

Influence of hydric stress in the production of toxic principles in *Nerium Oleander*

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Abstract

Many plants utilized in the urban center shows substances considered toxic whose production could be influenced by some factors, like hydric stress, including ornamental *Nerium Oleander*, widely used in gardens in various parts of the world, which presents production of cardioative glucosides, considered toxic. This study had the objective to evaluate the effect of field capacity at the level of cardioative glucosides in seedlings of *Nerium Oleander*. The experiment was carried at UNIDERP, in Campo Grande City, Mato Grosso do Sul State, Brazil, at the University for Development of State and of Pantanal Region, using the experimental delineation in randomized blocks. There were 4 treatments (25%; 50%; 75% and 100% of the field capacity), 5 replications and 4 plants by parcel. The evaluations were realized 60 days after the seedlings were planted. The quantitative analysis of the cardioative glucosides was realized by gravimetric test, after selective extraction of the glucosides. Were conclude that increase of the quantity of water in the soil raised the biomass production until 75% of the field capacity and increased the grade of cardioative glucosides, showing that water management is very important and should be provided only the necessary to development of the plant.

Allelopathic effect of *Pinus eldrica* Medw. leaf extract on seed germination and seedling growth of four turfgrass genera

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Abstract

The phenomenon of allelopathy, where plant species chemically interferes with seed germination, and growth or development of other plant species has been known for over 2000 years. The term of allelopathy, is a word, to describe all kinds of reciprocal biochemical interactions (inhibitory as well as stimulatory) among plants. *Pinus eldrica* Medw. is one of the most common trees planted in Iranian parks and urban landscapes. According to the wide use of these trees in urban landscape, experiments were conducted to study the allelopathic effect of *P. eldrica* Medw. leaves on four turfgrass seed germination and seedling growth using the sandwich and extraction methods. In the sandwich method, 5 mL agar (5%) was added to 6 petri-dishes containing 5 g (in dry weight) of *P. eldrica* Medw. fresh leaves. After solidification, 3.2 mL agar (5%) was added to the leaves agar layer. Twenty seeds of each turfgrass genus (*Lolium perenne* L., *Festuca arundinacea* Schreb., *Poa Pratensis* L. and *Agrostis capillaris* L.) was placed on the agar culture medium separately, with five replications per genus used. After 7 days, the seed germination percentage and the length of shoot and root of seeds were measured. In the extraction method, a completely randomized design (CRD) was used with 5 replicates of each turfgrass genus at four concentrations of leaf extracts (25%, 50%, 75% and 100%) along with control. Hundred seeds of each turfgrass in 5 replicates were placed on the filter papers inside the petri-dishes and were irrigated with deferent concentration of *P. eldrica* Medw. leaf extracts. The seed germination percentage and rate, and root length of seedlings in each Petri-dish were measured after 10 days. To prevent increasing



the EC in each petri-dish, the filter papers were replaced with new ones before each irrigation time (except the control treatment which irrigated with deionized water). According to the results, *P. eldrica* Medw. showed an strong allelopathic effect on some turfgrass genera used. The least allelopathic effect was observed on *Lolium* and the highest on *Poa*. It can be concluded that *Lolium* is the best selection for planting as a turfgrass under the *P. eldrica* Medw. trees, as monoculture or in seed mixtures/blends. *Poa* is not recommended under the same condition.

Problems of Green Areas Integration in the Supermarket Parkings

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Abstract

The here about paper proposes the establishment of determinant factors in the designing and realization of the plantations. A series of data have been studied among which: the general plan for traffic and parking areas systematization (reserved area for plantations and their configuration); the technical solutions for infrastructure (concrete areas, paved, asphalted, the thickness of the constructed layer, the depth and the tracking way of the underground systems), the depth and the practical volume for the plantations, the area climate and the microclimate generated by the constructed area. The present study proposes to analyze and to elaborate the criteria for establishing the types of plantations for parking areas (trees rows, hedges, shrub mass plantings), for selection of the varieties and the characteristics of the planting material (root ball or bare root plant material, high, trunk diameter). A case study have been done regarding the behavior of varieties planted in the parking areas of two large commercial centers in North and East of Bucharest, respectively conditions of planting and maintenance (vegetal soil, tutors, irrigation, pruning) have been analyzed; the effect of the physiological stress (growth rhythm, desiccation of the branches, burns of the leaves); pollution effect, mechanical degradation.