

A Comparative Study on The Effectiveness of Homoeopathic Medicine Urea Pura 30c and Urea Fertilizer for the Yield of Solanum Lycopersicum (Tomato)

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Abstract—Background: Agro-Homoeopathy is an emerging field exploring the use of potentized homoeopathic remedies in agriculture. Solanum lycopersicum (tomato) is an important vegetable crop, and alternative approaches to chemical fertilizers are gaining interest.

Objective:

The study aimed to compare the effectiveness of Urea pura 30C and Urea fertilizer on the growth of Solanum lycopersicum.

Methods:

A comparative experimental study was conducted for 50 days using 30 healthy tomato seeds divided into two groups. Group A received Urea pura 30C, while Group B received Urea fertilizer. Plant height and foliage were assessed at regular intervals under identical environmental conditions.

Results:

Group A showed higher average plant height (17.2 cm) and foliage (160) compared with Group B (15.8 cm and 136), with 8.86% variation in height and 17.65% variation in foliage.

Conclusion:

Urea pura 30C showed a positive effect on the vegetative growth of Solanum lycopersicum and indicates potential for further investigation as an alternative approach in sustainable agriculture.

I. INTRODUCTION

Homoeopathy is a branch of universal medicine based on the principle of 'Similia similibus Curentur' (like cures like). The only method of applying medicines profitably in disease is homeopathic method. In the present era, the branch of agro homoeopathy is getting new wings. V D Kaviraj is a

dutch homoeopath and pioneer in agro-homoeopathy. After his tremendous work on agro homoeopathy, the subject became a matter of scientific research. It is the most chemical free, nontoxic method of growing food and other crops.

Tomato (Solanum Lycopersicum) is the most widely grown fruit in India. India is the second largest tomato producers in the world. To meet this demand, the farmers rely solely on chemical fertilizer with an NPK ratio of 5 - 10 - 10. But over a period of time, we started experiencing the damaging effect of chemical applications. Recent artificial fertilizers and agro chemicals have been found to have a quantitative growth impact on plantation but at the same time reduces the quality and nutritional properties of crops. Thus, it is required to use more natural and harmless ways to produce and increase yielding capacity in agricultural industry.^[12]

Farmers and researchers started working on renovation of organic farming techniques. Among these techniques Biodynamic farming incorporated the principles of Homoeopathy which is based on the law of minimum dose and law of dynamization. Potentised Homoeopathic medicine can alter the physiological activities of plant. It makes the plant resistant to disease and pest by triggering the inherent self-defense mechanism of plants and strengthening them from the inside.^[9]

II. MATERIALS AND METHODS

Study Design and Setting:

A prospective, randomized, controlled comparative

study was conducted at Alva's Homoeopathic Medical College, Mijar (Google Plus Code: 2XC9+MC), for 50 days total. Sample Selection:

Required quantity of seeds will be procured from Krishi Bhavan Palakkad.

Inclusion criteria:

- Solanum Lycopersicum seeds will be procured from Krishi Bhavan Palakkad.

- The seedlings exhibiting uniform size and growth will be selected.
- Plants at the same growth stage (2-3 true leaves stage) will be selected.

Exclusion criteria:

- Plants damaged during transplantation, handling or by animals
- Plants grow in locations with unequal exposure to sunlight, waterlogging or shade.

Sample size and group allocation

POT GROUP	SEEDLINGS	SIZE	POST GERMINATION IRRIGATION	SIZE
Group – A (Experimental Group)	Potable Water	15 Agro plastic bags	Water mixed with Urea 30C	15 Plants
Group – B (Experimental Group)	Potable Water	15 Agro plastic bags	Water mixed with Urea fertilizer	15 Plants

All groups received daily irrigation (once per day) with their respective solutions. No fertilizers were added to any group. All groups received identical sunlight, air, and routine care.

- Homoeopathic medicine Urea pura 30C has no significant effect compared to Urea fertilizer for the yield of Solanum Lycopersicum.

III. RESEARCH QUESTION

- Is there any significant role of Homoeopathic medicine Urea pura 30C or Urea fertilizer for the yield of Solanum Lycopersicum?

ALTERNATE HYPOTHESIS:

H1: Homoeopathic medicine Urea pura 30C is more effective than Urea fertilizer for the yield of Solanum Lycopersicum.

