

AGRICULTURE INFO FLYER



Dulverton Organics work closely with SESL Australia's soil scientists to provide easy to understand soil correction advice to help you look after your most important land asset. SESL Australia has developed a calculator to assist with the strategic use of compost in a modern fertility management system, using soil and compost analyses to determine supplementary fertiliser requirements based on the nutrient demands of different crop types.

We strongly recommend that agricultural end users who regularly accept our biosolids enriched compost, obtain a copy of the Tasmanian Biosolids Reuse Guidelines 2020 (TBRG 2020). Dulverton only produce Class 1 biosolids which are essentially unrestricted as regards contaminants but farmers should be aware of restrictions on applying biosolid enriched products near water ways and withholding periods for stock which are all detailed within the TBRG 2020.

Here is a brief summary for you to consider when land-applying biosolid enriched products to improve your soils:

1. WITH-HOLDING PERIODS

Minimum withholding periods apply for certain crop types. These may vary between 30 days and 5 years depending on the crop and end user. Detail can be found in Table 10.1 in section 10.3.2 of the Tasmanian Biosolids Reuse Guidelines 2020 (TBRG 2020)

2. SITE CONSTRAINTS

Site characteristics which may cause off-site migration of nutrient-rich runoff may prevent application of biosolid enriched products (further detail can be found in section 11.1 of the TBRG 2020).

- Slope - Slopes must generally be <15% or <1:7.
- pH - Soil pH must be between 4.5 – 7.5 (or pH 4.5 -7.0 for lime amended biosolids).
- Buffer distances - Generally between 5 – 250 m, dependent on the type of adjacent land use.
- Drainage – No application on waterlogged, flood prone or extremely permeable soils.
- Shallow groundwater – No application to land with a water table < 1.5 m below ground.
- Rocky ground - No application to untiltable land.

3. SOIL TESTING

Soil testing is required to ensure that soils are not overloaded with nutrients (nitrogen) or elements that may inhibit plant or soil productivity (arsenic, cadmium, zinc and copper for example). It is recommended that soils are tested prior to each application of biosolid enriched product.

- Collect 1 composite sample per 20 hectares (comprised of 30-40 smaller samples from the upper 100 mm). Approximately 0.5-1.0 kg per sample is sufficient for testing.
- Submit for testing of the parameters below:

Soil Parameter	Unit
pH (CaCl ₂)	pH units
Cation Exchange Capacity	cmolc/kg
Clay Content, Organic Carbon Content, Total Iron	%
Total Cadmium, Copper, Zinc	mg/kg (dry weight basis)
Total Arsenic, Lead, Mercury, Nickel*	mg/kg (dry weight basis)

*As required

Biosolid Nutrients	Unit
Ammonia	mg/kg (dry weight basis)
Nitrate + Nitrite, Total Kjeldahl Nitrogen	mg/kg (dry weight basis)
Moisture Content	%

4. APPLICATION RATES

Biosolid enriched products should be applied to land at a suitable rate. Information on calculating the Nitrogen Limited Application Rate (NLAR) and Contaminant Limited Application Rates (CLAR) is provided in section 12 of the TBRG 2020.

The more stringent result between the NLAR and CLAR will determine the maximum allowable biosolids application rate (MABAR), which should not be exceeded at any point. An example of MABAR calculation is provided in Appendix F of the TBRG 2020 (Stage 2: MABAR Determination).

You will need the following information to calculate the NLAR:

- Biosolids - Total nitrogen (as ammonium, nitrate, nitrite, kjeldahl nitrogen)
- Biosolids - Moisture content
- Crop – nutrient (N) requirement

You will need the following information to calculate the CLAR:

- Biosolids – Metal concentrations (cadmium, copper, zinc, arsenic, lead, mercury, nickel)
- Soil – Metal concentrations (cadmium, copper, zinc, arsenic, lead, mercury, nickel)

5. RECORD KEEPING

Records of application dates for biosolid enriched products, application rates and subsequent uses of the applied area must be consistently maintained.