



- ✓ Protect pruning wounds
- ✓ Suppress pathogens
- ✓ Reduce cankers
- ✓ Stronger trees
- ✓ Higher yields
- ✓ Better returns

TARGET PATHOGENS IN AUSTRALIAN NUT ORCHARDS

ALMONDS	WALNUTS	HAZELNUTS	PECANS	MACADAMIAS
<p>Major pathogens:</p> <ul style="list-style-type: none"> Bacterial Blast (<i>Pseudomonas syringae</i>) Shot Hole (<i>Wilsonomyces carpophilus</i>) Hull Rot (<i>Monilinia, Rhizopus</i>) Crown Gall (<i>Agrobacterium</i>) Phytophthora Root Rot 	<p>Major pathogens:</p> <ul style="list-style-type: none"> Walnut Blight (<i>Xanthomonas arboricola</i> pv. <i>juglandis</i>) Bacterial Canker (<i>Pseudomonas syringae</i>) Phytophthora spp. Botryosphaeria Cankers 	<p>Major pathogens:</p> <ul style="list-style-type: none"> Bacterial Blight (<i>Xanthomonas arboricola</i>) Eastern Filbert Blight Cytospora Canker Root Rot Complexes 	<p>Major pathogens:</p> <ul style="list-style-type: none"> Pecan Scab Bacterial Leaf Scorch Crown & Root Diseases Stem Cankers 	<p>Major pathogens:</p> <ul style="list-style-type: none"> Husk Spab Phytophthora <i>cinnamomi</i> Botryosphaeria Dieback Flower Blights
<p>Strategy: Protect wounds, suppress bacteria, stimulate immunity, improve root health.</p>	<p>Strategy: Suppress cankers, strengthen trees, enhance nutrient uptake, reduce stress.</p>	<p>Strategy: Biofilm protection, root colonisation, disease suppression, improved vigour.</p>	<p>Strategy: Build canopy immunity, enhance soil biology, improve recovery from stress.</p>	<p>Strategy: Protect roots, improve calcium movement, enhance flowering resilience.</p>

THE AG FALCON BIOLOGY

Bacillus spp.
(*subtilis, amyloliquefaciens* and related strains)

- ✓ Produce natural antibiotics
- ✓ Suppress disease-causing bacteria
- ✓ Colonise wounds and roots
- ✓ Stimulate plant immune responses
- ✓ Improve nutrient availability

Pseudomonas spp.

- ✓ Root colonisation
- ✓ Competitive exclusion
- ✓ Nutrient solubilisation
- ✓ Induced systemic resistance
- ✓ Supports recovery from stress

WHY PSEUDOMONAS SYRINGAE MATTERS

Frost, hail, pruning and mechanical wounds create entry points for *Pseudomonas syringae*. Leads to cankers, shoot dieback, reduced flowering, yield loss and tree decline.

NutShield™ establishes beneficial microbial populations before pathogens can dominate.

AG FALCON DRONE INTELLIGENCE

NDRE MAPPING
Identifies stress zones, nutrient deficiencies and disease hotspots.

THERMAL MAPPING
Detects water stress, root issues and early disease expression.

PRESCRIPTION APPLICATIONS
Apply biology precisely where stress and disease pressure are highest for maximum ROI.

NUTSHIELD™ 3-LAYER SYSTEM FOR HEALTHIER TREES. HIGHER BRIX. BETTER RETURNS.

1 FOUNDATION LAYER BIOEARTH
50-100 kg/ha

- ✓ Beneficial microbes
- ✓ NPK support
- ✓ Calcium
- ✓ Trace minerals
- ✓ Long-term soil health

2 ACTIVATION LAYER BIOESSENTIALS
3-5 L/ha

- ✓ Biological activation
- ✓ Root stimulation
- ✓ Nutrient mobilisation
- ✓ Canopy resilience
- ✓ Improved immunity

3 PERFORMANCE LAYER CROP BIOLIFE
5-7 days after BioEssentials

- ✓ Improved energy production
- ✓ Enhanced flowering
- ✓ Better nut fill
- ✓ Increased kernel quality
- ✓ Stress recovery

PRECISION BIOLOGICAL PROGRAM – NUT ORCHARDS

POST HARVEST	DORMANCY	BUD SWELL	FLOWERING	NUT SET	NUT FILL	KERNEL FILL	POST HARVEST
BioEarth + BioEssentials	BioEssentials	BioEssentials	BioEssentials	BioEssentials	Crop BioLife	Crop BioLife	BioEssentials
Rebuild roots & reserves	Protect wounds & suppress bacterial pressure	Stimulate early growth	Improve pollination & reduce stress	Improve retention	Improve size & kernel development	Improve quality & oil accumulation	Recharge trees

EXPECTED OUTCOMES

DISEASE SUPPRESSION	ROOT HEALTH	YIELD & QUALITY	SUSTAINABILITY
<ul style="list-style-type: none"> ✓ Reduced bacterial cankers ✓ Reduced pruning wound infections ✓ Lower disease pressure 	<ul style="list-style-type: none"> ✓ Stronger root systems ✓ Greater nutrient uptake ✓ Improved drought resilience 	<ul style="list-style-type: none"> ✓ Better nut set ✓ Improved kernel fill ✓ Higher uniformity ✓ Improved profitability 	<ul style="list-style-type: none"> ✓ Reduced reliance on reactive chemistry ✓ Improved soil health ✓ Increased orchard longevity

