

1-2 PAGE EXECUTIVE SUMMARY/ DESCRIPTION

Category: Creative Research Category (Likha Award)
Name of School: Gusa Regional Science High School
Title of Entry: Different Mixtures of Banana Peelings as Growth Enhancers for Plants

<p>A. Scope of the Study</p> <p><i>(What is the coverage of the study? What are the limitations?)</i></p>	<p>The study will only be utilizing the leftover banana peelings of the banana sticks project by Dapin, A. The project is only limited to the Sab-a banana peelings residue of the said study.</p>
<p>B. Significance of the Study</p> <p><i>(What is the rationale or reason to justify the conduct of the study based on the need to accomplish set objectives; statistical support data; literature survey of previous studies; and completed research results and recommendations?)</i></p>	<p>This product and study will be useful to both agricultural sectors and consumers. It promotes the utilization of what used to be thought as useless material into a useful one. Since banana ranked second as the most used fruit in the Philippines, its peelings that usually come along with the fruit is identified to have properties such as calcium to help in soil fertility. When mixed with soil, it can also cause the formation of chlorophyll according to Kristi Stone (2018).</p>
<p>C. Advantage over Previous Researchers</p> <p><i>(How is the study different from previous researchers? Do the benefits outweigh the costs incurred in the implementation of the project?)</i></p>	<p>Waste disposal is a heavier issue than food processing. Instead of throwing these wastes or letting them decompose, converting them into a fertilizer is a better option. Furthermore, it is cheaper than the commercial fertilizers.</p>

<p>D. Methodology</p> <p><i>(What are the methods and procedures based on a sound experimental design and/or ethical research protocols, standard analyses, ex. physicochemical, microbiological, statistical?)</i></p>	<p>First, the researchers gathered all the banana peelings. Next, the banana peelings were dried under the sun until the color darkened. Then the sun-dried banana peelings were ground using the coarse grinder. The ground banana peelings were separated into three portions. Fertilizer 1 was the ground dried banana peelings and packed in plastic package while the other two portions were further processed through fermentation. Fertilizer 2 was then fermented with 250ml of molasses while Fertilizer 3 was fermented with 250ml of molasses and ½ tsp. of limestone powder in 10 days. Lastly, the fermented fertilizers were placed in 500ml jars. The fertilizers were then applied to <i>Brassica rapa</i> (pechay), <i>Citrus limon</i> (lemon) and <i>Capsicum annuum</i> (sili). Growth was then observed.</p>
<p>E. Results</p> <p><i>(What are the significant and conclusive research findings that further prove or disprove previous studies?)</i></p>	<p>Based on the statistical findings, the researchers conclude that the different mixtures of banana peelings as growth enhancer are effective.</p>

Table 1. Sample 1. Banana peel (Sab-a) fermented with water within 10 days.

Sample		Test Method Used	Test Requested	Result
Kind/Type	Description			As Received
FOLIAR	Banana Peel (Sab-a) fermented with water within 10 days; sample 1	(Iron Reduced) Kjeldahl	Total Nitrogen (% N)	0.06
		Vanadomolybdate	Total Phosphorus (% P205)	<0.007
		Flame Photometry	Total Potassium (% K20)	0.03
		By calculation	Total NPK	0.09
		Potentiometric	pH	4.54

Table 2. Sample 3. Banana peel (Sab-a) 250 ml. Molasses/ 500 fermented banana peel.

Sample		Test Methos Used	Test Requested	Result
Kind/Type	Description			As Received
FOLIAR	Banana Peel (Sab-a) 250 ml. Molasses / 509 fermented banana peel; sample 3	(Iron Reduced) Kjeldahl	Total Nitrogen (% N)	0.22
		Vanadomolybdate	Total Phosphorus (% P205)	<0.007
		Flame Photometry	Total Potassium (% K20)	1.02
		By calculation	Total NPK	1.24
		Potentiometric	pH	4.24

Table 3. Sample 4. Banana peel (Sab-a) dry banana peel 100 grams, 250 ml. Molasses, ½ teaspoon limestone powder.

Sample		Test Methos Used	Test Requested	Result
Kind/Type	Description			As Received
FOLIAR	Banana Peel (Sab-a) dry banana peel 100 grams, 250 ml. Molasses, ½ teaspoon limestone powdert; sample 4	(Iron Reduced) Kjeldahl	Total Nitrogen (% N)	0.30
		Vanadomolybdate	Total Phosphorus (% P205)	0.00
		Flame Photometry	Total Potassium (% K20)	1.52
		By calculation	Total NPK	1.82
		Potentiometric	pH	4.42

Table 4. Sample 2. Banana peel (Sab-a) dry peel, dry.

Sample		Test Methos Used	Test Requested	Result	
Kind/Type	Description			As Received	Oven-dried
ALLEGED ORGANIC	Banana Peel (Sab-a) dry peel, sample 2, dry	(Nitrate free fertizlizers) Kjeldahl	Total Nitrogen (% N)	0.92	1.05
		Vanadomolybdate	Total Phosphorus (% P205)	0.01	0.01
		Flame Photometry	Total Potassium (% K20)	3.79	4.31
		By calculation	Total NPK	4.72	5.37
		Gavrimetric	Moisture (%)	12.10	
		Potentiometric	pH	6.53	

