

To compare the effectiveness of biochemic preparation Kalium Sulphuricum 6x versus conventional method in the growth of Capsicum Annuum: A Randomized controlled Trial.

Dr.Swanand Shukla, Dr.R.T.Kundu, Dr.Sahar Singh, Dr.Kirti Kadam, Dr.Snehalata Patil, Dr. Aditi Shinde, Dr.Shrusti Kokate, Dr. Sayali Gamne, Dr. Arbaaz Khan.

ABSTRACT

Background: Argo Homoeopathy enhancing the growth and cultivation of plant without soil and water contamination. As chilli (*C.annuum*) is one of the most valuable crop of India .It plays an important role in diet ,medicinal properties and mainly in improving economic conditions of farmers especially marginal and small farmers, and as both K and S plays an important role accelerating growth of plant and prevent low yield. **Objectives:** 1)To compare the difference between growth of plant receiving kalium sulphuricum 6x and conventional method 2) To compare yield between plants receiving kalium sulphuricum 6x versus conventional method. **Material and methods:** 46 samples of capsicum annum selected, 23 were administered kalium sulphuricum 6x i.e group C and 23 were on conventional method ie groupD. Growth parameters measure 15 days interval. **Result:** Plants provided with Kalium sulphuricum 6x (Group C) compare to Nonmedicated ie plants receiving conventional method (Group D) show prominent increased height and no.of leaves reflected in statistic as t value being 4.512 which is significant to indicate positive result for height, t value of 4.047 for no. of leaves. Total yield of medicated group was 39.13% and group which is on conventional method was 4.34%.**Conclusion:** Findings suggest homoeopathic biochemic preparation kalium sulphuricum 6x enhances growth of capsicum annum plant compared to conventional method.

Keywords: Homoeopathic medicine, conventional method, Capsicum annum, kalium sulphuricum 6x, biochemic preparation.

Introduction:

Capsicum annum is the most widely cultivated Capsicum species in India, valued for both pungent and non-pungent varieties. India leads global chili production, contributing about 40%. To meet demand, farmers heavily use chemical fertilizers, which has led to water pollution and disrupted soil-microbe balance, threatening long-term soil fertility and sustainability. (1)

Agro-homoeopathy is a branch of homoeopathy that treats plants with highly diluted natural substances. It supports plant health from seed to harvest by enhancing growth, boosting resistance to pests and diseases, and promoting natural defenses. This eco-friendly approach offers a sustainable, chemical-free alternative in agriculture. [2].

Homoeopathic preparations offer an eco-friendly and affordable alternative for growing medicinal plants without contaminating soil or water. They support ecological balance and are accessible to farmers and researchers. However, more research is needed to understand their impact on the plants' phytochemical composition [3].

Homoeopathic preparations are increasingly used in agriculture for their natural benefits. They enhance bioactive compounds in medicinal plants, detoxify heavy metals, boost growth and yield, support plant metabolism, and strengthen disease resistance. This sustainable approach reduces chemical use and promotes healthier, more productive crops [4].

Potassium (K) is a vital macronutrient for plants, essential for water and nutrient transport, enzyme activation, and energy production. It regulates stomatal function, aiding in gas exchange and water conservation. A deficiency leads to stunted growth and reduced crop yields, making adequate potassium crucial for healthy, productive plants [5].

Sulphur is an essential nutrient for plants, vital for synthesizing proteins, amino acids, and vitamins. Plants mainly absorb it as sulfate (SO_4^{2-}), though it's prone to leaching. Sulphur also acts in stress signaling and metabolism. Uptake occurs via sulfate transporters and symbiotic microbes. Adequate Sulphur is crucial for plant health and the nutrition of animals and humans relying on plants [6].

