



# Survey of family member of Malvaceae of Kopargoan region Dist. Ahmednagar, Maharashtra, India

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## ABSTRACT

The Malvaceae is the vast family in sense of diversity. Malvaceae is mallows family they have peculiar character of identification such epicalyx is present is key character of Malvaceae family. In this investigation we have made survey of member of malvaceae which found in study region we have selected study region was Kopargoan tehsil. The study region is located Maharashtra state in Ahmednagar District, in Kopargoan taluka with nearby villages. In this investigation we have done survey of major dominant member of malvaceae found during study time within June - December 2018. In that we have make collection of plant material during different growth phase and identify with help of available literature and make list of them. Then after identification make systematic key for that member. In this investigation we found 11 member of the family Kopargoan region dominant *Hibiscus rosa-sinensis* L., *Abelmoschus esculentus* (L.) Moench and *Thespesia populnea* L. are the member found in maximum amount in Kopargaon region followed by *Alcea rosea* L. is less in number.

**Keywords:** Malvaceae, Identification, Systematic key, Kopergoan tehsil

## INTRODUCTION

The Malvaceae or Mallows is a Family of following plants estimated to contain 243 genera with approximately 4225 Species in the world. In India members of this family recognized by many plants such as Okra, Abelmosk, Ambrette seeds, Annual hibiscus, Bamia, Moschata, Galu, Gasturi, Muskdana, Musk Mallow, Musk, Okra, Musk seed, Ornamental Okra, Rose Mallow seeds, Tropical jewel hibiscus Yorakaokra hibiscus Chinese hibiscus, In Maharashtra state it consists of 16 genera and 103 species. (Singh *et al.*, 2000).

While from Ahmednagar district 10 genus and 30 species are recorded (Pradhan and Singh, 1999). In Maharashtra some of the earliest explorer of Western India in 18th century floristic studies take place by Graham (1837) in "Catalogue of Bombay plant", which followed by the "Flora of

Bombay" by Dalzell and Gibson (1861). "Flora of presidency of Bombay" (1901-1908) continued till today will be the most important floristic work for identification of species in Bombay presidency that included Gujarat, Maharashtra, Goa, North Kanara (now in Pakistan).

The ethnomedicinal literature survey on Ahmednagar district enlisted a total of 62 medicinal plant species belonging to 32 families and the present field survey made in the tribal regions revealed 71 ethnomedicinal plants which are ascertained to 35 families (all angiosperms) used for the treatments of fever / Jvara by the locals. There are 23 plant species of 17 families found common in both studies and remaining are different (Salve 2019). Survey of succulent plants in Kopergaon region was done by collecting the information from the experienced medicinal practitioners. In present investigation it is observed about 8 Families, 10 Genus and 13 Species were identified with relevant information and documented in this paper with regard to their Botanical Name, family, Habitat, flowering Fruiting session and plant part used and medicinal properties like anti-inflammatory, antioxidant, antipyretic, anti-diabetic, anticancer etc. (Bhalerao 2018) In Malvaceae family the plant is used as medicinal purpose such as parachute oil. This family is with characters such as habit is herb, shrub and tree, usually tap root system is found, stem is aerial erect in some semi prostrate, then leaf is simple alternate with reticulate venation stipules caducous, inflorescence is raceme, flower is bisexual, hypogynous ovary, calyx and corolla is campanulate or infundibuliform, petals are 5 twisted stamens numerous, monoadelphous, anthers oblong or reniform kidney shape & one chambered ovary superior and with axile placentation. Fruit are most often loculicidal capsules or schizocarps or nuts. The present study compares the structure of the vegetative shoot apex in 40 species of the Malvaceae. There is a wide range of size, shape, and zonation within the apices of the family (Tolbert, 1966) There is very much work has been done on the family Malvaceae. However, the literature being referred for the current study is from Maharashtra and Ahmednagar district floras.

