

## Product User Guide

Congratulations on your purchase of Banyula-Ogrady Rural innovative and effective products! This user guide is designed to provide you with all the essential information and instructions to make the most out of each product's potential. Whether you are a seasoned agricultural expert or just starting, this guide will help you achieve optimal results with our products.



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## **PandA Products - Enhancing Agricultural Performance**

Welcome to the world of PandA Products, where nature-inspired solutions meet cutting-edge agricultural technology. Our range of revolutionary products is formulated with bamboo or wood vinegar, with PandA-Foliar being the exception, derived from an amino acid-rich Fish Protein Hydrolysate. These products are designed to elevate your agricultural practices, boost crop yields, and promote soil health.

### **Introducing PandA (PA - pyroligneous acid)**

PandA, also known as "liquid smoke," is a light brown liquid with a distinct medium to strong smoky aroma. It is obtained during BioChar production when condensable gases from plant cells are liquified into PA liquids. These liquids are then refined into three fractions: heavy tars, PandA, and light oils, with PandA undergoing an aging process before packaging.

The organic composition of PandA includes essential components such as acetic acid and traces of over 200 organic compounds, including phenolics, aldehyde, ketones, alcohol, and esters. Its organic acids are known for their ability to adjust and stabilize the pH of herbicides and fungicides, thereby enhancing their efficiency.

In countries like Japan, Korea, Thailand, China, Philippines, Brazil, and Cuba, PandA is widely recognized as an organic product due to its production process free from fertilizers, agricultural chemicals, or fossil fuels.



## **PandA-KR (Kernel Recovery)**

Thank you for choosing PandA-KR, a foliar bio stimulant designed to enhance nut set and maturity for higher yields and improved kernel recovery in Macadamia crops. This user guide provides important information and instructions for using PandA-KR effectively and safely. PandA KR presents an exceptional advantage for farmers as it seamlessly blends with any fungicide or insecticide, providing a cost-effective solution in a single spray. Say goodbye to extra expenses and time-consuming mixtures, as PandA KR's inherent adjuvant properties eliminate the need for additional adjuvants when combined with fungicides or insecticides. This product is also suitable for Avocados, coffee, Passionfruit and Bananas.

### **Product Description:**

PandA-KR is a highly soluble carbon-based product containing wood vinegar, 4.0% Nitrogen, 5.25% Boron, 0.7% Zinc, 0.02% Molybdenum, and 5.0% super spreader/penetrant. The super spreader enables compatibility with other pest and disease control products. PandA-KR does not prevent husk spot, but it significantly improves nut quality and overall yield.

### **Application Guidelines: -**

- Application Rate: Mix 8-10 litres of PandA-KR per hectare (ha) into a 2000-liter tank.
- Timing: Apply PandA-KR from flower set to pea size nut every 4 weeks. At least applications are recommended for optimal results.
- Dilution: Use 400ml of PandA-KR per 100 litres of water.
- Application Method: Apply the mixture to "the point of run-off" to ensure even coverage.

### **Safety Precautions:**

- Keep out of the reach of children.
- Avoid direct contact with eyes and skin. In case of contact, rinse thoroughly with water.
- After use, wash hands before eating, drinking, or smoking.
- Shake well before use.

### **Important Note:**

- PandA-KR contains a proven synergistic adjuvant. Do not add any other adjuvant to the mixture.
- Foliar burn may occur for some varieties. Always check on a small area before applying to the whole crop.

### **Product Availability:**

- PandA-KR is available in two sizes: 20L pail and 900L IBC.
- Price: \$9.70/ L GST inclusive.

## **Application and Usage Guide**

To maximize the benefits of PandA-KR, we recommend applying it at 400ml/100L every 4 weeks, from bud initiation to nut maturity. For even more impressive foliar nutrition, consider switching to PandA-Foliar containing fish protein hydrolysate after nut set. Both products contain the critical rate of 0.02% Boron in the foliar spray, ensuring optimal results.

*For PandA-Foliar, apply 8L/ha (2000L/ha) following our product usage guide.*

### **Maximize Effectiveness with PandA KR's Adjuvant**

PandA KR's unique formulation contains a proven adjuvant, sparing you the complexities of incorporating other adjuvants. This innovative blend enhances the efficacy of your chosen fungicide or insecticide, optimizing the overall performance of your crop protection regime.

