



Guidelines for Environmental Assurance in Australian Horticulture - Review Checklist

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HORTICULTURE FOR TOMORROW

Managed by Horticulture Australia Limited

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Horticulture Australia



Review checklist

This review checklist identifies the range of environmental issues that should be addressed on-farm in horticulture. The checklist covers 20 topics divided into eight sections which match the Management Chapters of the Guidelines folder.

The checklist can be used to supplement existing audit checklists used by certification bodies or for internal audits carried out by individual businesses.

As with any generic checklist, you may not consider some items to be relevant and they can be excluded.

By working through the checklist you will get an idea of your priority areas and you can then read the relevant topic in the Guidelines in more detail.

The Checklist is divided into tables covering a range of topics. Select a topic and turn to the matching topic in the main working section of the Guidelines and look for the Risk Assessment diagram. By working through the Risk Assessment you can quickly determine if that particular topic of the guidelines is significant for your business.

If the topic is significant for your business, complete the relevant checklist table and record the answers.

Read the Suggested Practices for the topic to explore your management options.

Management chapters	
1 Land and soil management	F.3
2 Water management	F.6
3 Chemical management	F.8
4 Nutrient management	F.9
5 Biodiversity	F.10
6 Waste management	F.11
7 Air management	F.12
8 Energy and greenhouse gas management	F.14

Date:	YES	NO
Are you aware of any targets, priorities or objectives of your Natural Resources Management group/Catchment Management Authority?		
Have you used the Risk Assessments within each management chapter to assist you in identifying issues that might be important for your property?		
Have you considered the relevant legislation requirements for your property?		

1 Land and soil management	Yes	No	Not relevant to my property	Needs attention	Actions taken in the past 12 months	Actions required in the next 12 months
1a Soil erosion caused by water						
1 An assessment of the risk of soil erosion by water has been undertaken						
2 Based on the result of the risk assessment, are further actions required?						
3 If so, what actions are needed or have been undertaken?						
• Soil cover maximised						
• Water control measures in place						
• Soil structure improved						
• Sediment traps in place						
1b Soil erosion caused by wind						
5 An assessment of the risk of soil erosion by wind has been undertaken						
6 Based on the result of the risk assessment, are further actions required?						
7 If so, what actions are needed or have been undertaken?						
• Soil cover maximised						
• Windbreaks in place to moderate wind speed						
• Soil structure improved						
• Other management strategies implemented						
8 The effectiveness of the actions is being monitored and recorded						
1c Soil structure						
9 An assessment of the soil structure has been undertaken						
10 Based on the result of the risk assessment, are further actions required?						
11 If so, what actions are needed or have been undertaken?						
12 The effectiveness of the actions is being monitored and recorded						

1 Land and soil management	Yes	No	Not relevant to my property	Needs attention	Actions taken in the past 12 months	Actions required in the next 12 months
1d Salinity						
13 An assessment of the risk of groundwater and soil salinity has been undertaken						
14 An assessment of the risk of irrigating with saline water has been undertaken						
15 Based on the result of the risk assessment, are further actions required?						
16 If so, what actions are needed or have been undertaken?						
• Determination of the source of salinity (irrigation water, groundwater or soil salinity)						
• Advice sought on irrigation strategies						
• Actions taken to lower water table						
• Actions taken to minimise rise in water table (including review of irrigation requirements and improvement of subsurface drainage)						
• Alternate source of irrigation water or shandyng / diluting saline water						
• Leaching fraction applied						
• Vegetation cover maintained						
• Specialist advice sought						
17 The effectiveness of the actions is being monitored and recorded						
1e Soil acidity and alkalinity						
18 An assessment of the risk of soil acidity or alkalinity has been undertaken						
19 Based on the result of the risk assessment, are further actions required?						
20 If so, what actions are needed or have been undertaken?						
• Soil pH is monitored regularly						
• The relative acidifying impact of fertilisers is considered when deciding on fertiliser purchase/application						
• The potential for leaching is considered prior to applying fertilisers or irrigation post-fertiliser application						
• Lime or dolomite is applied as required						
21 The effectiveness of the actions is being monitored and recorded						

1 Land and soil management	Yes	No	Not relevant to my property	Needs attention	Actions taken in the past 12 months	Actions required in the next 12 months
1f Sodicity						
22 An assessment of the risk of sodicity has been undertaken						
23 Based on the result of the risk assessment, are further actions required?						
24 If so, what actions are needed or have been undertaken?						
• Gypsum or lime applied (dependent on soil pH)						
• Soils not deep ripped						
• Surface drainage improved or raised beds used						
• Irrigation water slightly saline						
• Specialist advice sought						
25 The effectiveness of the actions is being monitored and recorded						