Material and Methods:

The present study is designed as a Randomized Controlled Trial and was conducted at Motiwala (National) Homoeopathic Medical College, Nashik, over a period of six months. The method of selection of study subjects included specific inclusion and exclusion criteria. The inclusion criteria comprised non-hybrid *Capsicum annuum* seeds (specifically, the Pusa Jwala variety) and the use of good quality organic potting soil. The exclusion criteria ruled out the use of hybrid capsicum seeds, soil treated with chemical fertilizers or pesticides, and any diseased plants. The study aimed to compare the growth and yield of *Capsicum annuum*

plants in two groups, using this comparison as the matching criterion. The tools used for measurement included a measuring tape and photographic documentation. A total of 46 saplings of *Capsicum annuum* were selected using the convenience sampling technique

Methodology:

This was a Randomized controlled Trial for a duration of 6 months. We had included non-hybrid capsicum annuum seeds (pusa jwala), good organic potting soil. Hybrid capsicum seeds, Chemical fertilisers or pesticide used soil or Diseased Plant these were excluded. After the germination the saplings were replanted into individual pots. Based on predefined inclusion and exclusion criteria, a total of 46 healthy saplings were selected. These saplings were randomly assigned into two groups: the experimental group, which received *Kallium sulphuricum* 6X, and the control group, which was managed using conventional agricultural methods. The primary parameters observed for growth assessment included shoot length (in centimetres), measured using a measuring tape, and the number of leaves per shoot. These parameters were recorded every 15 days throughout the study period. The dose and potency were selected ,8-tab dissolve in 1 lit. of water and 50 ml from the solution applied to root of each plants. At the end of six months, the growth and yield data of both groups were collected for final assessment. Data were manually recorded from each labelled pot during every follow-up using a standardized growth monitoring format. For statistical analysis, an unpaired t-test was applied to compare the mean values between the experimental and control groups, aiming to determine the significance of the observed differences.

Result and Statistical analysis:**1 Comparative analysis of average height**

Average Height of Medicated Plants	Average Height of plants Receiving Conventional Method
43.087	32.484

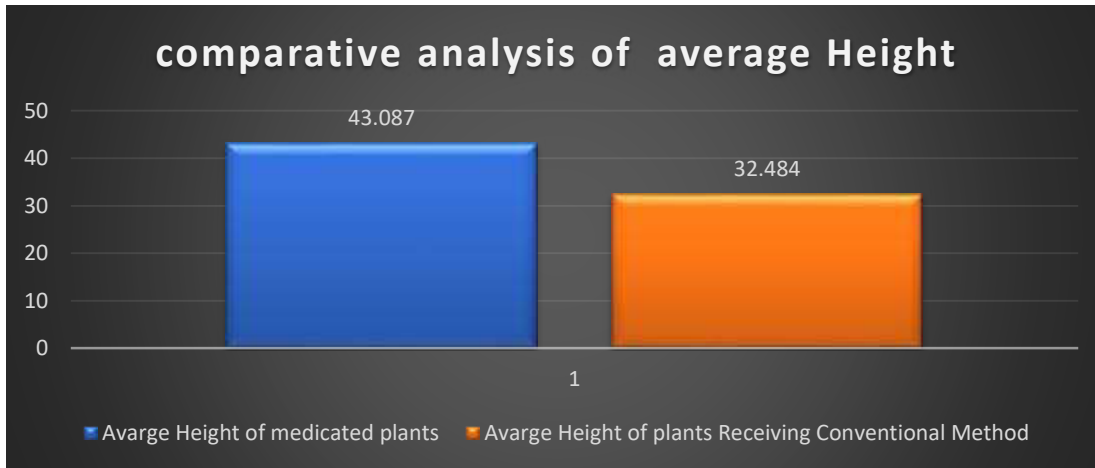


Table value of t for 44 degrees of freedom is 2.015 at 5% (0.05) level of significance. Rejected null hypothesis. Since calculated value t is (4.512) is greater than table value (2.015).

