An Investigation of an Industrial Waste Site in South Africa, and the Potential of the Waste for Disposal to Land. (S11-warby092826-Poster)

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Abstract:

In 1972 three ponds were constructed to hold the liquid/slurry waste from an industrial concern but subsequently all plans of these ponds were lost. Little is thus known about the dimensions and method of construction of the ponds that are essentially full of reasonably solid material that requires disposal. A GPS survey was conducted to determine the dimensions of the ponds. Seventy-eight samples were collected and analysed for a range of chemical. The pH (KCl) of the samples ranged from 6.17 to 9.75 and the EC from 0.097 dS m-1 to 7.86 dS m-1. The average CEC of the samples was 21.78 cmolc kg-1. The C:N ratio ranged from 0.52 to 20.70. A composting/leaching experiment was conducted to determine if the waste would compost and to remove excess sodium from the waste, to make it more suitable for disposal to land. A pot experiment was conducted in a glasshouse to determine the yield response of Swiss chard on a sandy soil to amendments of the leached waste. As a possible rehabilitation procedure it is suggested that the waste in the pond be dug out, leached, treated with an inorganic fertiliser, and disposed of on the surrounding sandy soils.

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