Research by the author into the availability of microfine calcium compounds lead to the Gyp-Flo products. The author made contact with Ultimate Products (Aust) Pty Ltd and a free sample of each of the Gyp-Flo and PH-Plus was made available for this project. At the time of earlier discussion it was not known whether the gypsum (Gyp-Flo) or the lime (PH-plus) was to be used. Brochures for each product are provided in Appendix D. The author had previously worked with a microfine gypsum clarifying turbid water. The author has no financial or business connection with Ultimate Products.

The reason the Gyp-Flo was sought over conventional agricultural gypsum was that Gyp-Flo has a particle size less than five micron, whereas agricultural gypsum has a much larger and varied particle size. The smaller particle is better able to move through the soil pores of the A horizon and reach the B horizon with percolating water. The larger surface area relative to size provides a larger area to bond to the water, and then dissolve in it, even though gypsum is only sparingly soluble. Gyp-Flo remains in suspension when added to water.

Figure 1 Setup of leachate column trial

Recycled gypsum can be obtained from recyclers of plaster board, although the particle size is often larger than ideal for use as an ameliorant on soils.

7.2 Column Test Results

Table 1 Leachate from column trials after 48 hours, except where shown

Soil sample I.D	Percolating solution	Leachate volume	Leachate description
Site 1	water	7.0	Slightly turbid
	Gyp-Flo 1	7.2	Clear
	Gyp-Flo 2	7.7	clear
Site 7	water	17	Slightly turbid
	Gyp-Flo 1 to soil, water percolate	53.3	Clear
	Gyp-Flo 2 to soil, water percolate	46.1	Clear
Site 10	water	700 (20 hrs)	Extremely turbid
	Gyp-Flo 1	182.8	Clear
	Gyp-Flo 2	99.0	Clear
Site 16	Gyp-Flo 1	309.4	Milky white

*Gyp-Flo 1 was a suspension of 5 mL Gyp-Flo in 1 L water. Gyp-Flo 2 was double this rate.

The column tests show that adding Gyp-Flo to the percolating water reduced the dispersion in the column to such an extent that dispersed particles were not passing through the soil into the leaching solution.