

Plant Histology

Prof. Dr. N. Münevver Pınar

(10)

**c. Trichomes
(Hair)**

Some of the epidermal cells of most plants grow out in the form of *trichomes* (*hair*). The cells of the trichomes may be living or dead. They may be found singly or in groups. Trichomes have various morphological forms like papillae, hairs, scales etc. Trichomes control the rate of transpiration. They also reduce the heating effect of sunlight. They help in the protection of plant body from outer injurious agencies.

Types of Trichomes:

Trichomes are divided into non-glandular or covering hairs or clothing, glandular and stinging trichomes:

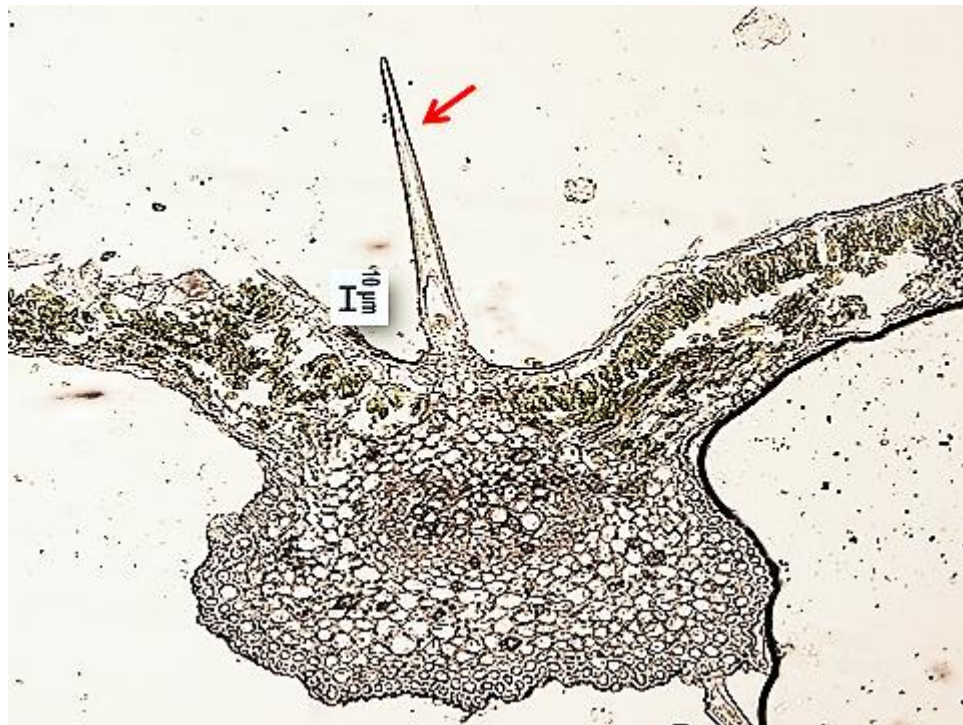
1. NON-GLANDULAR OR COVERING HAIRS OR CLOTHING TRICHOMES

They can be classified on the basis of number of cells (unicellular/multicellular) and layers (uniseriate/multiseriate).

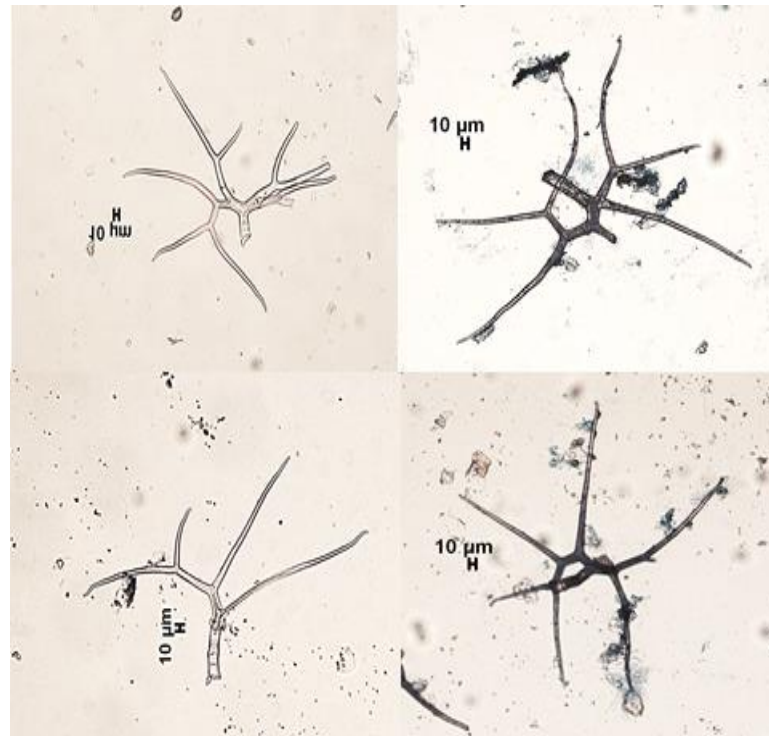
(i) Unicellular; The unicellular trichomes may be un-branched or branched.

