

Biosolids

What are Biosolids?

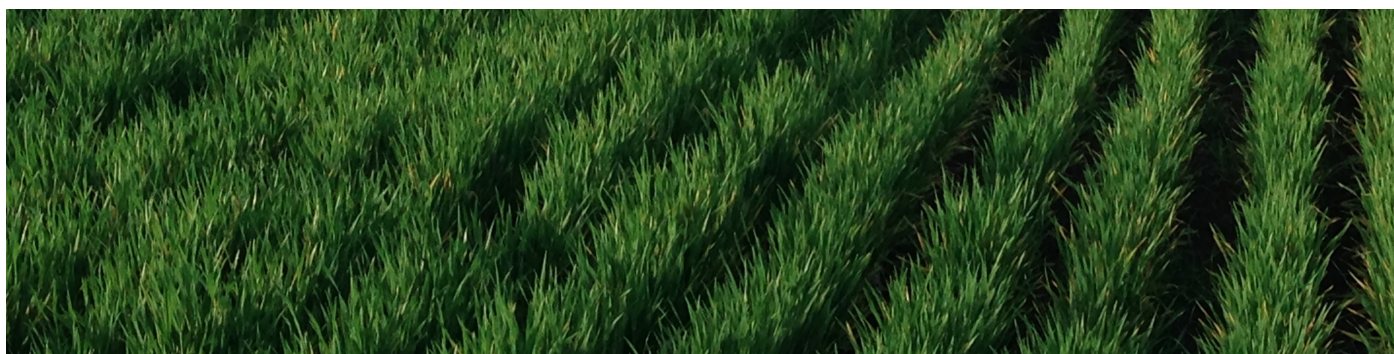
Biosolids are the organic product that results from the sewage treatment process. Under an NSW EPA Resource Recovery Exemption biosolids can be land applied as a soil amendment to farms, mines and forestry sites.

What is in Biosolids?

Biosolids contain high levels of organic matter in addition to the macronutrients nitrogen (N), phosphorus (P), sulfur (S) and potassium (K) and other essential plant micronutrients such as copper (Cu), zinc (Zn) and manganese (Mn). The final composition of the material is variable since it depends on the raw sewage quality.

What are the Benefits?

Biosolids can be used as a beneficial soil conditioner due to their levels of macro nutrients and organic carbon. Australian trials¹ using biosolids have shown that in favourable weather conditions biosolids can have a positive effect on various crop yields with the main benefit probably being due to additions of N and P. Furthermore, organic matter also conserves soil moisture and promotes root growth.



Comparison of Biosolids with Conventional Fertilisers

Fertiliser	Application Rate	Organic Carbon	N Applied	P Applied	K Applied	S applied
DAP*	100 kg/ha	-	18 kg/ha	20 kg/ha	-	5 kg
MAP*	100 kg/ha	-	10 kg/ha	22 kg/ha	-	1.6 kg
Single Super*	125 kg/ha	-	-	11.25 kg/ha	-	13.7 kg
Biosolids**	130 t/ha	37%	1473 kg/ha 366 kg/ ha Available N***	717 kg/ha 151 kg/ha Available P	152 kg/ha	219 kg/ha

*NSW DPI Prime Fact 859 'Use of Biosolids in Agriculture, 2009.

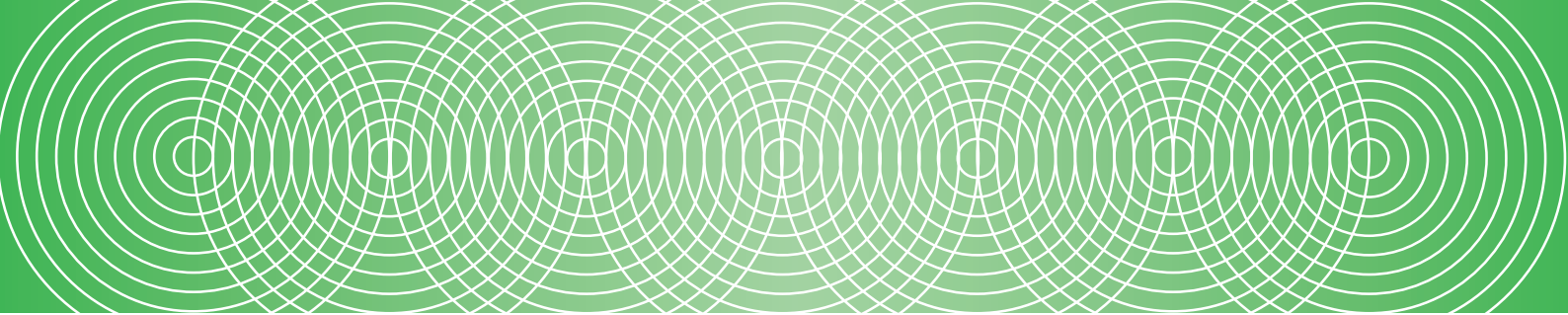
** Average biosolids data from NSW Biosolids produced 2012 to 2019.

*** Available N in 1st year.

Are Biosolids Safe?

According to a panel of experts in microbiology and infectious diseases, convened by NSW Health, 'the risk to human health was negligible if the treatment and use recommended by the Guidelines is followed' (NSW Ministry of Health, 2012). In NSW, Biosolids have been applied to soils for more than 20 years. 'NSW Health is not aware of any outbreaks of illness in workers, or the general public caused by biosolids use'.

1 - M McLaughlin, M Bell, D Nash, D Pritchard, M Whatmuff, M Warne, D Heemsbergen, Broos, K., G Barry, and N Penney. Benefits of using biosolid nutrients in Australian agriculture - a national perspective, National Biosolids Research Program (NBRP)



Biosolids Land Application Regulation

Biosolids are delivered to site in trucks and tipped in a storage area known as a bund. They are surface applied directly to land using fertiliser spreaders. Biosolids must be incorporated into the soil after application. The conditions for spreading and incorporation are set out in the Biosolids Resource Recovery Exemption.



Requirement	Details	Responsibility
Site Assessment*	Soil testing, site assessment and mapping. Assessment of areas not suitable for application or environmentally sensitive areas	Loop Organics
Application Site Use	Apply to suitable areas i.e. within grazing, cropping, or apply to degraded lands for rehabilitation. Stock withholding periods of 30 - 90 days apply	Farmer
Application Rate	Typically, 75-170 tonnes per ha	Loop Organics
Spreading	Spread product within 30 days of delivery at a target rate	Loop Organics
Ploughing	Incorporation into the soil within 36 hours of application	Farmer
Suitable sites	Truck access for safe delivery and flat area for storage	Farmer Loop Organics

What do I need to do?

We will arrange to meet you at the proposed application site and set out terms of supply in a Participation Agreement before starting delivery.

