

Grains Water Quality Risk Framework 2017-2022

Soil management (weighting)	Relative water quality risk				
	Lowest risk (A)	Moderate – Low risk (B)	Moderate risk (C)	High risk (D)	Not applicable
	Innovative	Best practice	Minimum standard	Superseded	
Use of tillage (30%)	As for best practice AND Strategy to control certain difficult to control weeds may involve occasional zonal or 'patch' tillage. Fertiliser is applied using zero-till machinery.	Crops are planted into standing stubble from the previous crop/s. Tillage is only used when required to deal with severe compaction, nutrient stratification, or as part of a strategy to manage certain difficult weeds. Fertiliser is applied using zero-till machinery.	Efforts are made to maintain stubble cover during fallows. Stubble usually needs to be cultivated to allow for planting and/or fertiliser is applied using full disturbance implements.	Tillage is frequently used for weed control and/or managing stubble.	
Crop selection (30%)	Maintaining >30% stubble cover is high priority when choosing crops. Successive low-stubble crops are avoided. Back to back pulse crops will not occur. Grain crops may be planted into marginal soil moisture for the purpose of increasing ground cover.	Maintaining >30% stubble cover is high priority when choosing crops. Successive low stubble crops are rare. Back to back pulse crops are avoided.	Crop rotation based on planting opportunities and gross margin, with little or no consideration of stubble cover. Back to back pulse crops may be grown if commodity prices are high.		



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	Innovative	Best practice	Minimum standard	Superseded	
Wheel traffic (20%)	A controlled traffic system is in place with all tractors and implements, headers and mobile grain bins operating on the same set of wheel tracks. All machines operate under GPS guidance of at least 4cm pass to pass accuracy.	A controlled traffic system is in place with all tractors and implements, headers and mobile grain bins operating on the same set of wheel tracks. Spraying and planting occurs under machine guidance of at least 10cm pass to pass accuracy.	All farm equipment except headers and mobile grain bins operates on the same wheel spacing and consistent implement width.	Farming equipment has different widths and wheel spacing.	
Erosion control (20%)	Contour and diversion banks are present and regularly maintained. The placement and design of banks is informed by a skilled third party. Secondary forms of sediment control (such as sediment traps) are in place.	Contour and diversion banks are present and regularly maintained. The placement and design of banks is informed by a skilled third party.	Contour and diversion banks are present and regularly maintained.	Contour and diversion banks not present or not maintained in functional state.	All farmed land has a slope lower than 1%.

Nutrient management (weighting)	Relative water quality risk				
	Lowest risk (A)	Moderate – Low risk (B)	Moderate risk (C)	High risk (D)	Not applicable
	Innovative	Best practice	Minimum standard	Superseded	
Determining nitrogen requirements (40%)	Yield mapping data informs precise variable fertiliser rate control for specific management zones. Pulse crops are regularly included in the crop rotation to reduce need for N fertiliser.	Yield and protein data is matched to crop performance zones to formulate soil sampling strategies and N management decisions for individual zones. Pulse crops are regularly included in the crop rotation to reduce need for N fertiliser.	Regular soil analysis, in conjunction with yield/protein information, is used to make N management decisions.	Fertiliser N rates are based on historical rates or rules of thumb for particular crops.	Do not use nitrogen fertiliser.
Influence of stored soil moisture on yield and N fertiliser decisions (40%)	Stored soil moisture is monitored throughout the fallow and decision support tools are used to indicate yield potential when selecting fertiliser application rates.	Stored soil moisture is monitored throughout the fallow and informs decisions on yield potential and appropriate fertiliser rates.		Stored soil moisture is not considered when selecting fertiliser application rates.	Do not use nitrogen fertiliser.
Application timing to minimise potential losses and maximise uptake of N fertiliser (20%)	N fertiliser is applied early in a fallow to minimise probability of losses. Fertiliser may be applied as split applications (e.g. during the fallow, at planting and/or in crop).	N fertiliser is applied early in a fallow to minimise probability of losses.	Normal practice is that N fertiliser is only applied late in the fallow and/or when there is a full soil moisture profile.		

Pesticide management (weighting)	Relative water quality risk				
	Lowest risk (A)	Moderate – Low risk (B)	Moderate risk (C)	High risk (D)	Not applicable
	Innovative	Best practice	Minimum standard	Superseded	
Targeting herbicide application (30%)	Bandspray residual herbicides, and/or target specific zones within paddocks rather than apply to 100% of the paddock.		Knockdown and residual herbicides are usually applied through conventional boomspray with 100% paddock coverage.		Rarely use herbicides. Usually rely on tillage or livestock for weed control.
Use of residual herbicides (40%)	Residual herbicide use is confined to paddocks, parts of paddocks and seasons when weed pressure is high. Application of multiple below-label rates of residual herbicides through the year is preferred to full label rates.		The same residual herbicide program (fallow and in-crop, pre- and post-emergent) is used in each paddock every year, in response to possible or anticipated weed pressure. High-risk products are usually applied once per season and prior to commencement of the wet season.		Rarely use residual herbicides.
Efficient herbicide application (15%)	Boomspray operates under machine guidance of at least 10cm pass to pass accuracy in a controlled traffic system. Boom has automated section and individual nozzle controls to further minimise overlap.	Boomspray operates under machine guidance of at least 10cm pass to pass accuracy in a controlled traffic system. Boom has automated section control to further minimise overlap.	Boomspray operates in a controlled traffic system to minimise overlap.	Boomspray does not operate in a controlled traffic system or with GPS guidance.	Rarely use herbicides. Usually rely on tillage or livestock for weed control.
Pesticide selection (15%)	Herbicide choice is informed by assessment of weed control efficacy AND environmental risk, with lower toxicity products selected wherever feasible. Product choice considers rate, relative toxicity, product half-life, solubility, soil adsorption properties and their interaction with the soils on the farm.		Pesticide product choice is based on efficacy and cost effectiveness of control.		