Comparative anatomical studies were carried out on in vivo plants of *Triphasia trifolia* (Burm. f.) P. Wilson and in vitro plantlets of the same age. To get the in vitro plantlets, explants were cultured on MS (Murashige and Skoog) media supplemented with different concentrations and combinations of hormones. The explant sources of *Triphasia trifolia* (Burm. f.) P. Wilson were obtained from cotyledons, leaves, stems, roots and shoot tips that were placed under conditions of 16 hours light and 8 hours dark. The optimum media for regeneration was MS supplemented with 1.0 mg/L BAP and 1.0 mg/L NAA. Cotyledon explants were found to be the most responsive. Regeneration of complete plantlets was achieved from cotyledon explants after about 4 months in culture. Sectioning was done to study the characteristics of the respective vascular bundles, shape of cells, palisade cell layers, presence of oil glands, druse and cuticle layers. Vascular bundles of in vivo leaves were extremely well developed compared to those in in vitro leaves. The vascular bundle of the in vivo leaf showed well developed xylem. However, the xylem and phloem cells of the in vitro leaf were very poorly developed which is one of the features of in vitro plants. Scanning electron microscope (SEM) studies were also carried out on the in vivo and in vitro plantlets to observe differences on the leaf surface.

**Citation**
http://www.actahort.org/books/975/975_11.htm

**Keywords**
anatomical, bundles, *Triphasia trifolia* (Burm. f.) P. Wilson, regeneration, vascular oils gland, SEM

**Language**
English

**Full text** http://www.actahort.org/members/showpdf?booknrArn=975_11

Acta Horticulturae 975

**IV International Symposium on Tropical and Subtropical Fruits**

**Article number** 975_11

**Pages** 111-117

**Groups**
- **Section Tropical and Subtropical Fruits**
- **Commission Molecular Biology and In Vitro Culture**
- **Commission Education, Research Training and Consultancy**