

**DOST-PCAARRD Director's Council Meeting**18<sup>th</sup> Regular DC Meeting | September 19, 2024**EXECUTIVE BRIEF**

New Project

<b>Nature of Request</b>	New For Funding																		
<b>Project Title</b>	<b>Biological and Ecological Approaches for Coconut Pest Management (BEACON) of the Asiatic Palm Weevil and Spike Moth Infesting Hybrids and Parentals, a uGREAT Project</b>																		
<b>Project Leader / Implementing Agency</b>	<b>Dr. Justine Bennette H. Millado</b> Department of Pest Management, Visayas State University (VSU)																		
<b>Duration Request</b>	<b>18 months (1.5 years)</b> (October 1, 2024 – March 31, 2026)																		
<b>Funding Request</b>	<table><tr><th></th><th><b>PS (₱)</b></th><th><b>MOOE (₱)</b></th><th><b>TOTAL (₱)</b></th></tr><tr><td><b>YEAR 1</b></td><td>571,416.00</td><td>2,812,406.00</td><td><b>3,383,822.00</b></td></tr><tr><td><b>YEAR 2</b></td><td>231,036.00</td><td>1,385,142.00</td><td><b>1,616,178.00</b></td></tr><tr><td><b>TOTAL</b></td><td><b>802,452.00</b></td><td><b>4,197,548.00</b></td><td><b>5,000,000.00</b></td></tr></table>				<b>PS (₱)</b>	<b>MOOE (₱)</b>	<b>TOTAL (₱)</b>	<b>YEAR 1</b>	571,416.00	2,812,406.00	<b>3,383,822.00</b>	<b>YEAR 2</b>	231,036.00	1,385,142.00	<b>1,616,178.00</b>	<b>TOTAL</b>	<b>802,452.00</b>	<b>4,197,548.00</b>	<b>5,000,000.00</b>
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<b>Sustainable Development Goals (SDGs) Addressed</b>	2 - Zero Hunger 4 - Quality Education 12 - Responsible Consumption and Production 15 - Life on Land																		
<b>Brief Description/ Rationale</b>	<p>The coconut industry is a vital economic driver in the Philippines, supporting millions of livelihoods. To address the growing demand for coconut, particularly copra, production must increase by a substantial margin. Hybrid coconut varieties offer a promising solution due to their higher yield potential compared to traditional varieties.</p> <p>Despite its significance, the industry faces substantial challenges from pests. We recently found that Palm Weevil (<i>Rhynchophorus spp.</i>) and Spike moth infestations are increasing, thus, limiting production not only in Eastern Visayas but also in surrounding provinces. The findings of the current project highlight the capability of APW and Tirathaba as a nationwide, highly damaging pest that can impact the recovering coconut sector. To safeguard hybrid coconut production and meet growing demand, a robust integrated pest management (IPM) strategy for these two emerging pests is essential. However, a thorough and accurate IPM strategy needs full understanding of its biology and ecology, its damage, and its susceptibility to current management practices. Thus, we are proposing a thorough study of these two pests with focus on its biology and potential damage and determine possible IPM practices that can be further incorporated into current measures in the Philippines.</p>																		

