

## Effect of different organic manures and spacing on quality and soil fertility status on Kalmegh-Panchang (*Andrographis paniculata* Wall. Ex. Nees.) under middle Gujarat conditions

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### SUMMARY

Kalmegh (desi kariatu) is a substitute of Nepali kariatu (*swita chiruta*). Kalmegh can easily grown in the Gujarat as wild. Due to short supply and poor quality of kalmegh, it is necessary to cultivate in the field. Regular cultivation of kalmegh is started in the Gujarat during the year 2002. Ayurveda is an ancient science of life. Which has a strong philosophical basis. Ayurveda is a dynamic phenomenon that offers multifaceted approaches for healing. It comprises of knowledge about the plants that are primarily based on the past experiences and present uses in India, more as living tradition. Significantly higher andrographolide content was observed under the treatment of organic manures *i.e.* FYM 10 t/ha and Spacing *i.e.* 30 x 45 cm (1.39 and 1.40%, respectively). Interaction effect of FYM @ 10 t/ha with wider spacing of 30cm x 45cm had recorded higher 1.5% andrographolide content noted higher amount of andrographolide content. Application of FYM 10 t/ha also recorded significantly higher organic carbon, available N, P and K.

**Key words :** Organic manures, Panchong, Aromatic plant, Spacing, Kalmegh

**K**almegh is widely used in Indian traditional system of medicine against different ailments. It is reported that this plant possesses astringent, anodyne, tonic and alexipharmic properties which are useful in curing no. of diseases, *viz.* dysentery, cholera, diabetes, influenza bronchitis, piles, hepatomegaly, skin disorder, fever and worm. Kalmegh also shown its efficiency to control HIV-AIDS. "Panchang", the five parts of the plant *i.e.*, stem, leaf, flower, seed and root are being used in the various formulations of Indian system of homeopathic as well as ayurvedic medicines. The plant has properties like bitter acrid, cooling, laxative, antipyretic, anti-inflammatory, expectorant digestive and stomachic. The major bitter constituent in the kalmegh is due to the presence of diterpene lactone called "andrographolide". Other important constituent is a non-bitter compound neo-andrographolide and its medicinal uses.

### MATERIALS AND METHODS

A field experiment was conducted during, *Kharif* season of the year 2007 at Medicinal and Aromatic Plant Project Research farm, Anand Agricultural University, Anand, Gujarat. To study the "Effect of different organic manures and spacing quality and soil fertility status of kalmegh – panchang (*Andrographis paniculata* Wall.ex.Nees) under middle Gujarat conditions". The soil of the experimental plot was loamy sand in texture having good drainage with 7.6 soil pH.

Sixteen treatment combination consisting of four levels of organic manures *viz.*, (M<sub>0</sub>) control, (M<sub>1</sub>) FYM @ 10 t/ha, (M<sub>2</sub>) castor cake @ 1 t/ha and (M<sub>3</sub>) Vermicompost @ 2 t/ha and four spacing treatments *viz.*, (S<sub>1</sub>) 30cm x 15cm, (S<sub>2</sub>) 30cm x 30cm, (S<sub>3</sub>) 30cm x 45cm and (S<sub>4</sub>) 30cm x 60cm were tested under split plot design with four replications.

### RESULTS AND DISCUSSION

The results obtained from the present investigation are presented below:

#### *Effect of organic manures:*

Difference in andrographolide content was due to different organic manures found significant. Among different treatments, treatment M<sub>1</sub> (FYM @ 10 t/ha) recorded significantly higher andrographolide content % in kalmegh, being at par with treatment M<sub>0</sub> (Control), treatment M<sub>2</sub> (castor cake @ 1 t/ha) and M<sub>3</sub> (Vermicompost @ 2 t/ha) were remained at par with each

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