### **Experience Enhanced Crop Yield and Quality**

With PandA KR, you are not only saving costs and effort but also elevating your crop's potential. Harness the power of this efficient bio stimulant to achieve higher yields and improved kernel recovery in Macadamia crops, all while enhancing nut quality and maturity.

### **Safeguard Your Crop with Ease**

Keep your crop safeguarded with simplicity and confidence. Embrace the harmonious pairing of PandA KR and fungicides/insecticides for a seamless, efficient, and cost-effective approach to crop protection.

### **Unleash the Potential of PandA KR**

Explore the possibilities of PandA KR as your go-to bio stimulant. Its compatibility with fungicides and insecticides, combined with its inherent adjuvant properties, ensures you enjoy a harmonious and fruitful experience throughout your crop's growth cycle. Contact Information:

### **Produced by Banyula Operations Pty Ltd- Incorporating O'Grady Rural**

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For any further assistance or inquiries, please do not hesitate to contact us.

### **Disclaimer:**

PandA-KR's performance and results may vary based on specific agricultural practices and environmental conditions. It is essential to follow the provided guidelines and consult with agricultural experts for tailored advice. Banyula Operations Pty Ltd is not liable for any crop outcomes beyond the guidelines outlined in this user guide.

### **Unlocking the Potential with PandA-KR**

PandA-KR, specifically designed to increase kernel recovery (KR), has showcased remarkable results in improving nut quality and yield. In independent trials, it increased KR from 35% to 38% with a 95% confidence level compared to industry standards. While PandA-KR does not prevent husk spots, its benefits far outweigh the losses.

### **Safety and Environmental Considerations**

At Banyula, safety and environmental protection are our top priorities. Keep all our products out of the reach of children and avoid contact with eyes and skin. After use, wash hands thoroughly and refrain from eating, drinking, or smoking.

### **Experience the Regenerative Power**

Over 12 years of continuous yield monitoring, PandA-KR has proven its regenerative potential, outperforming the use of fungicides to counter the costly effects of Husk Spot disease. The results are astounding, with a difference of 19.28t of NIS per hectare compared to traditional methods, equating to \$67,480/ha (\$6,748/ha pa) in potential savings.

Join us on this journey towards a more sustainable and prosperous future for agriculture with PandA Products.

### **General Tips:**

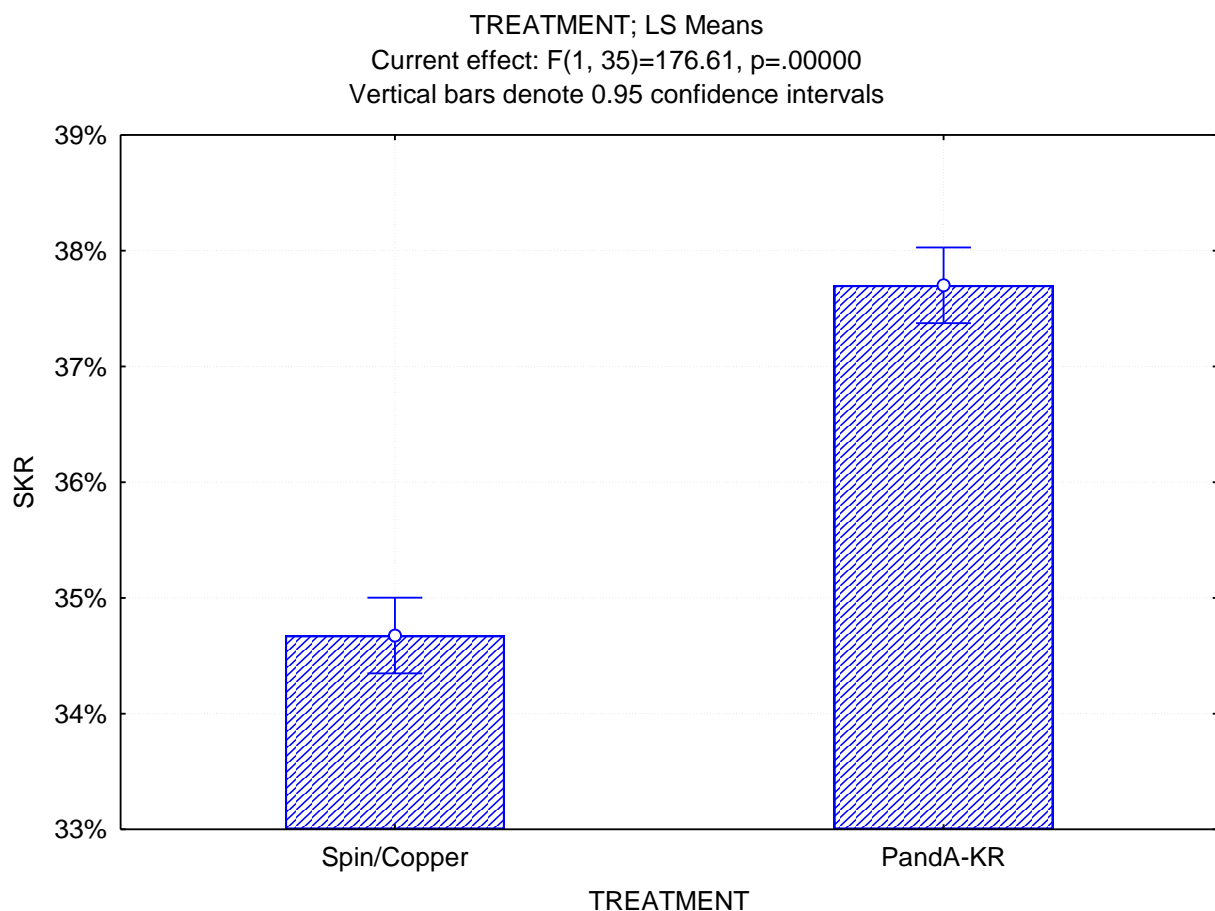
- Always read and follow the product labels and instructions carefully.
- Store all products in a cool, dry place, away from direct sunlight and moisture.
- Keep products out of reach of children and pets.
- In case of any questions or concerns, feel free to contact our customer support team.

