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# Nanotechnological Application Based on $\text{CoFe}_2\text{O}_4$ Nanoparticles and Electromagnetic Exposure on Agrotechnical Plant Growth

I. Bodale<sup>1</sup>, M. Oprisan<sup>2</sup>, C. Stan<sup>3</sup>, F. Tufescu<sup>4</sup>, M. Racuciu<sup>5</sup>, D. Creanga<sup>4</sup> and M. Balasoiu<sup>6,7</sup>

<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine, Iasi, Romania

<sup>2</sup>University Hospital „Sf. Spiridon” Iasi, Romania

<sup>3</sup>Politehnica University of Bucharest, Department of Physics, Bucharest, Romania

<sup>4</sup>„Alexandru Ioan Cuza” University, Physics Faculty, Iasi, Romania

<sup>5</sup>„L. Blaga” University, Faculty of Sciences, Sibiu, Romania

<sup>6</sup>Joint Institute for Nuclear Research Dubna, Russia, <sup>7</sup>IFIN-HH Bucharest, Romania

This study is focused on the bioeffects of nanoparticulate metallic matter and electromagnetic exposure on agrotechnical plant cultures, designed in the general context of soil, water and air pollution. Nanotechnological procedure was carried out to yield magnetic nanoparticles (MNPs) similar to those used for various biomedical purposes for human life improvement but finally leading to MNPs delivery in the waste waters and consequently loading soil with metal ions.  $\text{CoFe}_2\text{O}_4$  MNPs were synthesized by chemical route and suspended in deionized water. Microstructural and magnetic properties were evidenced by investigations through standard solid state methods. Equal volumes of 80  $\mu\text{l/l}$  MNP suspension equivalent to  $10^{16}$  MNPs/ml were supplied to *Helianthus annuus* seedlings for 12 days. Identical sample array was exposed also to low power density microwaves for 1-2-4 hours daily. Plant response was observed using measurements of assimilatory pigment contents in green tissues of seedlings.