2 Water management	Yes	No	Not relevant to my property	Needs attention	Actions taken in the past 12 months	Actions required in the next 12 months
2a Irrigation efficiency						
26 An assessment of the irrigation efficiency has been undertaken						
27 Based on the result of the risk assessment, are further actions required?						
28 If so, what actions are needed or have been undertaken?						
• Property goal defined						
• Soil survey undertaken						
• Irrigation system suitable for property goal and is efficient way of applying water to crop						
• Water budget developed						
• Crop water requirements and water availability understood						
• Irrigation schedule developed						
• Soil moisture measurement/assessment carried out						
• Strategies implemented to manage nutrient input and salinity						
29 The effectiveness of the actions is being monitored and recorded						
2b Water quality						
30 An assessment of irrigation water quality has been undertaken						
31 An assessment of the risk to downstream water quality has been undertaken						
32 Based on the result of the risk assessments, are further actions required?						
33 If so, what actions are needed or have been undertaken?						
• Irrigation water quality tested						
• Quality of water leaving property tested						
• Irrigation water quality tested						
• Specialist advice sought						
• Quality of water leaving property tested						
• Water quality tests take place at appropriate times						
• Watercourses are protected						
• Soil erosion is controlled						

2 Water management	Yes	No	Not relevant to my property	Needs attention	Actions taken in the past 12 months	Actions required in the next 12 months
2b Water quality cont.						
• Fertilisers are appropriately stored						
• Nutrient application is appropriately managed						
• Nutrient application is appropriately managed						
• Environmental impact of fertiliser application and storage is minimised						
• Agricultural chemicals are appropriately stored						
• Agricultural chemicals are appropriately applied (spray drift and contamination of waterways are considered)						
• Fuels and oils are appropriately stored and transported (mobile fuel tanks)						
• Septic tanks and manure storage areas well away from watercourses						
34 The effectiveness of the actions is being monitored and recorded						
2c Managing wastewater						
35 An assessment of the risk of mismanaging wastewater has been undertaken						
36 Based on the result of the risk assessment, are further actions required?						
37 If so, what actions are needed or have been undertaken?						
• Drains and water storage facilities in place						
• Wastewater is recycled or reused						
• Wastewater is treated						
38 The effectiveness of the actions is being monitored and recorded						

3 Chemical management	Yes	No	Not relevant to my property	Needs attention	Actions taken in the past 12 months	Actions required in the next 12 months
39 An assessment of the risk of misapplication, incorrect handling, storage, application and disposal of chemicals, surplus spray and chemical containers has been undertaken						
40 An assessment of the risk of spray drift has been undertaken						
41 Based on the result of the risk assessment, are further actions required?						
42 If so, what actions are needed or have been undertaken?						
• IPM strategies employed						
• Chemicals safely stored						
• Materials available to deal with chemical spillage						
• Chemicals used responsibly and by trained personnel						
• Mixing and washdown areas appropriate						
• Spraying when weather conditions are least likely to cause spray drift						
• Using appropriate drift minimisation strategies (e.g. large droplets, not spraying next to sensitive areas, boom kept low, modifying spray equipment)						
• Establishing barriers and/or buffer zones to minimise spray drift						
• Water supplies protected from chemical contamination						
• Appropriate disposal of empty chemical containers						
• Appropriate disposal of surplus chemicals, dip tank contents and washings						
• Appropriate disposal of old, de-registered or unwanted chemicals						
• Appropriate disposal of other chemical products (e.g. rodent baits) or contaminated goods						
• Fuels are safely stored away from watercourses						
43 The effectiveness of the actions is being monitored and recorded						

4 Nutrient management	Yes	No	Not relevant to my property	Needs attention	Actions taken in the past 12 months	Actions required in the next 12 months
4a Nutrient requirements						
44 A risk assessment of appropriate nutrient application has been undertaken						
45 Based on the result of the risk assessment, are further actions required?						
46 If so, what actions are needed or have been undertaken?						
• Nutrient requirements of crop understood						
• Soil, sap or leaf test undertaken						
• Test results assessed by a suitably qualified/competent person and appropriate recommendations made						
• Nutrient budget developed						
• Nutrients applied do not exceed crop needs (as indicated by soil, leaf and/or sap tests)						
• Fertilisers low in contaminants are used						
47 The effectiveness of the actions is being monitored and recorded						
4b Nutrient application						
48 An assessment of potential nutrient losses to the environment (leaching, run-off, wind) has been undertaken						
49 Based on the result of the risk assessment, are further actions required?						
50 If so, what actions are needed or have been undertaken?						
• Type, rate and timing of application of fertiliser are appropriate						
- Nutrients that are most readily lost (N and K) are applied in small amounts often to match plant growth						
- Fertiliser applications are timed to match crop growth/need						
• Fertiliser placement appropriate						
- Fertilisers applied where crop can most easily use them						
• Fertiliser application equipment regularly calibrated and maintained						
• Fertilisers are safely stored, protected from direct sunlight and rain and away from watercourses						
51 The effectiveness of the actions is being monitored and recorded						

