ABSTRACT
This paper highlights the medicinal use of *Andrographis paniculata* to cure fever. In Indian folk tradition, medicinal uses of *A. paniculata* have a long-standing reputation as a treatment for fever and were used to treat liver disorders. The species was considered good as a healthy liver tonic and antioxidant. Its vernacular name is given in Vedas as ‘Kalmegh’, which means dark clouds. The plant has an intense bitter taste so ‘Kalmegh’ is also known as King of bitter.


During the major part of the year, climate of Western Uttar Pradesh is influenced largely by the prevalence of dry air of the continental type, the summer being intensely hot and winter cold. Meerut district experiences a subtropical monsoon type of climate characterized by a seasonal rhythm produced by the southwest and northeast monsoons. In this area, soil is mostly loamy; in some areas it is sandy loam, silty loam and clay loam occasionally meet within the area.

INTRODUCTION
The Indian system of Ayurvedic medicine is an old as our history and has formed an integral part of the Indian tradition since time immemorial. In Indian folk tradition, the medicinal use of *Andrographis paniculata* has a long-standing reputation as a treatment for fever and was used to treat liver disorders. The species was considered good as a healthy liver tonic and antioxidant. Its vernacular name is given in Vedas as ‘Kalmegh’, which means dark clouds. The plant has an intense bitter taste so ‘Kalmegh’ is also known as King of bitter.

The present paper is based on the survey and collection of data from the native informants, who are Vaidhya or Hakim (Ayurvedic medicine practitioners) and rural people who have knowledge about Ayurvedic medicine with their local name. Oral interviews were held in villages and information recorded at the spot. Medicinal plants were collected and preserved for the future use.

MATERIALS AND METHODS
The present paper is based on the survey and collection of data from the native informants, who are Vaidhya or Hakim (Ayurvedic medicine practitioners) and rural people who have knowledge about Ayurvedic medicine with their local name. Oral interviews were held in villages and information recorded at the spot. Medicinal plants were collected and preserved for the future use.
Description of Species
An erect, annual herb, growing to a height of 110 cm tall, extremely bitter in taste in every part of the plant. The branches are dark green, 0.3–1.0m in height, 2–6mm in diameter, quadrangular with longitudinal furrows and winged on the angles of young parts. Leaves glabrous, ovate-lanceolate, 5-10 × 1.5-2 cm. Inflorescence a lax, axillary and terminal, unilateral raceme, forming a panicle. Bracts opposite. Flowers small, white with rose-purple spots on petals. Capsules linear-oblong, acute at both ends. Seeds numerous, yellowish brown-whitish, spotted with rose-purple. Flowering and fruiting period December-April (Fig. 1). Locality: Meerut field area in moist shady places. Tomar 304.

Vernacular names
Assamese: Kalmegh; Bengali: Kalmegh, Mahatita; Dogri: Kala Chriyat, Kala Chiriyata, Kiyat, Kryata; English: Creat, Kariyat; Gujarati: Kalukariatum, Kariyatu, Kirayto; Hindi: Kalmegh, Kiyat, Hara Chirayata, Kirayat, Charayeta, Mahattia; Kannad: Nelaburu, Nelabaevu; Konkani: Vhadlem Kiraytem, Malayalam: Nelaveppu, Kiriyattu, Nilavaepu, Olenkirayat; Manipuri: Bhubati; Marathi: Chimani, Olikiryata, Olenkirayat; Mizo: Hnakhapui; Oriya: Bhuinimba; Punjabi: Charaita; Tamil: Nilavemu, Nilavembu, Pitumbay; Telugu: Nelavemu, Nilavemu, Neelavimu, Sanskrit: Bhunimba, Yavatikta; Santali: Kalmegh.

Major chemical constituents
The plant has been subjected to extensive phytochemical studies which led to the isolation and identification of bitter principle of the plant as trihydroxy lactone ‘Andrographolide’ and ‘Kalmeghin’ (Dey 1998). It was later established as trihydroxy lactone with one tertiary hydroxyl group and finally structure of Kalmeghin in the area. Therefore, study was conducted and revealed that A. paniculata is used as Ayurvedic medicine for the treatment in fever. The drug ‘Kalmegh’ has a very important role in folk and traditional systems of medicine. It is frequently found in sandy loam soil as an annual herb. These medicines are prepared by various methods as decoction, infusion, tincture and local people have been using these methods in the various treatments as Covid-19 infection inhibition by A. paniculata (Kalmegh) infusion, decoction, tincture, juice and leaves also fed orally with water and provide strength to the body and immune system. Therefore, a study revealed that A. paniculata is used as Ayurvedic medicines in some of Uttar Pradesh. The information were based on the detailed oral interviews held with Vaidyas, Hakims and elderly village people, who know medicinal uses of Kalmegh in the area. Therefore, study was conducted and revealed that A. paniculata is used as Ayurvedic medicine in the Meerut district of Uttar Pradesh.Earlier researchers did not mention the method of preparation, its medicinal use, time and dosage. We have collected information through questioners, informal interviews and discussions involving 285 people (Fig. 2) both fresh and dried leaves were used in the proportion of 25 and 57%, respectively for treating fever (Fig. 3) decoction, infusion, Juice and tincture were prepared from kalmegh in deferent proportions (Fig. 4).