H2: Urea fertilizer is more effective than Homeopathic Medicine Urea pura 30C for the yield of Solanum Lycopersicum

NULL HYPOTHESIS

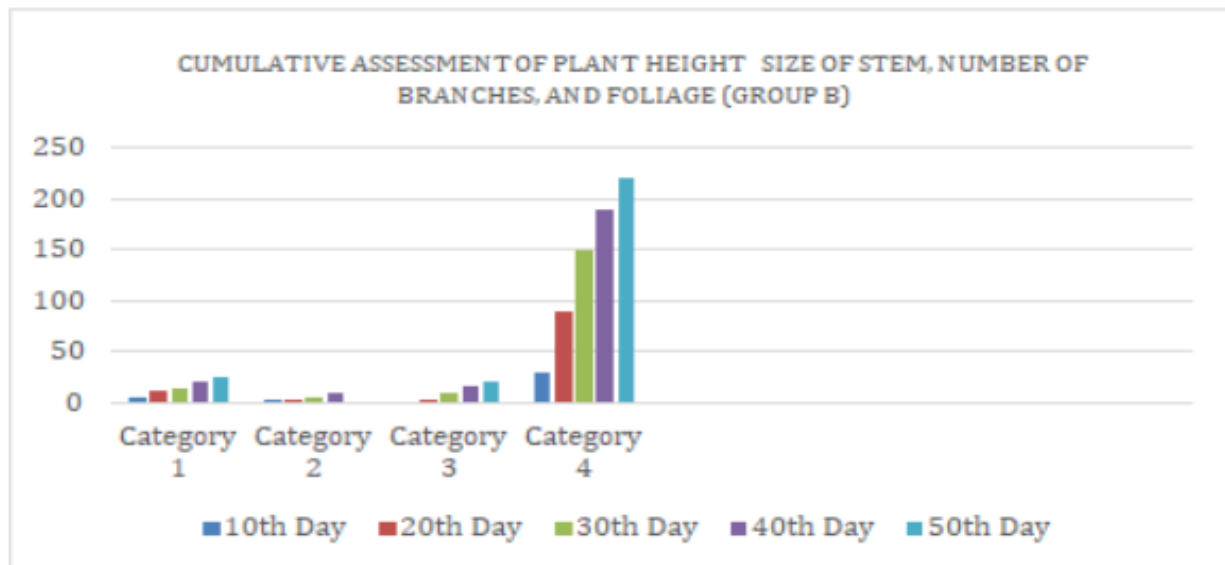
GROUP A

Number of days	10 th Day	20 th Day	30 th Day	40 th Day	50 th Day
Plant height in cm (every 10 th day from germination)	6cm	12cm	15cm	20cm	26cm
Size of stem (every 10 th day)	03mm	04mm	06mm	09mm	12mm

from germination)					
Number of branches (every 10 th day from germination)	2	4	9	17	20
Average Foliage /Number of leaves (every 10 th day from germination)	30	90	150	190	220

GROUP B

Number of days	10 th Day	20 th Day	30 th Day	40 th Day	50 th Day
Plant height in cm (every 10 th day from germination)	3cm	12cm	15cm	20cm	36cm
Size of stem (every 10 th day from germination)	03mm	04mm	06mm	09mm	14mm
Number of branches (every 10 th day from germination)	2	4	8	18	24
Average Foliage /Number of leaves (every 10 th day from germination)	30	90	180	220	280

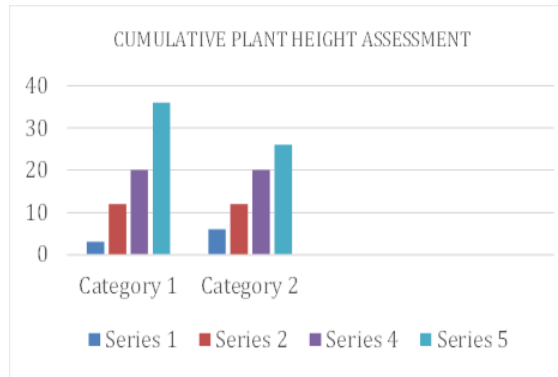


CUMULATIVE ASSESMENT OF PLANT HEIGHT, SIZE OF STEM, NUMBER OF BRANCHES AND FOLIAGE (GROUP A)

The graph shows a progressive increase in all growth parameters in Group B from the 10th to the 50th day. The

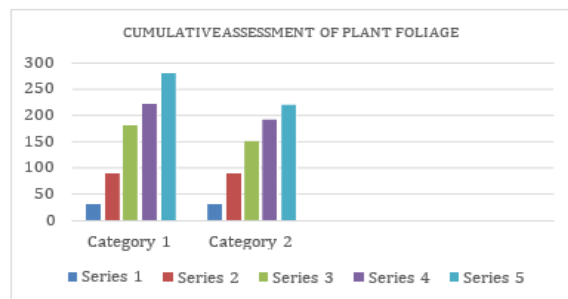
average plant height was 15.8 cm, and the average foliage was 136 leaves/plant. Overall, Group B showed consistent plant growth and vegetative development during the study period

NUMBER OF DAYS	10TH DAY	20TH DAY	30TH DAY	40TH DAY	50TH DAY
GROUP A	3cm	12cm	15cm	20cm	36cm
GROUP B	6cm	12cm	15cm	20cm	26cm



