



### RESEARCH ARTICLE

## GROWTH AND YIELD RESPONSE OF PAK CHOI (*BRASSICA RAPA*) TO DIFFERENT FOLIAR FERTILIZERS UNDER PROTECTED CULTIVATION

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### Abstract

The experiment was conducted to determine the growth and yield response of pak choi (*Brassicarapa var. Chinkang Genghis Khan*) to different foliar fertilizers (viz. vermitea, commercial foliar fertilizer, effective microorganisms [EM-1] and natural farming inputs [NFI]) under protected cultivation. It aimed to evaluate the influence of the different foliar fertilizers on pak choi in terms of growth characteristics, yield components, and pests and disease incidence. Similarly, to conclude which among the foliar fertilizers evaluated will be most economical for pak choi production. The study was done in the DA-ATI IV-A and LSPU Organic Agriculture Learning Site in the Laguna State Polytechnic University, Siniloan, Laguna in December 2015 to February 2016. A total of 300 plants were used as experimental units in the study. Every treatment was replicated three times and each replication has 10 polyethylene bags planted with two plants each. Data was collected and analysed with the use of the Duncan's Multiple Range Test (DMRT). Results revealed that the foliar fertilizers used have no remarkable effect on the weekly height, weekly growth rate, length of leaves, and shoot root ratio of pak choi. Nevertheless, commercial fertilizer significantly increased the mean number of leaves (7.53cm), width of leaves (15.10cm), economic and biological yields (105.10 grams and 106.88 grams, respectively) of pak choi compared with the rest of the treatments, except for vermitea which produced a comparable width of leaves (15.04cm). Also, a significantly lower number of the damaged leaves caused by loopers (*Trichoplusia ni* Hübner) was noted on plants treated with commercial foliar fertilizer (0.51 leaf per plant). The highest net income was obtained by commercial foliar fertilizer-treated plants, but plants treated with vermitea earned the highest return of investment (ROI). Therefore, the utilization of vermitea in pak choi production can reduce the cost of fertilizer and contribute to an economical production system under protected cultivation.

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**Introduction:-**

The experiment was conducted to determine the growth and yield response of pak choi (*Brassicarapa var. Chinkang Genghis Khan*) to different foliar fertilizers (viz. vermitea, commercial foliar fertilizer, effective microorganisms [EM-1] and natural farming inputs [NFI]) under protected cultivation. It aimed to evaluate the influence of the different foliar fertilizers on pak choi in terms of growth characteristics, yield components, and pests and disease incidence.

Similarly, to conclude which among the foliar fertilizers evaluated will be most the economical for pak choi production. The study was done in the DA-ATI IV-A and LSPU Organic Agriculture Learning Site in the Laguna State Polytechnic University, Siniloan, Laguna in December 2015 to February 2016. A total of 300 plants were used as experimental units in the study.

Every treatment was replicated three times and each replication has 10 polyethylene bags planted with two plants each. Data was collected and analysed with the use of the Duncan's Multiple Range Test (DMRT).

**Results:-**

Revealed that the foliar fertilizers used have no remarkable effect on the weekly height, weekly growth rate, length of leaves, and shoot root ratio of pak choi.

Nevertheless, commercial fertilizer significantly increased the mean number of leaves (7.53cm), width of leaves (15.10cm), economic and biological yields (105.10 grams and 106.88 grams, respectively) of pak choi compared with the rest of the treatments, except for vermitea which produced a comparable width of leaves (15.04cm). Also, a significantly lower number of the damaged leaves caused by looper (*Trichoplusiani*Hübner) was noted on plants treated with commercial foliar fertilizer (0.51 leaf per plant). The highest net income was obtained by commercial foliar fertilizer-treated plants, but plants treated with vermitea earned the highest return of investment (ROI).

**Conclusions:-**

Therefore, the utilization of vermitea in pak choi production can reduce the cost of fertilizer and contribute to an economical production system under protected cultivation.