

# Comparative anatomical study of the grasses in the range lands of Kovilpatti, Tamil Nadu of India.

**Makesh Kumar B, Stephan J and Kumar P**

Department of Botany, G. Venkataswamy Naidu College, Kovilpatti, India.

## Introduction

In this study instead of macro-morphological characters, micro-morphological characters such as stem anatomy were investigated, because grasses are the crucial component of the rural rangeland ecology. To understand the anatomical variations during the summer and monsoon within species and also to differentiating the species with the help of supplementary characters such as number of cortical layers and vascular bundles, xylem vessel length etc. This study emphasis the adoptive anatomical characters of the selected species in the study area.

## Results and Discussion

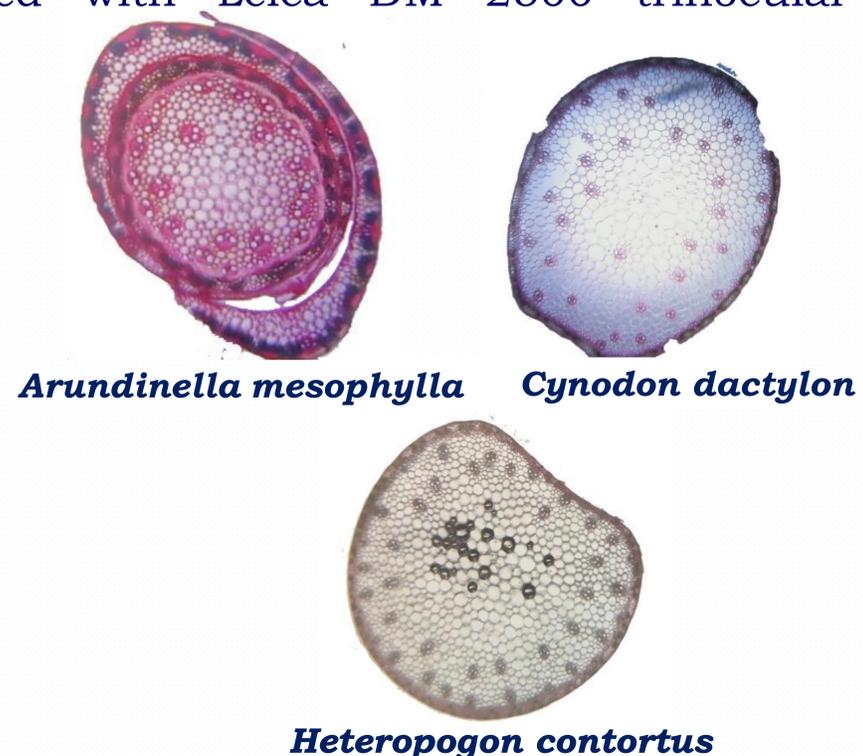
In the present study, anatomical adoption of 15 grass species has been studied and these adoptive characters are very important to tolerate the temperature in the rangeland. In rangeland multi layer of continuous layer of Sclerenchymatous tissues provide mechanical strength to the grasses when summer and it the layers often interrupted by collenchymatous tissues in monsoon. The size (diameter) of the stem does not correlate with the number of vascular bundles. However the number of vascular bundles are less (less than 20) in the grasses collected from the dry land and its more (up to 30–50) in the grasses collected from the Wetlands. Number main vascular bundle varies from the range 25-80 and also the number of major vascular bundles vary from one layer to 4 layers in the dry and wet lands.

## Conclusions

Different accessions of these 15 species, collected from cultivation fields and wetlands have more number of major vascular bundles than the accessions collected from the scrub jungle and the road side area. Among these 15 grass species the plants which have more vascular bundles on the peripheral area are very tolerant to the dry climatic condition.

## Materials and methods

The study area Kovilpatti is located in the Tuticorin district of Tamil Nadu, India. 15 species were selected for this study from the study area. The samples (second node of the stem) were collected from different sites of the study area and made hand sections with the razor blade, were stained with 1% aqueous Safranin solution for 5 minutes, washed in distilled water and the parts were mounted in glycerin (Johansen, 1940; Metcalfe, 1960). The sections were observed using a Leica DM 100 digital camera attached with Leica DM 2500 trinocular microscope.



## References

- Johenson, D. A. 1940. Plant microtechnique. Mc Graw Hill Book Co., New York.  
Metcalfe, 1960. Anatomy of Monocotyledons. vol.1 Gramineae, Oxford University Press, New York.