

Utilization of Pineapple Waste for Vermicompost Production



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INTRODUCTION

Pineapple is a common tropical fruit that can be grown throughout the year in Thailand. A lot of waste in form of leaves, residual pulp and peels is generated in the market. Without good management, it could contribute environmental pollution.

OBJECTIVE

This study aims to utilize the pineapple waste for vermicompost production. The study compared the efficiency of waste reduction and nutrient of vermicompost using pineapple waste via vermicomposting systems during a 45 days period. Chemical properties of compost and vermicompost from pineapple waste and number and growth of earthworms from pineapple waste were studied.



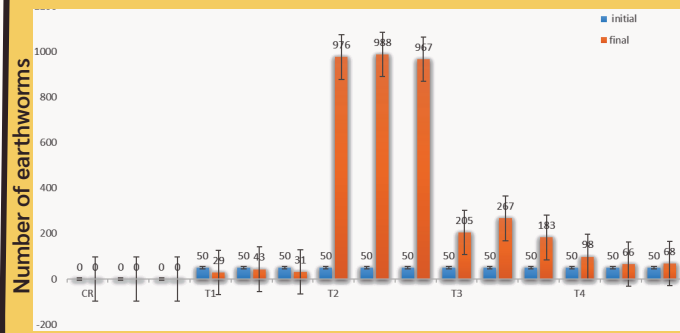
METHOD AND MATERIAL

The experiment was set up in Completely Randomized Design (CRD) with 3 replications consisted of
 Control Treatment : 40% soil + 10% pineapple peel, no earthworms,
 Treatment 1: 40% soil + 10% pineapple peel + 50 earthworms,
 Treatment 2: 40% cow manure + 10% pineapple peel + 50 earthworms,
 Treatment 3: 40% soil + 30% cow manure + 20% rice husk biochar + 10% pineapple peel + 50 earthworms,
 Treatment 4: 40% soil + 30% cow manure + 20% coconut husk + 10% pineapple peel + 50 earthworms.
 The CRD was planned for 3 replications of 5 samples.

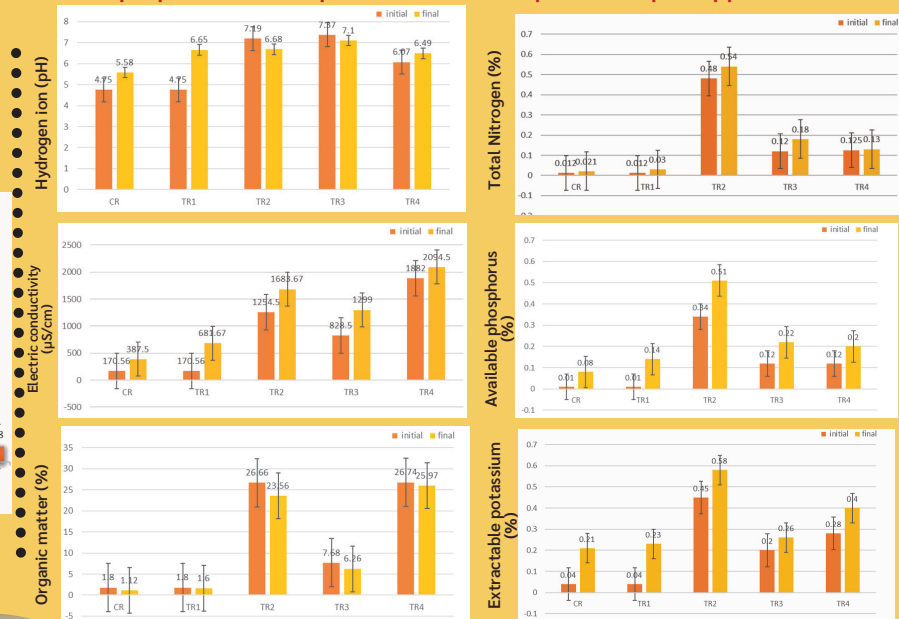
Chemical properties	Analysis	References
pH (1:5 H ₂ O)	Std. Glass electrode	Black (1965)
EC (1:10 H ₂ O) (dS/m)	Soil bridge	Black (1965)
OM (%)	Walkley and Black	Jackson (1960)
Total N (%)	Kjeldahl method	Walkley and Black (1934)
Available P (%)	Bray No. II	Cottenie (1980)
Exchangeable K (%)	Atomic Absorption Spectrophotometer	Black (1965)

RESULTS

The number of earthworms and after 45 days of experimentation.
 Initial total the number of earthworms were 50 (100%).
 After 45 days The number of earthworms values were -45.5% (TR1), 1,854% (TR2), 336.6% (TR3), 168.6% (TR4)



Chemical properties of compost and vermicompost from pineapple waste



CONCLUSION

The results showed that after 45 days, the treatment of using 40% cow manure + 10% pineapple peel gave the highest growth of earthworms and increased the total number of earthworms by 1,854%. For vermicompost quality, total nitrogen, phosphorus and potassium increased significantly higher than compost systems and pH found significantly decreased. Therefore, pineapple waste could be managed in economical way by utilization for vermicompost production.



Acknowledgement

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