Soil management and monitoring plan (F-023)

Sustainable Grain Australia

SGA is an initiative of the AOF.

SGA Central Office and audit enquiries,
Phone: 02 8007 7553 or email
sgainfo@sustainablegrain.com.au

Australian Oilseeds Federation

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Background

It is a requirement of the ISCC program and the Renewable Energy Directive (RED II) regulation Article 29(2) that growers develop a Soil management and monitoring plan to promote soil carbon sequestration and soil quality.

Soil carbon in the context of RED II, can be considered to represent soil organic content, i.e. the amount of carbon stored in the soil. Soil carbon content can also be expressed as soil organic matter. Soil organic matter levels reflect soil health. It influences soil structure, water and nutrient retention, soil biodiversity and plant nutrition. A decrease in organic matter can indicate a decline in soil health, fertility and structure.

Growers can describe and verify their adoption of practices that promote soil carbon sequestration and soil quality as below.

A documented Soil management and monitoring plan must be kept for at least five years. It details an integrated approach of on-farm practices that enhances long-term sustainable soil management.

Completing the table below can meet these requirements.

Soil management Activity	Requirement and quality parameter	Is in place Yes	No
Crop rotation	**3-year crop rotation that includes legumes, or green or brown manure crops in the cropping system.** Do you have a suitable rotation written in a cropping plan? (This is to promote an integrated approach to managing soil fertility, soil carbon sequestration, erosion mitigation, soil biodiversity, and weed and pathogen management.) **List crops in rotation** Year 1 _____ Year 2 _____ Year 3 _____	☐	☐

Soil management Activity	Requirement and quality parameter	Is in place Yes	No
Soil compaction management	**To minimise soil compaction, appropriate frequencies and timing of field operations including sowing/tillage are to be planned to avoid traffic on wet soils.**		
	Aims to maintain/improve soil structure and soil biodiversity.		
	Do you adopt minimum/no till techniques to prevent compaction and improve soil organic matter/structure?	☐	☐
	NB: This is a mandatory requirement.		
	Do you adopt any other techniques to minimise soil compaction.	☐	☐
	If yes, select any that apply:		
	☐ Control traffic configurations on seeding equipment		
	☐ Control traffic configurations on spraying equipment		
	☐ Control traffic configurations on harvest equipment		
	☐ Allocate off-field sites for grain harvest bins		
	☐ Avoid traffic on wet soils		
	☐ Livestock exclusion on wet soils		
	☐ Strategic deep ripping/tillage		
	☐ Gypsum amelioration		
	Other (please describe): _____		
Soil erosion management	**Prevent erosion and retain/improve soil biodiversity.**		
	Do you adopt minimum/no till techniques to minimise soil erosion and improve soil biodiversity?	☐	☐
	NB: This is a mandatory requirement.		
	Do you adopt any other techniques to minimise soil erosion and improve soil biodiversity?	☐	☐
	If yes, select any that apply:		
	☐ Control traffic configurations on seeding equipment		
	☐ Control traffic configurations on spraying equipment		
	☐ Control traffic configurations on harvest equipment		
	☐ Avoid traffic on wet soils		
	☐ Maintain stubble/residues		
	☐ Maintain ground cover levels.		
	☐ Livestock exclusion on wet soils		
	Other (please describe): _____		
Stubble/crop residue retention	**Retain crop residues.**		
	Do you retain stubble?	☐	☐
	Do you make hay?	☐	☐
Brown manure	Do you use brown manure crops?	☐	☐
Stubble burning	No burning is permitted on arable land except where an exemption has been granted for plant health reasons.		
	This is to promote the retention of soil carbon.		
	Do you burn stubble?	☐	☐
	If yes, do you have a burning permit or other authorisation?	☐	☐
	NB: This evidence will be required to be shown if selected for an audit.		

