

Animal Residue Data Sheet Clopyralid

Clopyralid is registered in Australia for use on cereals, canola, pastures, fallow land, forests, right-of-way and industrial situations, tree plantations and turf. Details of the registered use patterns can be found on the approved labels of registered products containing clopyralid as the active constituent. This Animal Residue Data Sheet provides information on the possible residues in feed commodities obtained from crops treated with clopyralid. It also provides information on the anticipated maximum dietary exposure of animals fed treated commodities, which should not result in the violation of animal MRLs.

Current MRLs

The Australian MRLs for clopyralid in food and animal feed commodities, as listed in Table 1 and Table 4 of the *MRL Standard* (as at July 2004) are shown below. The residue definition of clopyralid is clopyralid *per se*.

Code	Food	MRL, mg/kg
Food Commodities		
GC 0080	Cereal grains	2
SO 0495	Rape seed	0.5
Animal commodities		
MO 0105	Edible offal (mammalian) [except kidney]	0.5
MO 0098	Kidney of cattle, goats, pigs and sheep	5
ML 0106	Milks	0.05
MM 0095	Meat [mammalian]	0.1
Animal feed commodities		
	Canola fodder	10
	Canola forage	25
	Forage of cereal grains	25
	Pasture	100
AS 0081	Straw and fodder (dry) of cereal grains	10

Summary of maximum feeding levels and livestock dietary intakes

The Maximum Feeding Level (MFL, the feeding level at which the MRLs are based), the equivalent Daily Dietary Intake For Livestock (DDIL) and the equivalent daily intake of clopyralid are summarised below.

Species	MFL, ppm in diet	Equivalent DDIL, mg/kg bw	Equivalent intake of clopyralid, mg/animal/day
Cattle ^a	300	8.8	1920
Dairy cow ^b	300	12	6000
Sheep ^c	300	12.5	750
Pig ^c	300	12.5	750
Poultry ^d	-	-	-

^a Based on animal transfer data (217 kg calves consuming 6.4 kg DM/day)
^b Based on a 500 kg animal consuming 20 kg DM/day
^c Based on a 60 kg animal consuming 2.5 kg DM/day
^d No poultry MRLs established

Detailed information

All feed commodities

Feed commodities that may contain residues of clopyralid are listed in the table below. The theoretical maximum proportion of the diet that the commodity can comprise, when residues are present at the MRL, without the significant risk of animal commodity MRLs being violated is also given. It should be noted that the feeding levels assumed by the NRA when setting animal commodity MRLs are theoretical values, and they should not be taken as recommendations of appropriate rations for livestock.

Commodity ^a	Assumed Maximum proportion of diet (%) ^b	Feed intake (kg/animal/day) ^c	Residue (mg/kg) ^d	Maximum intake of clopyralid from commodity (mg/animal/day) ^e	Theoretical maximum proportion of diet (%) ^f
Cattle (Based on a 500 kg animal consuming 20 kg DM/day)					
Cereal grains	100	20	2	40	100
Rape seed	30	6	0.5	3	100
Canola fodder	100	20	10	200	100
Canola forage	100	20	25	500	100
Forage of cereal grains	100	20	25	500	100
Pasture	100	20	100	2000	100
Straw and fodder (dry) of cereal grains	100	20	10	200	100
Sheep (Based on a 60 kg animal consuming 2.5 kg DM/day)					
Cereal grains	100	2.5	2	5	100
Rape seed	30	0.75	0.5	0.375	100
Canola fodder	100	2.5	10	25	100
Canola forage	100	2.5	25	62.5	100
Forage of cereal grains	100	2.5	25	62.5	100
Pasture	100	2.5	100	250	100
Straw and fodder (dry) of cereal grains	100	2.5	10	25	100
Pigs (Based on a 60 kg animal consuming 2.5 kg DM/day)					
Cereal grains	100	2.5	2	5	100
Rape seed	30	0.75	0.5	0.375	100
Poultry (Based on a 2 kg animal consuming 150 g DM/day)					
MRLs not established					
^a The feed commodities that may contain residues of clopyralid, and may form more than 20% of an animals diet.					
^b The maximum % of the diet that the commodity is assumed to comprise for the purposes of setting MRLs, based on Stockfeed Information Document 1					
^c The equivalent amount of feed for an animal of designated weight and feed intake that is assumed for the purposes of setting MRLs					
^d The MRL for each feed commodity (correction for dry weight basis where required)					
^e The maximum intake of clopyralid when the commodity is fed at the maximum assumed level (Column 1) in the absence of other sources of clopyralid.					
^f The maximum % of the diet at which the commodity could theoretically be fed without significant risk of exceeding animal commodity MRLs. It is assumed that the residue in the feed commodity is present at the MRL (or dry weight equivalent) and other dietary sources of clopyralid are absent.					