5 Biodiversity	Yes	No	Not relevant to my property	Needs attention	Actions taken in the past 12 months	Actions required in the next 12 months
52 An assessment of risk to biodiversity has been undertaken						
53 Based on the result of the risk assessment, are further actions required?						
54 If so, what actions are needed or have been undertaken?						
• Native vegetation on the property is identified						
• Native vegetation on surrounding properties is identified						
• Initial assessment of the importance of native flora and fauna on property and nearby undertaken						
• Biodiversity laws and regulations checked						
• Threats to native biodiversity identified						
• Strategies developed for managing 'problem' plants and native animals						
• Practical ways to manage native vegetation developed						
- habitats protected						
- habitats improved						
- habitats created						
• Soil biodiversity encouraged						
• Join forces with others						
55 The effectiveness of the actions is being monitored and recorded						

6 Waste management	Yes	No	Not relevant to my property	Needs attention	Actions taken in the past 12 months	Actions required in the next 12 months
56 An assessment of the opportunities to minimise waste has been undertaken						
57 Based on the result of the risk assessment, are further actions required?						
58 If so, what actions are needed or have been undertaken?						
• Sources of waste identified and prioritised						
• Waste avoidance or minimisation strategies in place						
• Reuse or recycling carried out wherever possible						
• Disposal methods appropriate for particular types of waste						
59 The effectiveness of the actions is being monitored and recorded						

7 Air management	Yes	No	Not relevant to my property	Needs attention	Actions taken In the past 12 months	Actions required In the next 12 months
7a Odour management						
60 An assessment of the risk of odour has been undertaken						
61 Based on the result of the risk assessment, are further actions required?						
62 If so, what actions are needed or have been undertaken?						
• Composted manure used in preference to raw manure						
• Animal manure stored to minimise concern to neighbours/community/employees						
• Manure applied in a manner that minimises concern to neighbours/community/employees						
• Waste produce disposed of in a manner that minimises concern to neighbours/ community/employees						
63 The effectiveness of the actions is being monitored and recorded						
7b Dust management						
64 An assessment of the risk of dust has been undertaken						
65 Based on the result of the risk assessment, are further actions required?						
66 If so, what actions are needed or have been undertaken?						
• Shelterbelts and windbreaks in place						
• Appropriate cultivation practices, minimising working soil to fine tilth in dry windy weather						
• Mulches applied to seedbeds						
• Traffic ways wetted down or sealed						
67 The effectiveness of the actions is being monitored and recorded						
7c Smoke management						
68 An assessment of the risk of smoke has been undertaken						
69 Based on the result of the risk assessment, are further actions required?						
70 If so, what actions are needed or have been undertaken?						
• Alternate disposal options explored for materials that create dark smoke						

7 Air management	Yes	No	Not relevant to my property	Needs attention	Actions taken In the past 12 months	Actions required In the next 12 months
7c Smoke management cont						
• Materials burnt when smoke will cause minimal concern to neighbours/community						
• Materials burnt in a manner that minimises smoke creation						
71 The effectiveness of the actions is being monitored and recorded						
7d Noise management						
72 An assessment of the risk has been undertaken						
73 Based on the result of the risk assessment, are further actions required?						
74 If so, what actions are needed or have been undertaken?						
• Buffer zones established						
• Reducing noise from equipment (e.g. use electric motors, muffle equipment, sound proofing)						
• Minimising noise generation at times that causes concern to neighbours/community						
75 The effectiveness of the actions is being monitored and recorded						

Review checklist

8 Energy and greenhouse gas management	Yes	No	Not relevant to my property	Needs attention	Actions taken in the past 12 months	Actions required in the next 12 months
80 An assessment of the opportunities to minimise energy usage has been undertaken (carbon footprint or energy audit)						
81 Based on the result of the risk assessment, are further actions required?						
82 If so, what actions are needed or have been undertaken?						
• Carbon footprint or Energy audit undertaken and action plan developed						
• Irrigation equipment appropriate for flow required and regularly maintained						
• Equipment and vehicles are maintained and efficient						
• Turn off any machinery or equipment that is not being used						
• Fuel usage monitored, LPG and natural gas used where possible						
• Energy-efficient lighting						
• Efficient coolroom design and equipment regularly maintained and calibrated						
• Where possible renewable resources used or greenpower purchased						
• Reducing nitrous oxide emissions through efficient use of nitrogenous fertilisers						
• Reducing CFC emissions through maintenance of refrigeration equipment						
83 The effectiveness of the actions is being monitored and recorded						