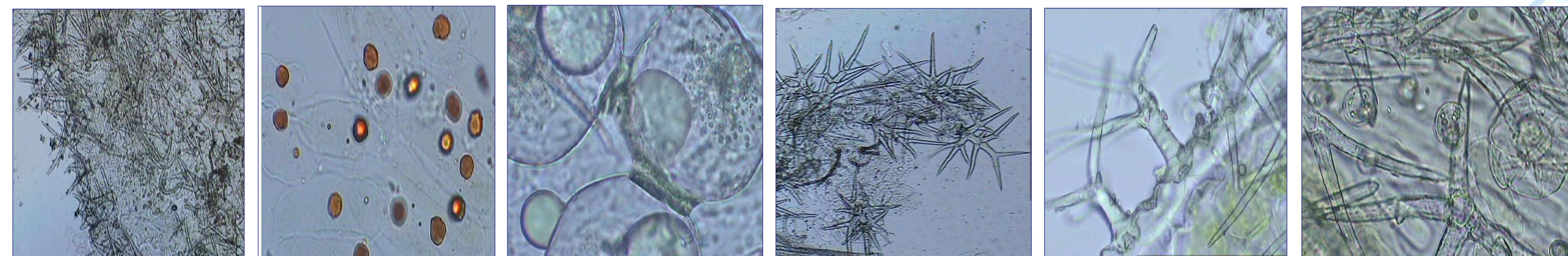
Results: The analysis of leaf micrographs of 7 new lavender genotypes, characterized by different maturation periods, allowed to highlight the structural indices to identify the potential of: 1) volatile oils accumulation – the development degree of octacellular glandular and secretory hairs (number/1cm², distribution mode on epidermis, gland dimensions); mesophilic thickness and palisade/lacunar parenchyma thickness correlation; 2) adaptation to the stressors action: the thickness of cuticle, cell walls, epidermis, leaf blade and the thickness correlation of the upper/lower epidermis, epidermis/mesophilic; development degree of the protective trichomes, mechanical elements (sclerenchymal fibers, colenchyma) and the distribution.

Specific structures for the analyzed genotypes

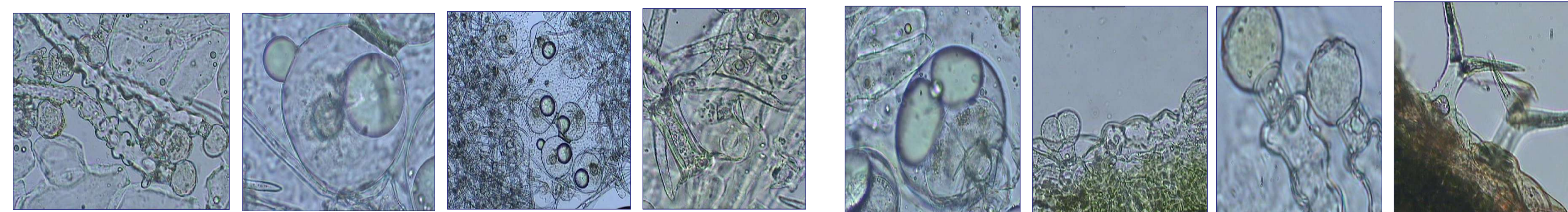


Hybrid Fr.5S8-24

Hybrid Cr.13-S-6-35

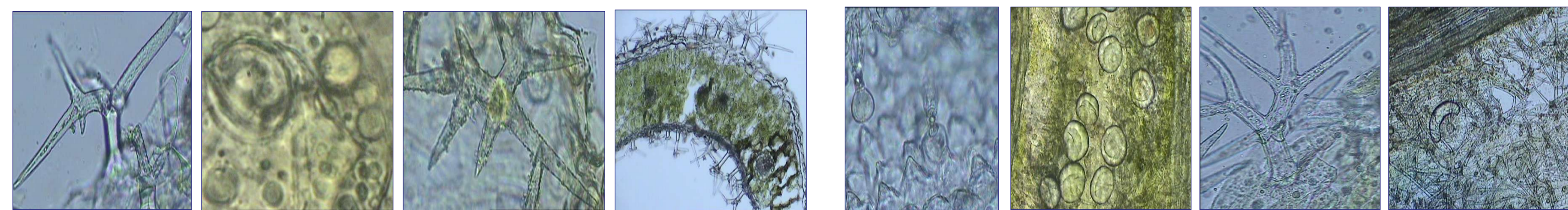


Moldoveanca 4



Fr.8-5-15V

Vis Magic 10



Alba 7

Aroma unica

Conclusions: The highlighted structural indices will serve to identify new perspective genotypes for obtaining volatile oils with adaptogenic potential to the Moldova climatic conditions.