

Getting Full Value From Mill Products

The benefits of mill mud and mud/ash are well known, but are you getting full value out of your mill products? With the recent significant increase in fertilizer prices and mill mud/ash prices remaining unchanged, the economic cost for using mill products has never been so strong. To take full advantage of this, the nutrients in mud and mud/ash should be considered, providing a smart way to reduce your fertilizer bill.

Mill products are good because they;

- Contain a decent amount of nutrients (carbon, nitrogen, phosphorus, potassium, sulphur, calcium, magnesium, zinc, copper and manganese)
- Improve soil texture and structure
- Improve soil water storage
- Increase soil pH

Ash is also a very important supplier of silicon which becomes deficient in some soils and helps improve soil permeability and helps treat sodicity.

Not all the nutrients in mud products are available straight away. The table below shows the nutrients the cane can use in the first year and their dollar value.

		Mill Mud		Mud/Ash	
	Nutrient Value \$/kg	Available nutrients in 150t mud in first year	Nutrient value in first year	Available nutrients in 150 tonnes mud/ash	Nutrient value in first year
Nitrogen	\$2.74	80	\$219	50	\$137
Phosphorus	\$4.33	120	\$520	100	\$433
Potassium	\$1.80	40	\$72	120	\$216
Sulphur	\$0.34	10	\$3	10	\$3
Calcium	\$0.50	360	\$180	270	\$135
			\$994		\$924

Note that additional nutrients in mill products become available during the remainder of the crop cycle.

Note too that if you apply more than 100 t/ha of mud it must be accounted for under reef regulations.

Banded Mill Mud & Mud/Ash Guidelines

Mud (Racecourse & Farleigh Mills)

Table 1: Typical nutrient content of mill mud & estimated available nutrients when applied at 50 t/ha banded on the row

MUD	50 t/ha	Estimated available nutrients (kg/ha)		
Nutrients	Typical nutrient content (kg/ha)	1 st crop	2 nd crop	3 rd & 4 th crop
Nitrogen	140	26.7	13.3	0
Phosphorus	140	sufficient	sufficient	sufficient
Potassium	40	13.3	0	0
Sulfur	10	3.3	3.3	3.3
Calcium (0.7 t/ha lime)	280	Calcium needs met	Calcium needs met	Calcium needs met

Table 2: Estimated \$ value of mill mud available over a 3-year period when applied at 50t/ha.

Nutrient	Nutrient cost	Estimated available nutrients & their value in 50 t/ha mud	
	\$/kg	kg/ha	value \$/ha*
Nitrogen	2.74	40	110
Phosphorus	4.33	120	520
Calcium	0.50	280	140
Potassium	1.80	13.3	24
Sulfur	0.34	10	3
Total			797

* Nutrient costs are correct as of October 2021. Mud contains cane fibre which equates to about 28 % carbon content in dry matter. 50 wet t/ha of mud dries down to about 12 dry t/ha. This contributes about 3.5 t/ha of carbon to the soil. Useful quantities of magnesium, zinc, copper & manganese are also present and have not been given a dollar value.



Mud/Ash (Marian Mill)

Table 3: Typical nutrient content of mud/ash & estimated available nutrients when applied at 50 t/ha banded on the row

MUD/ASH	50t/ha	Estimated available nutrients (kg/ha)		
Nutrients	Typical nutrient content (kg/ha)	1 st crop	2 nd crop	3 rd & 4 th crop
Nitrogen	100	16.7	6.7	0
Phosphorus	100	sufficient	sufficient	Check with leaf test in 3 rd crop
Potassium	60	40	0	0
Sulfur	15	3.3	3.3	0
Calcium (0.5 t/ha lime)	180	Calcium needs met	Calcium needs met	Calcium needs met

Table 4: Estimated \$ value of mud/ash available over a 3-year period when applied at 50t/ha.

Nutrient	Nutrient cost	Estimated available nutrients & their value in 50 t/ha Marian mud/ash	
	\$/kg	kg/ha	value \$/ha*
Nitrogen	2.74	23.4	64
Phosphorus	4.33	100	433
Calcium	0.50	180	90
Potassium	1.80	40	72
Sulfur	0.34	5	2
Total			661

Guidelines: when using **50 t/ha** mill mud or mud/ash banded on row:

- No phosphorus is needed at planting or in 3 ratoons following mud application
- Leaf testing is recommended in 3rd crop after mud/ash application to check P adequacy in the crop
- If soil BSES P is greater than 50 mg/kg, do NOT apply phosphorus fertiliser, mill mud or mud/ash
- This rate supplies approximately 0.5-0.7 t/ha of lime & the calcium needs for the crop cycle
- If calcium levels are deficient (less than 1.1 meq %) or soil pH < 5.5, extra lime is needed
- Reduce fertiliser nitrogen rate (10-15%) in the first crop after application