Method to preparation of medicine
(a) An infusion is prepared with fresh leaves (10-12) per cup of boiling water, infused for 10 minutes and kept it covered with lid during the steeping period, then strained through a strainer and drunk. It is not to be left for too long, as it can become bitter and too strong. The standard dosage for an infusion is 250 ml 3-4 times a day for 15 days.

(b) Crushed leaves (2tsp) in one cup of normal water, is boiled gently in a saucepan with the lid on and left to simmer for about 5 minutes. The decoction is strained through strainer, cooled, and ready to drink. Decoction must be used on the day of preparation. The standard dosage for a decoction is 250 ml twice a day for 15 days.

(c) Fresh leaves (50 gms) are placed in a glass jar with tight fitting lid and 500 ml ethyl alcohol is added to it. It is kept for two weeks with occasional shaking, then strained and stored in a glass bottle with tight lid. 8-10 drops are administered thrice a day for 15 days or until cure. The tincture remains viable for two years.

(d) Fresh juice of plant is given in doses of 2-3 teaspoonfuls twice a day for 15 days.

(e) 3-4 leaves of Kalmegh with normal water are consumed twice a day for 10-15 days.

Results and Discussion
The species has been identified as A. paniculata (Kalmegh) and it is cultivated in field areas and private gardens in rainy season. It occurs throughout the country as a herb during winter. Now it’s also being cultivated. Studies revealed that A. paniculata is used as Ayurvedic medicine for the treatment in fever. The drug ‘Kalmegh’ has a very important role in folk and traditional systems of medicine. It is frequently found in sandy loam soil as an annual herb. These medicines are prepared by various methods as decoction, infusion, tincture and local people have been using these methods in the various treatments as Covid-19 infection inhibition by A. paniculata (Kalmegh) infusion, decoction, tincture, juice and leaves also fed orally with water and provide strength to the body and immune system. Therefore, a study revealed that A. paniculata is used as Ayurvedic medicines in some of Uttar Pradesh. The information were based on the detailed oral interviews held with Vaidyas, Hakims and elderly village people, who know medicinal uses of Kalmegh in the area. Therefore, study was conducted and revealed that A. paniculata is used as Ayurvedic medicine in the Meerut district of Uttar Pradesh. Earlier researchers did not mention the method of preparation, its medicinal use, time and dosage. We have collected information through questioners, informal interviews and discussions involving 285 people (Fig. 2) both fresh and dried leaves were used in the proportion of 25 and 57%, respectively for treating fever (Fig. 3) decoction, infusion, Juice and tincture were prepared from kalmegh in deferent proportions (Fig. 4).
**Medicinal Use of Andrographis paniculata (Kalmegh)**

Andrographis paniculata is a medicinal plant that is used in Ayurvedic medicine systems. It is used in the form of infusion, decoction, tincture, and fresh juice. The plant parts used are mainly dried leaves and fresh leaves. The study revealed that Andrographis paniculata is used as Ayurvedic medicines which have no side effect and are easily available at minimum rates.

During the survey, the author collected the new information based on the detailed oral interviews. It has been realized that medicinal plants will play an important role in the future of the medical system. These medicines are prepared by various methods such as infusion, decoction, tincture, and fresh juice to cure fever and provide strength to the body organs and immune system. Now the people shifting to Ayurvedic medicine systems, these medicines are prepared by various medicinal plants will play an important role in the future of the medical system.

**Analytical study**

Open questionnaires, informal interviews and group discussion received data. Author has collected 285 total individual information from 165 informants. Most of the information has received by vaidyas and elderly people followed by common people. The data indicates that many of the informants are using the infusion, decoction and tincture in the area for the against fever.

**Conclusion**

During the survey, the author collected the new information based on the detailed oral interviews. It has been realized that medicinal plants will play an important role in the future of the medical system. These medicines are prepared by various methods such as infusion, decoction, tincture, and fresh juice to cure fever and provide strength to the body organs and immune system. Now the people shifting to Ayurvedic medicine systems, these medicines are prepared by various medicinal plants will play an important role in the future of the medical system.

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Questions regarding the local uses of plant species, distribution, plant parts used, method of crude drug preparation, use for ailments, dose (duration of the treatment were also included in the questionnaire).

**References**


