

**ANALISIS MODEL PERTUMBUHAN TANAMAN PADA SISTEM  
PENGELOLAAN LIMBAH RUMAH TANGGA TIPE  
SAFE WATER GARDEN**

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**INTISARI**

Penelitian ini bertujuan untuk mempelajari penerapan sistem *safe water garden* (SWG) sebagai sistem pengelolaan limbah rumah tangga. SWG terdiri dari satu *septic tank* (500 L) dan sebuah kebun (3 x 2 m<sup>2</sup>) sebagai bidang pelindian. Tiga jenis SWG yaitu SWG I, II, dan III berbeda dalam hal kedalaman dan konstruksi pipa yang diterapkan di tiga vegetasi yang berbeda. Di SWG I, kedalaman pipa dari permukaan adalah 40 cm ditanami pisang. Di SWG II, kedalaman pipa adalah 40 cm dari permukaan ditanami jagung. Di SWG III, dua pipa keluar dari tangki septik yang diterapkan pada 30 cm dari permukaan ditanami cabai. Kebun lain ditanami pisang, jagung, dan cabai sebagai kebun kontrol. Selama dua bulan parameter pertumbuhan tanaman seperti tinggi, jumlah dan warna daun tanaman diukur setiap minggu. Hasil penelitian menunjukkan tanaman di semua sistem SWG tumbuh lebih baik daripada tanaman di kebun kontrol. Namun, nilai b daun pisang pada SWG I, jumlah dan nilai L dan b daun jagung pada SWG II, serta tinggi dan jumlah daun cabai pada SWG III lebih baik di kebun kontrol. Jarak tanaman dari pipa *outlet* mempengaruhi parameter jumlah daun dan nilai L daun pisang pada SWG I. Hasil juga menunjukkan bahwa parameter tinggi dan jumlah daun tanaman dapat dimodelkan menggunakan Analisis Regresi Linear Berganda, sedangkan parameter nilai Lab tidak dapat.

**Kata kunci :** *Safe Water Garden*, Pertumbuhan Tanaman, Analisis Regresi Linear Berganda

## **ANALYSIS OF PLANT GROWTH MODEL ON HOUSEHOLD WASTE MANAGEMENT SYSTEM WITH SAFE WATER GARDEN TYPE**

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### **ABSTRACT**

This research aimed at studying the application of safe water garden (SWG) system as household waste management systems. The SWG consisted of one septic tank (500 L) and a garden (3 x 2 m<sup>2</sup>) as a leaching field. Three types of SWG namely SWG I, II, and III which were different in terms of the depth and construction of the pipes were applied in three different vegetations. In the SWG I, the depth of pipe from the surface was 40 cm planted with banana. In the SWG II, the depth of pipe was 40 cm from the surface planted with corn. In the SWG III, two pipes out from the septic tank were applied at 30 cm from surface planted with chili. Another garden were planted with banana, corn and chili as a control garden. For two months plant growth parameters such as height, number and color of plant leaves were measured weekly. Result showed the plants in all SWG system grew better than the plants in the control garden. However, b value of banana leaf on SWG I, number and value of L and b of corn leaf on SWG II, as well as height and number of chili leaves on SWG III were better on the control garden. Distance of plants from outlet pipe affected the parameter of leaf number and L value banana leaf on SWG I. Results also showed that parameters of height and number of plant leaves could be modeled using Multiple Linear Regression Analysis, whereas the parameter of Lab values could not.

**Keywords :** Safe Water Garden, Plant Growth, Multiple Linear Regression  
Analysis