**Soil extract medium (SEM)**

The soil was sieved to 2 mm to remove any stones and unwanted debris. Soil and deionised water were added to a 2 L bottle in a 4:9 ratio, and mixed by inverting for 5 min. The bottle was then autoclaved at 121°C for 1 h. The supernatant was removed to a new bottle and the remaining soil slurry centrifuged at 5000x*g* for 15 min. The supernatant from the centrifuged soil slurry was then pooled with the initial supernatant. This supernatant was centrifuged at 5000x*g* for 15 min and the liquid portion (soil extract) removed. The soil extract was dispensed into batches convenient for later use and autoclaved at 121°C for 20 min. The soil extract was allowed to cool and then placed at -20°C until further use.

On the day of soil extract media preparation, one bottle of soil extract was removed from the freezer and allowed to thaw. The soil extract was centrifuged in sterile 50 ml tubes at 5000g for 15 min to ensure the extract was clear. The soil extract medium components (18 mM C6H8O7, 56.6 mM Na2HPO4, 5 mM K2HPO4, 0.4 mM MgSO4.7H2O, 7.6 mM (NH4)2SO4, 3 μM thiamine, 6 μM (NH4)2SO4.FeSO4.6H2O) were added to the soil extract aseptically as per Table 2.3, and the medium mixed well.