Abbreviations and definitions

DM: Dry matter. The feed consumption for livestock and the residue levels in feed commodities are expressed on a dry matter basis.

DDIL: Daily Dietary Intake for Livestock. The level of dietary exposure for a specified chemical in a specified species that should not result in exceedance of the relevant animal commodity MRLs. Expressed in mg chemical/kg bodyweight.

HR: Highest residue observed in supervised residue trials

MFL: Maximum Feeding Level. The level of dietary exposure for a specified chemical in a specified species that should not result in exceedance of the relevant animal commodity MRLs. Expressed in terms of ppm in the feed.

MRL: The concentration of a chemical residue, in units of mg/kg, that is legally permitted in or on a food or food commodity.

ppm in the feed: Parts per million in the feed. An alternate way of expressing the level of dietary exposure for a chemical. The level of chemical intake is calculated as though it were present uniformly in the total feed intake. The ppm in the feed is calculated using the following formula: $DDIL \text{ (mg chemical/kg bw)} \times \text{body weight (kg)} \div \text{daily feed intake (kg)}$.

STMR-P: Supervised Trial Median Residue of the processed commodity. The highest residue that livestock are likely to be exposed to in practice when fed processed commodities over a prolonged period. This is derived from the STMR of the whole commodity multiplied by the processing factor.

Attachment 1: Anticipated maximum dietary exposure

The following calculations outline the theoretical diet used to calculate the maximum anticipated dietary exposure, maximum feeding level (MFL) and the daily dietary intake for livestock (DDIL) for cattle, sheep, pigs and poultry.

Cattle

Feed group	Feed commodity	% in the diet	Feed intake, kg/animal/day ^a	Residue, mg/kg	% DM ^b	Intake of clopyralid, mg/animal/day ^c
Forage/fodder	Pasture	100	20	100	-	2000
Total	-	100	20	-	-	2000

^aBased on assumed feed consumption of 20 kg dry matter/day
^bEstimate of percentage dry matter. Applied to MRLs expressed on a fresh weight basis
^cBased on assumed bodyweight of 500 kg

Maximum anticipated dietary exposure: 2000 mg/animal/day
 equivalent to: 4 mg/kg bw
 equivalent to: 100 ppm in the diet

MFL (Based on the available cattle transfer data): 300 ppm in the diet
 equivalent DDIL: 8.84 mg/kg bw (tissues), 12 (milk)

Sheep

Feed group	Feed commodity	% in the diet	Feed intake, kg/animal/day ^a	MRL, mg/kg	% DM ^b	Intake of clopyralid, mg/animal/day ^c
Forage/fodder	Pasture	100	2.5	100	-	250
Total	-	100	2.5	-	-	250

^aBased on assumed feed consumption of 2.5 kg dry matter/day
^bEstimate of percentage dry matter. Applied to MRLs expressed on a fresh weight basis
^cBased on assumed bodyweight of 60 kg

Maximum anticipated dietary exposure: 250 mg/animal/day
 equivalent to: 4.2 mg/kg bw
 equivalent to: 100 ppm in the diet

MFL (Extrapolated from the available cattle transfer data): 300 ppm in the diet
 equivalent DDIL: 12.5 mg/kg bw

Pigs

Feed group	Feed commodity	% in the diet	Feed intake, kg/animal/day ^a	MRL, mg/kg	% DM ^b	Intake of clopyralid, mg/animal/day ^c
Cereal grains	eg Wheat grain	100	2.5	2	-	5
Total	-	100	2.5	-	-	5

^aBased on assumed feed consumption of 2.5 kg dry matter/day
^bEstimate of percentage dry matter. Applied to MRLs expressed on a fresh weight basis
^cBased on assumed bodyweight of 60 kg

Maximum anticipated dietary exposure: 5 mg/animal/day
 equivalent to: 0.08 mg/kg bw
 equivalent to: 2 ppm in the diet

MFL (Extrapolated from the available cattle transfer data): 300 ppm in the diet
 equivalent DDIL: 12.5 mg/kg bw

Poultry

Feed group	Feed commodity	% in the diet	Feed intake, kg/animal/day ^a	MRL, mg/kg	% DM ^b	Intake of clopyralid, mg/animal/day ^c
Cereal grains	eg Wheat grain	100	0.15	2	-	0.30
Total	-					

^aBased on assumed feed consumption of 0.150 kg dry matter/day
^bEstimate of percentage dry matter. Applied to MRLs expressed on a fresh weight basis
^cBased on assumed bodyweight of 2 kg

Maximum anticipated dietary exposure: 0.3 mg/animal/day
 equivalent to: 0.15 mg/kg bw
 equivalent to: 2 ppm in the diet

MFL : No MRLs established
 equivalent DDIL: No MRLs established