(ii) Multicellular; Multicellular trichomes may consist of a single row of cells or several layers. The multicellular trichomes may be unbranched or branched.

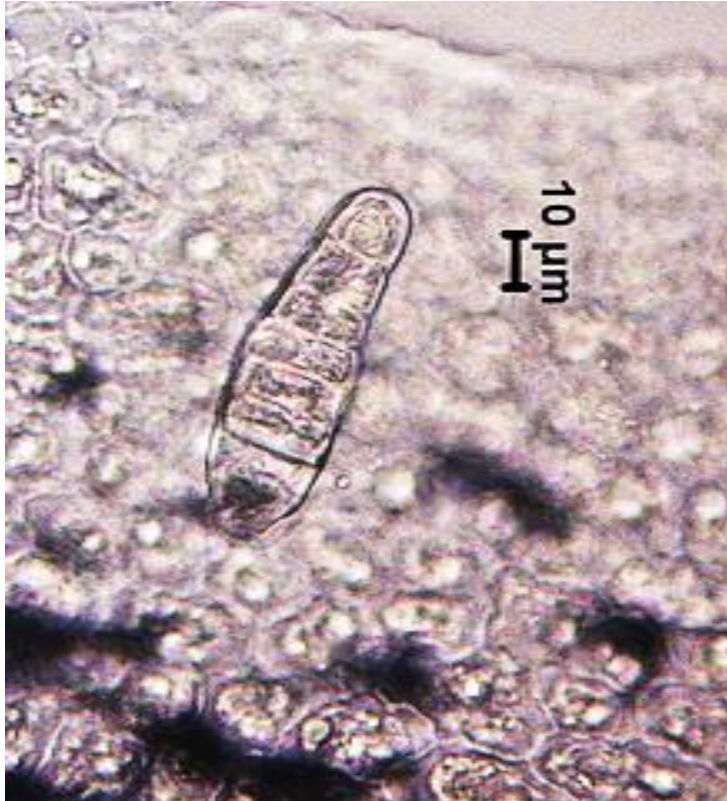
The unicellular unbranched hairs



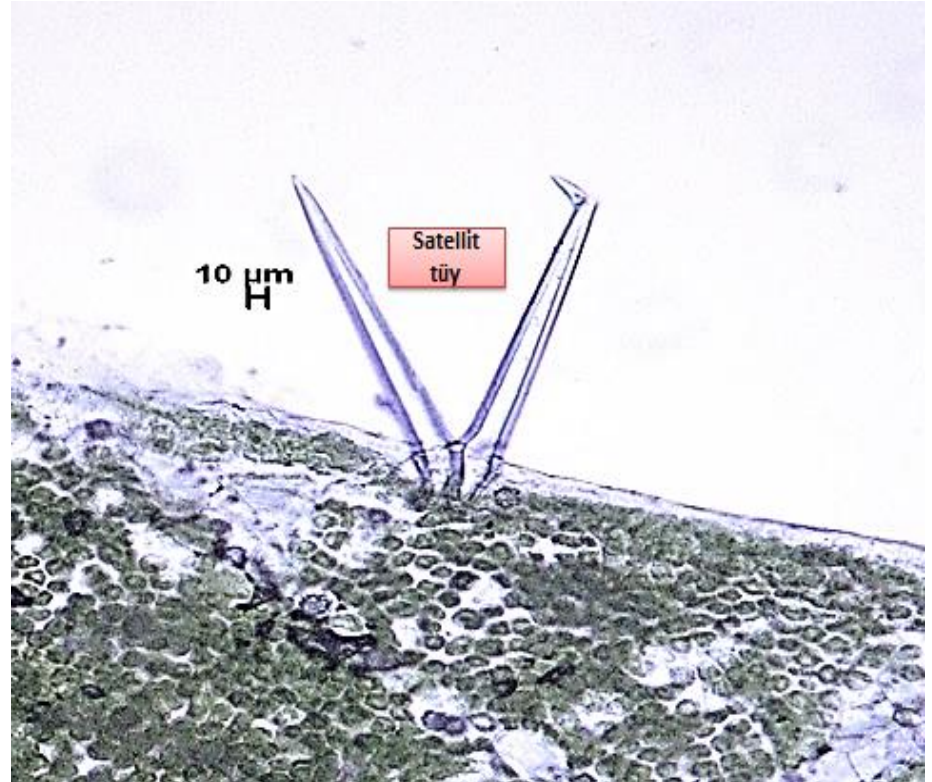
The unicellular branched hairs



The multicellular unbranched hairs



The multicellular branched hairs

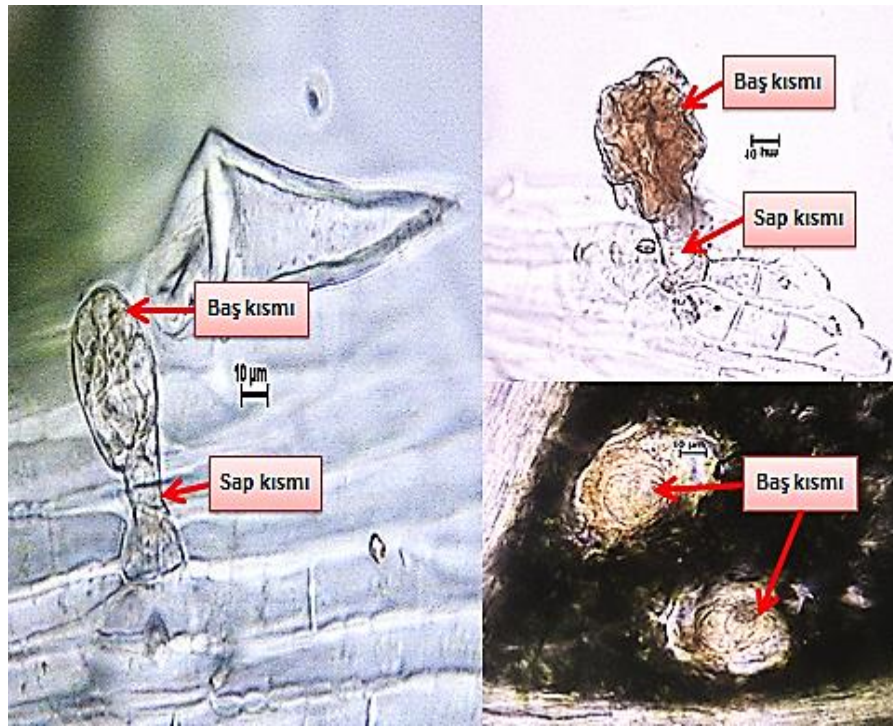


2. GLANDULAR TRICHOMES

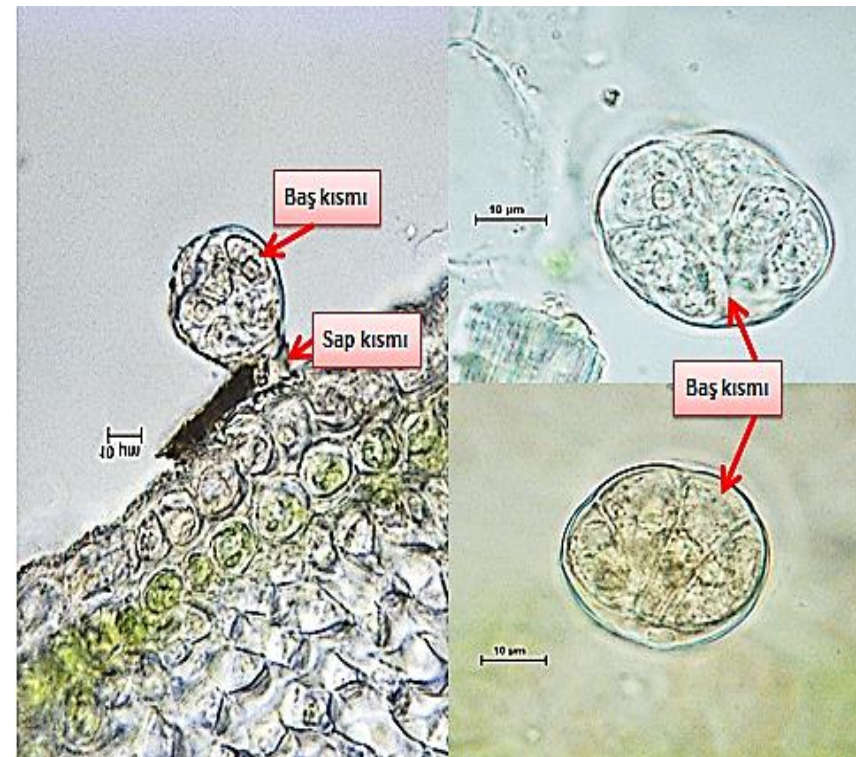
Glandular trichomes are also known as secretory and secrete water, salt, mucilage, resins, alkaloid, nectar, terpenes, etc.

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The unicellular glandular trichome



The multicellular glandular trichome



3. STINGING TRICHOMES

There is special mechanism for release of exudates in stinging trichomes of *Urtica* (nettle).

There is unicellular flask shaped trichomes with thick silicified walls.

Its secretion is rich in histamines and acetylcholine.