COMPARING AVERAGE HEIGHTS OF GROUP A VS AND The graph compares the average plant height between the two groups. Group A had an average height of 17.2 cm, compared with 15.8 cm in Group B, indicating greater plant growth in Group A

NUMBER OF DAYS	10TH DAY	20TH DAY	30TH DAY	40TH DAY	50TH DAY
GROUP A	30	90	180	220	280
GROUP B	30	90	150	190	220



COMPARING AVERAGE PLANT FOLIAGE GROUP A VS GROUP B The graph compares the average plant foliage between the two groups. Group A had an average foliage of 160 leaves/plant, compared with 136 leaves/plant in Group B, showing greater foliage development in Group A

IV. DISCUSSION

The present study was conducted to compare the effect of Urea Pura 30C and conventional urea

fertilizer on the growth and yield of *Solanum lycopersicum*. Tomato is a nutrient-demanding crop, and nitrogen is one of the major nutrients required for vegetative growth, chlorophyll formation, protein synthesis and overall plant development. Conventional urea fertilizer is widely used as a nitrogen source in agriculture because of its relatively high nitrogen content and rapid availability to plants under suitable soil conditions.

In the present investigation, the experimental plants were divided into two groups, with Group A receiving Urea Pura 30C and Group B receiving conventional urea fertilizer. The plants were maintained under comparable experimental conditions, allowing the growth and yield parameters of the two groups to be observed and compared.

The observations obtained during the study showed a positive response in Group A. The plants treated with Urea Pura 30C exhibited comparatively better overall growth than the plants in the conventional urea

fertilizer group. The difference was observed in the growth characteristics assessed during the experimental period and was also reflected in the yield-related observations. The comparatively greater development of the plants in Group A indicates that the treatment used in this group was associated with a favourable response under the conditions of the present study.

The improved growth observed in Group A may be considered in relation to the overall physiological development of the plants. Adequate and balanced plant growth depends not only on nutrient availability but also on several interacting factors, including soil properties, moisture, temperature, sunlight, microbial activity and plant developmental stage. Since these factors can influence plant growth, the observed difference between the two groups should be interpreted in the context of experimental conditions.

An important finding of the present study was the comparatively higher yield observed in the Urea Pura 30C group. Yield is a major indicator of agricultural productivity, and improvement in vegetative growth does not necessarily result in increased fruit production. Therefore, the positive response observed in both plant growth and yield in Group A is noteworthy within the scope of this experiment.

The findings of the present study differ from what would traditionally be expected solely from the known nutritional role of conventional urea fertilizer. Conventional urea supplies nitrogen in a measurable and established chemical form, whereas Urea Pura 30C is prepared through the homeopathic potentization process and is not expected to provide nitrogen as a conventional fertilizer dose.

V. CONCLUSION

Based on the observations obtained during the experimental period, Group A, which received Urea Pura 30C, showed comparatively better plant growth than Group B, which received conventional urea fertilizer. The positive response was observed in the growth parameters assessed during the study and was also reflected in the yield-related observations. Thus,

under the conditions of the present experiment, Urea Pura 30C demonstrated a comparatively favourable effect on the growth and productivity of *Solanum Lycopersicon*.

The findings are of interest because conventional urea fertilizer and Urea Pura 30C differ substantially in their nature and mode of preparation. Conventional urea is an established nitrogen fertilizer that provides a measurable source of nitrogen to plants. In contrast, Urea Pura 30C is a homeopathic preparation and cannot be considered nutritionally equivalent to conventional urea fertilizer. Therefore, the improved growth observed in the Urea Pura 30C group should be considered as an experimental observation rather than evidence that Urea Pura 30C provides nitrogen to plants in the same way as urea fertilizer.

The present study provides positive preliminary findings regarding the response of tomato plants to Urea Pura 30C. However, results obtained from a single experimental study are not sufficient to establish a definitive biological mechanism or to conclude that Urea Pura 30C is superior to conventional urea fertilizer under all agricultural conditions.

The results showed that Group A had a higher average plant height (17.2 cm) and greater foliage (160 leaves/plant) compared with Group B (15.8 cm and 136 leaves/plant), representing an 8.86% variation in plant height and a 17.65% variation in foliage between the two groups.

Further investigations are recommended with more of plants, adequate replication, different soil types and environmental conditions, and longer observation periods. Statistical evaluation of the growth and yield parameters should also be performed to determine the significance of the differences observed between the treatment groups. Additional studies involving soil nutrient analysis, physiological parameters, biochemical markers and plant tissue analysis may help to understand the factors associated with the observed response.

ANNEXURES

DAY20 GROUP A



DAY30 GROUP A



DAY50 GROUP A



DAY50 GROUP B



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