Performance evaluation of improvised organic fertilizers in the yield of cash crops: Its economic contribution to farmers in Tawi-Tawi province southern Philippines

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Today's farming activities relies on fertilizers. Fertilizers are becoming more important and common resource in today's farming society as many farmers and individuals use it frequently in their farms be it small-large scale faming. But, it is well known that fertilizers can greatly damage the environment as a result of the contamination and toxic waste pollution in soils it creates more particularly the commercialized inorganic fertilisers.

One of the most damaging yet poorly managed types of pollution caused by inorganic fertilizers is soil pollution and contamination which can be caused by a wide variety of factors such as improper use and over use of chemical fertilizers over the period of time in a particular place. Fertilizer pollution and contamination in soil can go on to severely impact plants, animals and eventually humans which totally destroys ecological diversity.

Bioremediation is an effective, efficient and increasingly popular method of removing contaminants from polluted soil. This is one of the identified methods that degrade pollutants with naturally occurring organisms. This can permanently remove the pollution at a very least expenses unlike the commonly used methods.

This contains naturally occurring organisms that can degrade pollutants in soils which can be enthused by a wide variety of collected materials capable of introducing more nutrients to the soils and therefore stimulate more pollutant degrading organisms, as demonstrated and confirmed in several studies the positive effects of bioremediation. This study contemplates improvised organic fertilizers as one bioremediation process to help regain soil fertility and ecological stability of the farming environment.

However, the possibility of using improvised organic fertilisers which are known to bring together essential nutrients to the soil has not been heavily researched though this solution holds a lot of potentials as it could solve two significant global issues (pollution and food waste).

Sea Urchins Spines, Banana Peels, Papaya Peels Extract and Fish remains are common food wastes that commonly serve no further purpose once the food is consumed. A bioremediation solution that utilises these materials could significantly help withstand economic and ecological stability of the farming environment. This study gives feedback on the importance of the improvised organic fertilizers as it enhances economic and ecological contribution to both farmers and farming. These were measured on the growth and yield two common crops (corn and peanuts) and incomes of the farmers.

Four kinds of cash crop used in this experimental study to include peanut, bellpepper and string beans distributed to four different concentrations of improvised organic fertilizers such as "Concentrated Mixture of Ripe Banana Peels and Papaya Extract for peanut, Concentrated Mixture of Triturated Sea Urchin Spines and Basil Extract for Bellpepper, Concentrated mixture of Algae and Wild Basil Extract for Corn, and Concentrated mixture of FFAA and Seaweed Extract for String beans".

An RCBD (Randomised Complete Block Design) was used to analyse the data where it resulted good responses of crops in terms of yield and thus increased the income of the local farmers. As the yield of each crop increases, the income tends to increase as well.

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