Hort360 Reef Certification Management Practices

Version 2.1 March 2023

Hort360 Reef Certification
Management Practices
2020
Growcom Australia

Queensland Fruit & Vegetable Growers Ltd trading as Growcom Australia
Level 2 231 George Street
Brisbane QLD 4000

PO Box 12101
George Street Brisbane Qld 4003

P: 07 3620 3844
F: 07 3620 3880
W: www.growcom.com.au

Growcom Australia Ltd would like to acknowledge Freshcare Limited for making the resources available. In development of the Hort360 Reef Certification, Hort360 has utilised Food Safety and Quality v4.2 and Environmental v3 Standards without change.

Management Practices

The following tables set out the management practices within the Reef Certification. These practices form the Hort360 Reef BMP module and the reporting framework for Paddock to Reef, P2R.

Tables consist of Nutrient, Sediment, Pesticide and Water management components. They have been developed using the previous Horticulture Water Quality Risk Framework and further defined with assistance from industry representatives, individual growers and the Office of the Great Barrier Reef technical panel.

Management Practices

Nutrient Management				
	Good Practice	Room for Improvement	At Risk	Significant Risk
Testing (either OR)	Soil sampling collected / collated **per planting per soil type / management zone** • a sampling regime recommended by a suitably qualified / experienced person **And** Collection / collation conducted as per industry recognised procedure Testing conducted by NATA / ASPAC accredited lab	Soil sampling collected / collated **annually per soil type / management zone** • a sampling regime recommended by a suitably qualified / experienced person **And** Collection / collation conducted as per industry recognised procedure Testing conducted by NATA / ASPAC accredited lab	Soil sampling collected / collated **per management zone** • a sampling regime recommended by a suitably qualified / experienced person or • an accepted industry standard **And** Collection / collation conducted as per industry recognised procedure Testing conducted by NATA / ASPAC accredited lab	No testing conducted
	Leaf / sap / fruitlet sampling undertaken at strategic crop growth stages (more than once per year) **per crop type per management zone** • a sampling regime recommended by a suitably qualified / experienced person **And** Collection / collation conducted as per industry recognised procedure Testing conducted by NATA / ASPAC accredited lab	Leaf / sap / fruitlet sampling completed **annually per management zone** • a sampling regime recommended by a suitably qualified / experienced person **And** Collection / collation conducted as per industry recognised procedure Testing conducted by NATA / ASPAC accredited lab	Leaf / sap / fruitlet sampling collected / collated **per management zone** • a sampling regime recommended by a suitably qualified / experienced person or • an accepted industry standard **And** Collection / collation conducted as per industry recognised procedure Testing conducted by NATA / ASPAC accredited lab	No testing conducted

Nutrient Target Setting / budgeting (NPK)	Developed at individual block scale	Developed on a crop / soil type basis	Developed as per management zone	No nutrient budget / targets set
Application method	Various application methods (fertigation, incorporation and / or foliar) with fertigation being dominant (>80%) In accordance with weather	Various application methods (fertigation, incorporation, broadcast, banding and / or foliar) Typically small amounts often In accordance with weather conditions	Surface applied - mixture of broadcast and banding Typically small amounts often In accordance with weather conditions	Surface applied (broadcasting and/or banding) Annually – 1 or 2 application events
Rate	Targeted variable rate within crops / blocks Includes: • Growth stage • Soil constraints • Topography	Variable rate Includes: • Crop growth stage	Single rate per crop	Historical rates applied across entire farm
Record	All applications are recorded at a block / crop scale in line with nutrient targeting	All applications are recorded per management zone in line with nutrient targeting	At a whole farm scale	No nutrient application records
Calibration	Fertiliser equipment is calibrated & maintained seasonally AND after changes to application equipment, specific production blocks and irrigation equipment	Fertiliser equipment is calibrated & maintained on a seasonal basis	Fertiliser equipment is calibrated & maintained only when a problem occurs	Regular calibration & maintenance of equipment is not practiced

Sediment management				
	Good Practice	Room for Improvement	At Risk	Significant Risk
Runoff buffer	Vegetated buffers provides good protection of waterways at ALL times • Width of buffer accounts for slope	Vegetated buffers in place, provides protection of waterways in the majority of instances	Sufficiently vegetated buffer of minimal width in place	No buffer zones on the property
Sediment retention	Structures / systems have been engineered to appropriate design standards for the region Accounting for: • seasonal rain events • structure / system catchment area • sediment source / farming system Maintenance is carried out prior to spring/summer rainfall period and as required	Structures / systems are working effectively Deemed suitable for: • structure / system catchment area • sediment source / farming system Maintenance is carried out prior to spring/summer rainfall period	Structures / systems are working effectively Deemed suitable for: • sediment source / farming system Maintenance is carried out annually	No structures deemed suitable are in place and sediment loss is an issue
Ground cover – plant bed management	Annual / Pineapple cropping systems • living or dead mulch combined with green manure / cover cropping planted between (space and time) commercial crops Irrigation systems used are appropriate for slope %	Annual / Pineapple cropping systems • crop residue / plastic mulch combined with green manure / cover cropping planted between (space and time) commercial crops Irrigation systems used are appropriate for slope %	Annual / Pineapple cropping systems • bare beds combined with green manure / cover cropping planted between (space and time) commercial crops **and or** • products such as PAM (polyacrylamide), PVA (polyvinyl acetate) or molasses which bind soil together may also be utilised in circumstances	No cover throughout the year

