# MATERIAL AND METHODS

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**Study area:**

The Western Ghats is one of the hot spots of India, exhibit luxuriant vegetation. The rich biodiversity of Western Ghats is supported by lateritic flat tops commonly known as 'Plateaus'. Kas is a name of one of such 'Plateaus' located on western part of Satara District between $73^0$ 45' 3"to $73^0$ 49' 40" East longitude and $17^0$ 42' 20" to $17^0$44' 30" North latitude. It harbour a unique flora of lateritic soil at about 1213 meters above mean sea level (The highest is at 1264 meters above mean sea level) and receives about 2000-2500 mm rain fall annually. The relative humidity is normally high during the monsoon post-monsoon months. Sometimes being more than 90% that favours the growth of vegetation for a longer period during the season. It has a mean annual temperature about $24^0$ C to $30^0$ C (Annonymous, 1999).

The unique combination of climate and topography has contributed towards the rich and luxuriant vegetation of bryophytes.

A variety of bryophytes appear just after the first few showers of rain. Various natural habitats on Kas plateau were periodically visited from June 2008 to September 2009. Attempts were made to collect both gametophytes and sporophytes of different species of Liverworts and hornworts.

For the detail assessment of bryoflora of Kas plateau following steps were followed:

I. Collection of samples
II. Preservation of the material
III. Observation of the material
IV. Identification of the material:
V. Deposition of the samples:

**Collection of samples:**

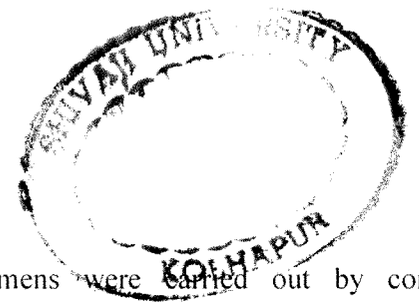
1. Plateau was visited frequently up to post monsoon months so as to collect bryophytes in every possible stage of their life cycle.
2. During visits to the study area photographs of some bryophytes were taken in their natural habitats.
3. Habitat play a key role in taxonomy of bryophytes, hence samples were collected with small piece of substratum.
4. Material was collected in polythene bags and small specimens in bottles.
5. Field notes were taken at the time of collection to report about habit, habitat and association.
6. Some specimens were maintained in live condition in laboratory by controlling the humidity artificially, in earthen pots and in green house till identification.

**Preservation of the material:**

1. Specimens were thoroughly cleaned with water.
2. Photographs of specimens were taken to record their close view with the help of Cybershot 13.16 X megapixel camera.
3. Material was fixed in FAA solution (Formalin -Acetic acid - Alcohol, 90:5:5) and 4% formalin (Barve, 1992).

**Observation of the material:**

1. External morphology has been studied under a stereoscopic binocular microscope by considering dorsal view, ventral view and arrangement pattern of thallus.
2. Hand sections were taken to observe the anatomy of the specimen.
3. Dissected parts of the plants were mounted in 30 percent aqueous glycerine. (Singh, 2006) and anatomical features were studied under compound microscope.
4. Prepared slides were mounted in 30 percent aqueous glycerine and slides were sealed with DPX.
5. Important characters were photographed.




**Identification of the material:**

1. Identification of specimens were carried out by considering their morphological and anatomical characters with the help of pertinent literature (Watson 1968, Kashyap 1972, Smith 1982, Vashista 1996 and Shirke 2002).
2. Identification of specimens were confirmed by experts Bryologist.

**Deposition of the samples:**

Identified and preserved samples and slides were deposited in Bryophyte herbarium of Depatrment of Botany of Yashavantrao Chavan Institute of Science, Satara.