

light was employed. Under polarized light, the crystals appear bright against a dark background. The magnifications of the figures are indicated by the scale-bars. Descriptive terms of the anatomical features which are used here in this documentation are given in the standard anatomy books (Evans 1997).

14.2.2.3 Leaf Constants

The important identifying characteristic of leaf constants like stomatal number, stomatal index, vein-islet number and vein termination number, were found out and tabulated (Evans 1997).

14.2.2.4 Stomatal Number

The stomatal number is the average number of stomata per square mm of the epidermis of the leaf. The middle piece of the leaf was cleared by boiling with chloral hydrate solution or alternatively with chlorinated soda. The upper and lower epidermis was peeled separately by means of forceps. It was kept on a slide and mounted in glycerine. A camera lucida and drawing board was arranged for making the drawings to scale. A square of 1 mm was drawn by means of stage micrometre. The slide was placed with the cleared leaf (epidermis) on the stage. The epidermal cell and stomata was traced. The number of stomata present in the area of 1 mm² was counted. At least half of the cell's area within the square was included. The result was recorded for each of the ten fields, and the average number of stomata per sq. mm was calculated. (Evans, 1997).

14.2.2.5 Stomatal Index

The stomatal index is the percentage in which the number of stomata forms to the total number of epidermal cells, each stomata being counted as one cell. The stomatal index can be calculated by Equation 14.1 (Evans 1997).

$$\text{Stomatal index } S = S \times 100 / E + S \quad (14.1)$$

where, S = No. of stomata per unit area, E = No. of epidermal cells in the same unit area.

14.2.2.6 Vein-Islet Number

The vein-islet is the small area of green tissue surrounded by the veinlets. The vein-islet number is the average number of vein-islets per square millimetre of a leaf surface. It is determined by counting the number of vein-islets in an area of 4 mm² of the central part of the leaf between the midrib and the margin (Evans 1997).

14.2.2.7 Fluorescence Analysis

Fluorescence study is an essential parameter for first-line standardization of crude drugs. The crude powder was subjected to these studies and the fluorescence patterns were noted. The powdered materials were treated separately with different reagents and exposed to visible and ultraviolet light to study their fluorescence behaviour.