## Research Result

PandaA-KR increased kernel recovery (KR) from 35% to 38%, with 95% confidence level compared to the industry standard. PandaA-KR did not prevent husk spot, but it significantly improved nut quality and yield.

The following illustrates the improvement in the SKR % (Sound Kernel Recovery %) of PandaA-KR treated nuts in 2012. Three replications of each treatment and four harvest rounds were independently tested by MPC and Pacific Farms laboratories.

### Trial: PandaA-KR v's Spin & Copper



### Applications:

PandaA-KR is used at 400ml/100L and applied to “the point of run-off” every 4 weeks, from bud initiation to nut maturity. However, after nut set a switch to PandaA-Foliar containing fish protein hydrolysate may further improve foliar nutrition especially during a dry Spring. The critical rate of 0.02% Boron in the foliar spray is contained in both products.

### Panda - KR results over 12 years (no fungicides)

Twelve years of continuous yield monitoring at Ryan and Kate Hathaway property at Whian Whian NSW, raises the obvious question *is PandaA-KR a more regenerative solution than the continued use fungicides to overcome the \$10M\* estimated cost of Huskspot?*

Prior to the 2010 harvest the farm suffered serious Husk Spot losses.

A16's yield monitoring site: 2010-2021

Tree age years	Harvest year	Hathaway A16 NIS @10% t/ha
14	2010	5.69
15	2011	2.16
16	2012	3.85
17	2013	3.40
18	2014	5.63
19	2015	5.94
20	2016	4.68
21	2017	3.35
22	2018	5.86
23	2019	4.75
24	2020	5.42
25	2021	4.89
average		4.64

**Data:** Variety A16 planted at 8 x 4 m (original plot size 3 rows X 39 trees). Continuous yield measurements of 39 trees in middle row since 2010 harvest.

Over these ten years the difference in the accumulated yield of all bearing trees in the Northern Rivers \*\* and the Hathaway trial is a staggering 19.28t of NIS per hectare. Assuming an average price of \$3.50/kg NIS there is a difference of \$67,480/ha (\$6,748/ha pa). \*\* macaman data

No fungicides have been used on the Hathaway property since the conclusion of the trial in 2014.

**Reference:**

*Akinsanmi, O. A., Miles, A. K., & Drenth, A. (2008). Alternative fungicides for controlling husk spot caused by Pseudocercospora macadamiae in macadamia. Australasian Plant Pathology, 37(5), 443-447. DOI: 10.1071/AP08040*