2Comparative analysis of average no. of leaves

Average No. of Leaves of Medicated Plants	Average No. of Leaves of plants Receiving Conventional Method
53.3478	33.3043

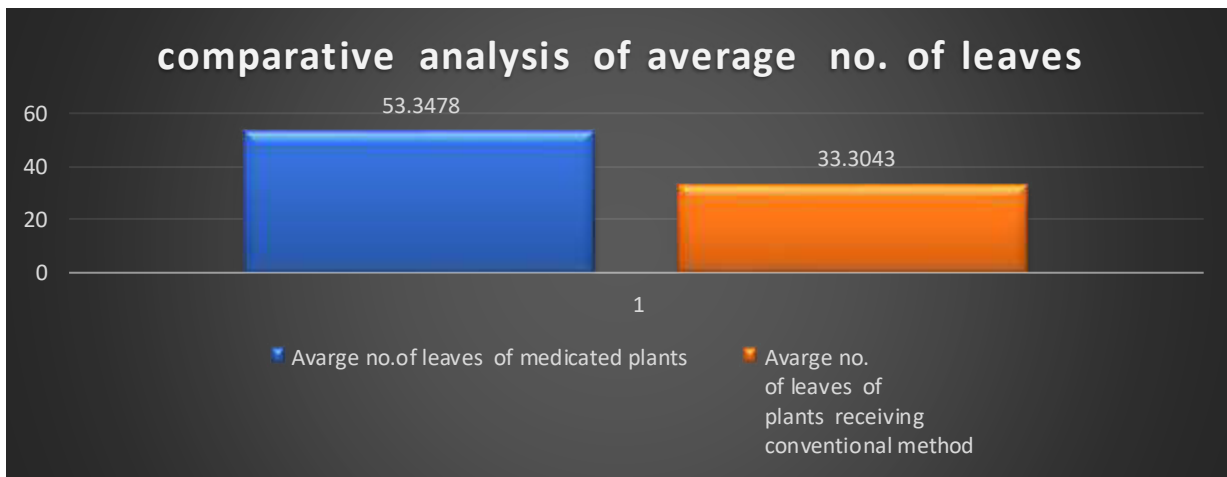
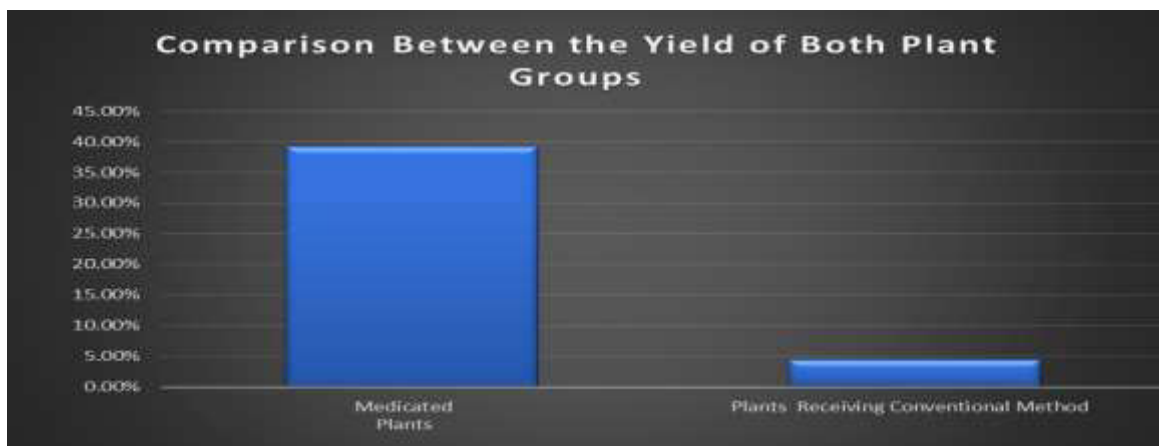


Table value of t for 44 degrees of freedom is 2.015 at 5% (0.05) level of significance. Rejected null hypothesis. Since calculated value t is (4.047) is greater than table value (2.015)

3 Comparative analysis of yield

Group	Total no of plants	% Giving Fruit
Medicated Plants	9	39.13%
Plants Receiving Conventional Method	1	4.34%



Result:Plants provided with Kalium sulphuricum 6x (Group C) compare to Non medicated ie plants receiving conventional method (Group D)show prominent increased height and no.of leaves reflected in statistic as t value being 4.512 which is significant to indicate positive result for height, t value of 4.047 for no.of leaves.This suggest considerable improvement in growth of plants with medicated treatment ie Kalium Sulphuricum 6x.The total yield of medicated group (Group C) was 39.13% and that group which is on conventional method was (Group D) 4.34%. This suggest considerable improvement in fruits production with the Medicated treatment ie Kalium Sulphuricum 6x.

