

Effects of drying and salt extraction of *Moringa oleifera* on its coagulation of high turbidity water

ABSTRACT

Moringa oleifera (M.O.) has been used as a natural coagulant in water treatment. The present study aims to determine the effect of drying M.O. seed powder that has been extracted with salt (NaNO₃) on the coagulation of synthetic (kaolin) water of 200±5 NTU. The optimum quantity of M.O. was 5 mg for both 10 and 200 g/l concentrations of the non-spray-dried salt-extracted M.O. (MOC-SC) solutions, with turbidity removal of 87%. This maximum turbidity removal was achieved with 1 M and 0.5 M of NaNO₃ salt in the former and latter concentrations, respectively. The spray-dried M.O. (MOC-SC-SD) solutions exhibited better maximum turbidity removal of more than 95%, which also occurred at 5 mg of M.O., for both concentrations. Finally, the duration of storage of MOC-SC-SD did not affect its performance in the removal of turbidity.

Keyword: Coagulation; *Moringa oleifera*; Spray drying; Turbidity removal; Water treatment