The abundance of the species of family Malvaceae and their persistence over Maharashtra states was being scrutinized in the respective research work. The flora of Maharashtra published later at around year 2000 by Singh and Kartikeyan was described with 150-180

genera and 2200-3000 species. As mentioned earlier, the family is mainly being focused with the crest of its economical uses. The earlier taxonomist who has worked with tacking this family as experimental tool. Ethnobotany is the study of how people of a particular culture and region make the uses of indigenous plant. Ethnobotanist explore how plant are used such as things as food, shelter, medicine, clothing, hunting, and religious ceremonies. These plants are known as ethnobotanical *plants*. The survey of Family Euphorbiaceae from Kopergaon tehsil is done. In this we first collection of different members of Family Euphorbiaceae from different region of Kopergaon tehsil. An extensive and intensive survey at plants was carried out from village Pathare, Derde, Pohegaon, Kopergaon, Padhegaon, Apegaon during the were collected in flowering and fruiting period throughout the year done. During survey we determine 16 members of Euphorbiaceae from Kopergaon tehsil (Rahul, 2020)

Ethnobotanical studies range across space and time, from archaeological investigation of the role of plant in ancient civilization to the bioengineering of new crop. The family Malvaceae was also been worked up on for its ethnobotanical significance and some member belonging to it was found to be of great significance in Ayurveda and medicinal botany. (Mitra *et al.* 1991; Sharma *et al.* 2001). Substantiate to these aspects, there are many botanists have worked upon the phytoconstituent evaluation and pharmaceutical implication of the family. Over all this aspect the current status of the family and its position.

## MATERIAL AND METHODS

An extensive and intensive survey at medicinal plant was carried out from Apegaon, Shirasgaon, Godhegaon, Dhotre, Pohegaon, Kolpewadi, Kopergaon, Mahagaon-Deshamukh, Korhale, Ukkadgaon, College campus during 2018-2019. Were collected in flowering and fruiting period throughout the year from the region. The method of plant collection and their identification was done through method used earlier by Salunke *et al.* (2001), Chavan *et al.* (1973) and Khairnar (2003).

The collected specimen was identified with the help of available literature, matching with standard herbarium and relevant books (Sharma *et al.*, 2001). The plant of the family mostly found in open area as well as in follow field.

## RESULTS AND DISCUSSION

### Distinguishing characters for Identification of Malvaceae Family

- Stem branched usually hairy.
- Leaves with dentals margin.
- Raceme inflorescence.
- Monoadelphous stamen.
- Syncarpous, ovary superior.
- Schizocarp or capsule type of fruit.

### DESCRIPTION

#### *Abelmoschus esculentus L. Moench.*

**Common name:** Bhendi.

Erect, short annual herbs. Leaves variously 3-9 lobed. Flowers axillary solitary, 5-8cm across. Corolla yellow with reddish center. Capsules 5-angled, woody at maturity. Seeds reniform, glabrous, greenish-brown.

**Flowering & Fruiting:** Throughout the years

**Locality:** Shirasgaon, Kopargoan

**Note:** Cultivation in farm & Common vegetable used.

#### *Abutilon indicum L.*

**Common name:**

Erect undershrub's, leaves irregularly toothed, toothed, densely pubescent flowers axillary solitary or in panicles, calyx cup shaped, corolla yellow, mericarp 16-20 bidentate at apex. 3-seeded, seeds reniform, minutely stellately hairy, brownish black.

**Flowering & Fruiting:** Throughout the years

**Locality:** Padhegaon, Kopargoan

**Note:** Common in unfertile places & field border.

#### *Abutilon pannosum forst.f. Schlecht.*

**Common name:** Kasali

Undershrub's, covered with stellate and simple hairs. Leaves 5-9 nerved at base. Flowers axillary, solitary, 3-4cm across. Petals orange-yellow often lobe at apex. Carpel 10-25, raniform, black, compressed.

**Flowering & Fruiting :** Aug -Dec.

**Locality:** Ravande Kopargoan

**Note:** Common in unfertile places & field border.

#### *Alcea rosea L.*

**Common name:**

Annual, erect herbs, leaves orbicular cordate, deeply 3-7 lobed. solitary, axillary or in terminal raceme, corolla purple in color, carpels 20-25 orbicular seed raniform, brown, minutely stellately hairy, conspicuous ribbed.

**Flowering & Fruiting:** Throughout the years

**Locality:** Kokamathan, Kopargoan

**Note:** Cultivation in garden as a ornamental used.

#### *Gossypium herbaceum L.*

**Common name:** Kapashi, white gold.

Erect annual, herbs or undershrub's stellately hairy, leaves cordately 3-5 lobed. Flower 1-3 in leaf axis. Corolla yellow with purple center. Capsule 4 locule seeds 5-7 in each locule with floss and fuzz.

**Flowering & Fruiting:** Sep- Jan.

**Locality:** Takali, Kopargoan

**Note:** Commonly cultivation in field.

#### *Gossypium hirsutum L.*

**Common name:** Kapashi, white gold.

Shrubs, stem much branched, leaves 3 lobed, flower axillary, solitary corolla yellow with purple strands, capsule ovoid, acute, glandular, pitted seeds with white floss and grayish fuzz.