Discussion: A randomized controlled trial with 46 Capsicum annum saplings evaluated the impact of Kalium Sulphuricum 6X versus conventional methods, assessing growth and yield over six months. Fruiting was significantly higher in the treated group (39.13%) than in the control (4.34%), indicating enhanced reproductive development. Treated plants showed superior growth, with higher leaf count (53.35 vs. 33.30) and greater height (43.09 cm vs. 32.48 cm), suggesting improved vigor and vitality. Benefits may stem from improved metabolic activity, nutrient uptake, and stress resistance due to potassium and sulphur known

physiological roles. Kalium Sulphuricum 6X shows potential as a sustainable growth enhancer in organic agriculture, promoting both yield and vegetative development.

Conclusion:

The use of Kali Sulph 6x (a biochemic homoeopathic remedy) has been observed to stimulate better growth in capsicum by providing essential nutrients and improving physiological processes. The treatment over six months positively impacted capsicum plants, enhancing growth and development. Based on its effects, Kali Sulph 6x may also have potential applications in improving the growth of other crops. However, further systematic studies and trials are required to confirm its broader agricultural efficacy.

Limitations of study: Small sample size limits applicability; broader trials and physiological studies are needed to confirm effectiveness and understand mechanisms.

Conflicts of Interest: There were no conflicts of interest reported by the researchers involved in this study.

Acknowledgment:

We express our heartfelt gratitude to our principal Dr.F.F. Motiwala and the entire faculty of Motiwala Homoeopathic Medical College for their invaluable guidance and support throughout this research. Our sincere thanks to all the panel teachers for their help and guidance throughout the year in each and every aspect of our work. Finally, we would like to convey our gratitude to our parents and colleagues for their precious support

Reference:

1) SR A. An experimental study on effectiveness of biochemic preparation Kalium phosphoricum 6X in growth of Capsicum annuum. Homoeopathic Journal. 2017; 6(3): 851

<https://www.homoeopathicjournal.com/articles/612/6-3-17-851.pdf>

2) Mondal B, Mukherjee A, Kunchiraman BN, Jagtap S, Ghate VU. An Agro-Homoeopathic Evaluation Of Antagonistic Activity Of Secale Cornutum Against Phytopathogenic Fungus 'Claviceps Purpurea' On Wheat Crop. Pharmacology & Pharmacy Research. 2023; 14(3): 11.

doi: 10.47750/pnr.2023.14.03.11

<https://www.pnrjournal.com/index.php/home/article/view/7013>

3) Pereira MMA, Martins ADM, Morais LCC, Dória J, Cavalcanti VP, Rodrigues FA, et al. The Potential of Agro-homeopathy Applied to Medicinal Plants —A Review. Journal of Agricultural Science. 2019; 11(4): 500. doi: 10.5539/jas.v11n4p500

<https://doi.org/10.5539/jas.v11n4p500>

4) Singh PK, Singh R, Kumar S. Effectiveness of homoeopathic drug Zincum metallicum 6C on plant growth of Raphanus sativus in natural environment. International Journal of Homoeopathic Sciences. 2020; 4(3): 151-154. doi: 10.33545/26164485.2020.v4.i3c.204

<https://doi.org/10.33545/26164485.2020.v4.i3c.204>

(5) Prajapati K, Modi HA. The importance of potassium in plant growth – a review. Indian Journal of Plant Sciences. 2012; 1(2-3): 177-186.

<https://www.researchgate.net/publication/304246278> THE IMPORTANCE OF POTASSIUM IN PLANT GROWTH - A REVIEW

6) Narayana OP, Kumar P, Yadav B, Dua M, Johri AK. Sulfur nutrition and its role in plant growth and development. Plant Signaling & Behavior. 2023; 18(1): e2030082. doi:

10.1080/15592324.2022.2030082 <https://doi.org/10.1080/15592324.2022.2030082>

7) Dr.J.V.Dixit, Principal and Practice of Biostatistics by Dr.J.V.Dixit