

## MACRO AND MICROSCOPICAL STUDIES OF THE SEEDS OF *LEPIDIUM SATIVUM*, *NIGELLA SATIVA* AND *TRIGONELLA FOENUM GRACEUM*

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### ABSTRACT

This study aimed to determine the macro and microscopical structure of the seeds of three Sudanese plants used in folkloric medicine *Lepidium sativum*, *Nigella sativa* and *Trigonella foenum graceum*. Microscopical study includes prepared slides for section of the seeds and powder study, preparation of permanent slides was done using wax method technique. The transverse section of the seeds of *L. sativum* showed presence of thick testa, tegmen, alleurone layer, endosperm and embryo. The cells of the embryo are small in size and polygonal in shape. The seed of *Nigella sativa* is preceded by the epidermis which is formed cells covered by cuticle, the external layer is extended into papillae. The epidermis is followed by two layers of hypodermis. The endodermis is formed of many layers of parenchyma cells, the outer most layer of which is filled with pigmented materials. In the central region of the section is found the embryo which is very small. The seed of *Trigonella foenum graceum* is characterized by seed coat formed of epidermis formed of uniseriate cells covered by cuticle, followed by the palisade layer of malphigian cells with an un evenly thickened walls. An anatomically complex structure of the seed-coat is a general characteristic of all members of the Leguminasae. The sub epidermal is formed of many layers of thick walled lignified parenchyma tissue, the endosperm is formed of one layer of small parenchyma cells. The powders of the seeds were studied microscopically, they containing cells of the different tissues. The study will lead to correct identification, dicover of adulterance and taxonomical classification of these plant seeds.

**Keywords:** *Lepidium sativum*, *Nigella sativa*, *Trigonella foenum graceum*, seeds, macroscopy, microscopy.