			/ locations where there are impediments to maintaining cover **Must include:** • vegetated drains / drainage areas, vegetated buffers Irrigation systems used are appropriate for slope %	
	Tree cropping systems • maintain permanent grass or vegetation cover Irrigation systems used are appropriate for slope %	Tree cropping systems • fit for purpose organic mulches / slashed inter-row material spread over the exposed soil; Irrigation systems used are appropriate for slope %	Tree cropping systems • prunings / volunteers **and or** • products such as PAM (polyacrylamide), PVA (polyvinyl acetate) or molasses which bind soil together may also be utilised in circumstances/locations where there are impediments to maintaining cover (e.g. shade from mature tree canopy) Irrigation systems used are appropriate for slope %	

Ground cover – Inter-row management	Annual / Pineapple • Under sow / plant / mulch in the inter-row same time as plant crop • Ground cover % is appropriate for slope % and soil condition May also include: • Vegetated drains, vegetated buffers, diversion and contour banks, adequate silt traps	Annual / Pineapple • Inter-rows managed with living (grass etc.) and or dead (mulch) to a minimum of 60% cover May also include: • Vegetated drains, vegetated buffers, diversion and contour banks, adequate silt traps	Annual / Pineapple **IF** a bare inter-row is maintained due to general block management / crop canopy closure you **must include**: • vegetated drains / drainage areas, vegetated buffers May also include: • diversion and contour banks, contour plantings, , adequate silt traps, crop rotations, cover cropping, levelling and/or sediment retention	Bare inter-row with no other measures
	Trees • Inter-rows managed with living ground cover (high % >80%) • Ground cover % is appropriate for slope % and soil condition May also include: • Vegetated drains, vegetated buffers, diversion and contour banks, adequate silt traps	Trees Inter-rows managed with living (grass etc.) and or dead (mulch) to a minimum of 60%. Should be practiced in conjunction with: • vegetated drains / drainage areas, vegetated buffers May also include: • diversion and contour banks, contour plantings, , adequate silt traps, crop rotations, cover cropping, levelling and/or sediment retention	Trees **IF** a bare inter-row is maintained due to general block management / crop canopy closure you **must include**: • vegetated drains / drainage areas, vegetated buffers May also include: • diversion and contour banks, contour plantings, , adequate silt traps, crop rotations, cover cropping, levelling and/or sediment retention	
Farm Access Management	Roads and grassed / covered headlands are strategically designed, constructed & maintained to minimise erosive runoff	Maintenance procedures for roads and grassed / covered headlands are implemented with minimal runoff issues	Maintenance occurs when there is an issue	Roads and bare headlands receive no maintenance and erosion is an issue

Pesticide Management				
	Good Practice	Room for Improvement	At Risk	Significant Risk
Determination of chemical requirement	Using your own and agronomist recorded crop monitoring results, action thresholds and labelled rates In conjunction with external agency alerts Implementation of IPM practices	Using your own and agronomist recorded crop monitoring results, action thresholds and labelled rates	Using own or agronomist crop monitoring results, action thresholds and labelled rates	Follow other grower advice and / or calendar applications regardless of weather conditions
Pesticide use management	A full complement of IPM measures are implemented with a range of control strategies used Continually looking to / researching initiatives	A full complement of IPM measures are implemented with a range of control strategies used	IPM is implemented to the extent available to our crop	Not considered - continue to use traditional insecticide based programs
Drift Management	Spray in accordance with label information In appropriate forecast weather conditions On site weather monitoring and recording of temperature, relative humidity, Delta T, wind speed & wind direction Using fit for purpose spray equipment to control droplet spectrum with appropriate spray buffers in place	Spray in accordance with label requirements In appropriate forecast weather conditions Wind speed is visually assessed in addition to regional / local weather forecast or weather station check for wind speed and direction at time of spraying Using fit for purpose spray equipment to control droplet spectrum with appropriate spray buffers in place	Spray in accordance with label requirements In appropriate forecast weather conditions Wind speed is visually assessed	Spray when opportunity arises within other farming operations
Spray records	Spray use is recorded electronically as per industry standards and reviewed seasonally for ongoing decision making	Spray use is recorded electronically as per industry standards and reviewed annually for ongoing decision making	Spray use is recorded as per industry standards of practice Typically paper based	Not undertaken

Calibration	Spray equipment is calibrated and checked for efficiency at every change of situation according to manufacturer's instructions & recorded / use a spray contractor	Spray equipment is calibrated annually according to manufacturer's instructions and checked for efficiency at every use & recorded	Spray equipment is calibrated annually according to manufacturer's instructions	Not undertaken

Water Management				
	Good Practice	Room for Improvement	At Risk	Significant Risk
Irrigation Application (rate / volume)	Application rate suited to soil type and volume applied meets crop stage requirement Regularly (more than once per year / per crop) measure rate of applied water	Application rate suited to soil type and volume applied meets crop stage requirement Annually measure rate of water applied	Application rate assumed (not measured) and applied volume varies with crop stage	No consideration of soil type or crop variance
	Not Applicable – non irrigated farming system			
Scheduling	Use objective tools (multiple)	Use objective tools (at least one) (e.g. Tensiometer, Capacitance Probe, Time Domain Reflectance System, Weather Station, Evaporation Pan, satellite / drone imagery)	Use subjective tools (e.g. Finger, shovel, push rod, crop appearance) In addition to regional/local weather forecast inclusive of evaporation, temperature and rainfall data	Not considered
	Not Applicable – non irrigated farming system			