Soil management Activity	Requirement and quality parameter	Is in place Yes	No
Acid soils	**Lime application to improve soil structure, soil biodiversity and soil carbon**		
	Do you measure soil pH?	☐	☐
	Is your soil acidic?	☐	☐
	If yes, is lime applied?	☐	☐
	Do you use variable rate technology to apply lime?	☐	☐
	How often is limed applied? Every _____ years		
	What is the average rate applied? _____ kg/ha		
	Is the rate available in the fertiliser records?	☐	☐
	(This will need to be shown during an audit.)		
	Excluding lime application, do you use other strategies to manage acid soils? Select any that apply:	☐	☐
	☐ Regularly monitor soil pH		
	☐ Grow acid tolerant crops and pastures		
	☐ Avoid acidifying fertiliser e.g. MAP, SOA		
	☐ Banding fertiliser at sowing		
	☐ Topdress N fertiliser to actively growing crops		
	☐ Apply N fertiliser using variable rate technology		
	☐ Encourage deep rooting of crops		
	☐ Avoid or minimise hay production		
	Other (please describe): _____		
Soil fertility improvement	**Crops should be grown on suitable soils. To ensure the sustainable treatment of soils, good agricultural soil management practices must be adopted.**		
	Do you use any techniques to improve soil fertility?	☐	☐
	If yes, select any that apply:		
	☐ Monitor changes in soil fertility		
	☐ Incorporate legumes in the rotation		
	☐ Tactical fertiliser use to meet crop requirements and longer term soil targets		
	☐ Use of variable rate technology to apply fertiliser		
	☐ Retain crop residues		
	☐ Grow green/brown manure crops		
	☐ Apply composted organic material e.g. manure, chicken litter, biosolids		
	☐ Include perennial-based pastures		
	☐ Manage livestock grazing to avoid overgrazing		
	Other (please describe): _____		

Soil management Activity	Requirement and quality parameter	Is in place Yes	No
Salinisation	Do you use techniques to minimise salinisation? If yes, select any that apply: ☐ Implement whole farm planning to identify appropriate land use zones ☐ Sow crops early in sowing windows ☐ Agronomic management to enhance healthy vigorous crops to utilise available soil water ☐ Agronomic management to enhance healthy vigorous pastures to utilise available soil water ☐ Minimise frequency of long fallows ☐ Maintain long-term perennial-based pastures ☐ Manage livestock grazing to avoid overgrazing ☐ Conserve and manage remnant vegetation ☐ Plant trees Other (please describe): _____	☐	☐
Soil structure	There are several, often integrated approaches used to improve soil structure. Do you use any techniques to improve soil structure? **Strategy: Increasing organic carbon and organic matter** Select any that apply: ☐ Grow a diverse range of crop (and pasture) types ☐ Grow deep rooting, vigorous crops (and pastures) ☐ Incorporate legumes in the rotation ☐ Grow multi-species crops ☐ Retain crop residues ☐ Grow green/brown manure crops ☐ Include perennial-based pastures ☐ Manage livestock grazing to avoid overgrazing Other (please describe): _____	☐	☐
	Strategy: Use of soil ameliorants Select any that apply: ☐ Apply composted organic material e.g. manure, chicken litter, biosolids ☐ Include perennial-based pastures ☐ Apply soil ameliorant e.g. gypsum ☐ Use of variable rate technology to apply gypsum Other (please describe): _____	☐	☐
	Strategy: Cultural practices Select any that apply: ☐ Strategic deep ripping/tillage ☐ Incorporation/deep ripping of gypsum amelioration Other (please describe): _____	☐	☐

Monitoring approach Activity	Requirement and quality parameter	Is in place Yes	 No
Risk assessment	Do you have a document/cropping plan that identifies areas with high risk of soil quality decline and a plan/strategy that improves or prevents further decline of these areas? This is a mandatory requirement. Describe the steps that have been undertaken to improve/prevent the further decline of these areas: _____ _____ _____	☐	☐
Soil organic matter/ organic carbon	Monitoring requires consistent sampling of soil organic matter levels. This enables appropriate strategies to be applied to changing levels. It is a requirement that you have records that demonstrate that soil organic matter/ organic carbon is measured on an ongoing basis. Do you have records that show that soil carbon/matter is measured? If yes, 1. Complete at least one value as below: Year _____ Value _____ Units _____ Year _____ Value _____ Units _____ Year _____ Value _____ Units _____ 2. Upload the last 3 years' reports or any reports you may have within this period.	☐	☐
Soil erosion assessment	Are there any areas on the farm that have suffered from soil erosion? If yes, describe what steps have been undertaken to address the soil erosion in these areas? _____ _____ _____	☐	☐

This Soil Management Plan is to be signed to signify its approval by your agronomist/farm advisor.

Therefore supply the following:

Advisor's company name:

Advisor name:

Email:

Phone:

Approval date:

Please complete this form, and keep it on file for five (5) years.
You are only required to send this form to SGA if you are selected to be audited.