<b>Project Objectives</b>	<b>General:</b> The project aims to enhance and sustain the management of Asiatic Palm Weevil (APW, <i>Rhynchophorus</i> sp.) and Coconut Spike Moth ( <i>Tirathaba rufivena</i> ) using its biology and ecology.  <b>Specific:</b> <ol style="list-style-type: none"><li>1. Determine the biology of APW and <i>T. rufivena</i> collected from populations in Eastern Visayas and surrounding provinces;</li><li>2. Characterize APW and <i>T. rufineva</i> attacking parental and hybrid coconut populations in Eastern Visayas and surrounding provinces;</li><li>3. Determine feeding damage and host range of APW and <i>T. rufivena</i>; and</li><li>4. Recommend control agents for management of APW and <i>T. rufivena</i>.</li></ol>																																															
<b>Beneficiaries</b>	<ol style="list-style-type: none"><li>1. At least 10 students (for thesis support and assistance)</li><li>2. Coconut farmers with existing or at high risk of APW and CSM infestation</li><li>3. SUCs for research collaborations on coconut pests and control agents</li><li>4. Researchers and PCA officers for better understanding of the emerging pest problem on APW and CSM</li><li>5. PCA offices - to recommend better management options for affected provinces</li></ol>																																															
<b>Expected Outputs: 6P's</b>	<table><tr><th>6 Ps</th><th>Y1</th><th>Y2</th></tr><tr><td><b>Publication</b></td><td></td><td></td></tr><tr><td><ul style="list-style-type: none"><li>• Five (5) publications submitted in refereed journals</li></ul></td><td></td><td>5</td></tr><tr><td><ul style="list-style-type: none"><li>• At least ten (10) consensus barcode sequences of isolated and identified species/strains of biocontrol agents submitted to GenBank</li></ul></td><td>5</td><td>5</td></tr><tr><td><ul style="list-style-type: none"><li>• Three (3) IEC materials (Adult damage comparison between APW and CRB, Host range of APW, Damage Potential of CSM)</li></ul></td><td>1</td><td>2</td></tr><tr><td><b>Patent</b></td><td></td><td></td></tr><tr><td><ul style="list-style-type: none"><li>• One (1) utility model prepared for the host range tool model for APW)</li></ul></td><td></td><td>1</td></tr><tr><td><b>Products</b></td><td></td><td></td></tr><tr><td><ul style="list-style-type: none"><li>• Three (3) strains of EPF evaluated (<i>Beauveria</i> spp., <i>Metarrhizium</i> spp., <i>Isaria</i> spp., etc)</li></ul></td><td>3</td><td></td></tr><tr><td><ul style="list-style-type: none"><li>• One (1) predator evaluated (<i>Chelisoches morio</i> against CSM)</li></ul></td><td>1</td><td></td></tr><tr><td><b>People Services</b></td><td></td><td></td></tr><tr><td><ul style="list-style-type: none"><li>• Fifteen (15) undergraduate students supported for thesis</li></ul></td><td>5</td><td>5</td></tr><tr><td><ul style="list-style-type: none"><li>• At least 3 PCA PCDMs informed of findings</li></ul></td><td>1</td><td>2</td></tr><tr><td><b>Places and Partnership</b></td><td></td><td></td></tr><tr><td><ul style="list-style-type: none"><li>• PCA Region VIII</li></ul></td><td></td><td></td></tr></table>			6 Ps	Y1	Y2	<b>Publication</b>			<ul style="list-style-type: none"><li>• Five (5) publications submitted in refereed journals</li></ul>		5	<ul style="list-style-type: none"><li>• At least ten (10) consensus barcode sequences of isolated and identified species/strains of biocontrol agents submitted to GenBank</li></ul>	5	5	<ul style="list-style-type: none"><li>• Three (3) IEC materials (Adult damage comparison between APW and CRB, Host range of APW, Damage Potential of CSM)</li></ul>	1	2	<b>Patent</b>			<ul style="list-style-type: none"><li>• One (1) utility model prepared for the host range tool model for APW)</li></ul>		1	<b>Products</b>			<ul style="list-style-type: none"><li>• Three (3) strains of EPF evaluated (<i>Beauveria</i> spp., <i>Metarrhizium</i> spp., <i>Isaria</i> spp., etc)</li></ul>	3		<ul style="list-style-type: none"><li>• One (1) predator evaluated (<i>Chelisoches morio</i> against CSM)</li></ul>	1		<b>People Services</b>			<ul style="list-style-type: none"><li>• Fifteen (15) undergraduate students supported for thesis</li></ul>	5	5	<ul style="list-style-type: none"><li>• At least 3 PCA PCDMs informed of findings</li></ul>	1	2	<b>Places and Partnership</b>			<ul style="list-style-type: none"><li>• PCA Region VIII</li></ul>		
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<p><b>Potential Impacts: 2I's</b></p>	<p><b>Social Impacts</b></p> <ul style="list-style-type: none"> <li>With these research-based recommendations, judicious use of pesticides, among informed farmers should be reduced by 30%. At least 60% of informed CDOs and farmers would be able to recognize the pests and their natural enemies in the field and will be able to share these with other coconut farmers.</li> </ul> <p><b>Economic Impacts</b></p> <ul style="list-style-type: none"> <li>Due to the recommended management strategies, control costs will be reduced by 10% allowing farmers to direct funds for other inputs or use them for other personal purposes.</li> </ul>
<p><b>From Evaluating Council / Division</b></p> <p><b>Technical Merit</b></p> <p><b>Technologies that will be Generated</b></p> <p><b>Socio-Economic Benefit/ Environmental Impact/Tangible Benefits</b></p>	<p>The project proposal is aligned with the target outcome of the DOST-PCAARRD's Industry and Strategic S&amp;T Program (ISP) for coconut to reduce yield losses due to pests and diseases through suitable control and management strategies.</p> <p>The project should be able to recommend control agents for management of APW and <i>T. rufivena</i> in coconut hybrids.</p> <p>Through this project, students will be provided with theses support and assistance and coconut farmers with existing or at high risk of APW and CSM infestation would be benefited. Moreover, collaborations with SUCs for research on coconut pests and control agents could be made.</p> <p>The use of synthetic chemicals will be reduced, and coconut trees will be allowed to recover, resulting in increased productivity and biodiversity in the areas.</p> <p>This study is hoped to provide safe and sustainable pest control strategies against APW and <i>T. rufivena</i> in coconut hybrids.</p>
<p><b>Remarks / Recommendation</b></p>	<p>The project proposal is recommended for funding and implementation under the DOST-PCAARRD Coconut Hybridization Program (CHP) of the Coconut Farmers and Industry Development Plan (CFIDP) of RA 11524.</p>