MANAGING GLOBAL RESOURCES FOR A SECURE FUTURE

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MANAGING GLOBAL RESOURCES FOR A SECURE FUTURE

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106566 Mineral Uptake and Foliar Senescence in Italian Ryegrass (*Lolium multiflorum*) Seedlings in Response to Sewage Sludge Extracts.

Poster Number 412

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Wednesday, October 25, 2017
Tampa Convention Center, East Exhibit Hall

*Jober Condé Evangelista Freitas[1], Jemima Gonçalves Pinto da Fonseca[2], Ângela Maria Ferreira de Oliveira Lourdes[2], Lucas P. Eiterer[3], Andrea Mittelmann[4], Paola R.C. Reis[2], Julio Cesar José da Silva[5] and **Leônidas P. Passos**[4], (1)Instituto de Ciencias Biologicas, MS Grad Student, UFJF, Juiz de Fora, Brazil*
(2)Departamento de Química, Doctorate Grad Student, UFJF, Juiz de Fora, Brazil
(3)CES-JF, Juiz de Fora, Brazil

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(4)Embrapa Gado de Leite, Juiz de Fora, Brazil
(5)Departamento de Química, UFJF, Juiz de Fora, Brazil

Abstract:

Several approaches are in use nowadays to reduce the problem of waste disposal caused by the human activity. The application of sewage biosolids in agroecosystems has been a feasible solution, although a broader utilization still depends upon adequate transport logistics. Such a limitation could be attenuated by using sewage sludge extracts (SSE), which could be further concentrated in order to facilitate long-distance transport. The objective of this work was to verify alterations in Al, Cu, Fe, N and P contents and foliar senescence of Italian ryegrass cv. BRS Ponteio exposed to different doses of water-diluted SSE. Treatments consisted of 0, 12.5, 25, 50, and 100% (v/v) SSE, and a control (Hoagland's half strength nutrient solution). The study was carried out during 30 days in a complete randomized design, with three replications and 10 plants per plot. The comparison of SSE treatments with the control using the Dunnett test showed that Fe uptake was enhanced nearly in proportion to the increase in SSE dose, while N uptake was diminished with 0, 12.5 and 25% SSE. Reductions in Al uptake were observed with 0 and 12.5% SSE. Contents of Cu and P were not altered. Foliar senescence was significantly increased only when 100% SSE was applied. The study evidenced that increased doses of SSE affect Al, Fe and N leaf levels. The expressive loss of healthy leaves verified with 100% SSE could be the effect of toxic elements, and this possibility needs to be further examined.

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