

Some Observations on the Preparation of Zinc Hydroxide Nitrate Nanoparticles

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Abstract : The nanosized zinc hydroxide nitrate has been recently estimated as perspective foliar fertilizer, which has improved zinc solubility, but low phytotoxicity, in comparison with ZnO and other Zn containing compounds. The main problem is obtaining of stable particles with dimensions less than 100 nm. This work studies the effect of preparation conditions on the chemical compositions and particle size of the zinc hydroxide nitrates, prepared by precipitation. $Zn(NO_3)_2 \cdot 6H_2O$ and NaOH with concentrations, ranged from 0.2 to 3.2M and the initial OH/Zn ratio from 0.5 to 1.6 were used at temperatures from 20 to 60 °C. All samples were characterized in detail by X-ray diffraction, scanning electron microscopy, differential thermal analysis and ICP. Stability and distribution of the zinc hydroxide nitrate particles were estimated too.

Keywords : zinc hydroxide nitrate, nanoparticles, preparation, foliar fertilizer

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