**Flowering & Fruiting:** Sep- Jan.

**Locality:** Ukkadgaon, Kopargoan

**Note:** Commonly cultivation in field.

#### *Hibiscus cannabinus L. Syst.*

**Common name:** Aambada.

Erect herbs, leaves entire or palmately lobed, flower axillary, solitary or in racemes. Staminal column antheriferous through capsule dehiscing into 5 valves. Seeds reniform, brownish.

**Flowering & Fruiting:** Throughout the years.

**Locality:** Korhle, Kopargoan

**Note:** Common in cultivation, leaves used as vegetables.

#### *Hibiscus panduraeformis Burm,F.*

**Common name:** Ran Kasali

Erect hispid, much branched herbs, leaves 3-5 lobed flowers axillary, solitary or in pairs. Petals yellow, dark purple at base. Capsule broadly ovoid densely bristly, seed suborbicular, brown tomatoes.

**Flowering & Fruiting:** Sept – March.

**Locality:** Kolpevadi, Kopargoan

**Note:** Common in unfertile, rocky barren places and field borders.

#### *Hibiscus rosa-sinensis L.*

**Common name:** Jasvandi

Shrubs, stem woody, lanticillate, flower axillary solitary; pedicels longer than petioles. Corolla infundibular, blood red, stamina column antheriferous at tip.

**Table 1: List of plants from Malvaceae Juss. family from Kopargoan region**

Sr. No.	Botanical Name	Habit	Flower Color	Flowering season
1.	<i>Abelmoschus esculentus</i> L.Moench.	Herbs	Yellow with Reddish center	Throughout the year
2.	<i>Abutilon indicum</i> L.Sweet,Hort.	Shrub	Yellow	Throughout the year
3.	<i>Abutilon panosum forest</i> ,f. Schlecht.	Shrub	Yellow	Aug-Dec
4.	<i>Alcea rosea</i> L.	Shrub	Purple	Throughout the year
5.	<i>Gossypium herbaceum</i> L.	Shrub	Yellow with purple center	Sept-Jan
6.	<i>Gossypium hirsutum</i> L.	Shrub	Yellow	Sept-Jan
7.	<i>Hibiscus cannabinus</i> L.	Herb	Yellow with purple center	Throughout the year
8.	<i>Hibiscus panduraeformis</i> Burm,f.	Herb	Yellow with purple center	Sept- March
9.	<i>Hibiscus rosa-sinesis</i> L.	Shrub	Red	Throughout the year
10.	<i>Malvastrum coromandelianum</i> L.	Herb	Yellow	Sept- March
11.	<i>Thespesia populnea</i> (L.) Solana.	Small tree	Yellow or dark purple center	Sept –Dec

**Flowering & Fruiting:** Throughout the years.

**Locality:** Mahegaon-Deshamukh, Kopargoan

**Note:** Common in garden, ornamental used.

#### ***Malvestrum coromandelianum* L.**

**Common name:**

Annual erect herbs, covered with 4armed appressed stellate hairs, 2 armed of which positioning upwards and 2 downwards. Flower axillary solitary or 2-3 in cluster, petals yellow to orange. Schizocarp globular, mericarp 10-14. Seed one in each mericarp.

**Flowering & Fruiting:** Sept – March.

**Locality:** Apegaon, Kopargoan

**Note:** Common in along the road side, rocky barren places.

#### ***Thespesia popuinea* L. Solana**

Evergreen trees, leaves 7 nerved, flowers. Axillary, solitary, epicalyx segment 3 corolla light yellow with dark purple center, capsule globose seeds obovoid, angular, rounded at apex covered with yellow wish brown hairs.

**Flowering & Fruiting:** Sept- Dec.

**Locality:** College campus, Kopargoan

**Note:** wild habitat, frequently cultivated.

During the study, the survey of Malvaceae Juss. family from Kopargoan region, the plant from the study listed in the following table 1.

## **CONCLUSION**

As mentioned earlier, the above study has been carried out to know the species abundance of the member of family Malvaceae. As it is shown In the above observation table 1 member of the family Kopargoan region were based on which the above data is generated. *Hibiscus rosa-sinensis* L., *Abelmoschus esculentus* (L.) Moench and *Thespesia populnea* L. are the member found in maximum amount in Kopargoan region followed by *Alcea rosea* L. is less in number. The current survey states that the variation in the climatic and geographic condition also changes the flowering and fruiting period of the species and their number from the study area.

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