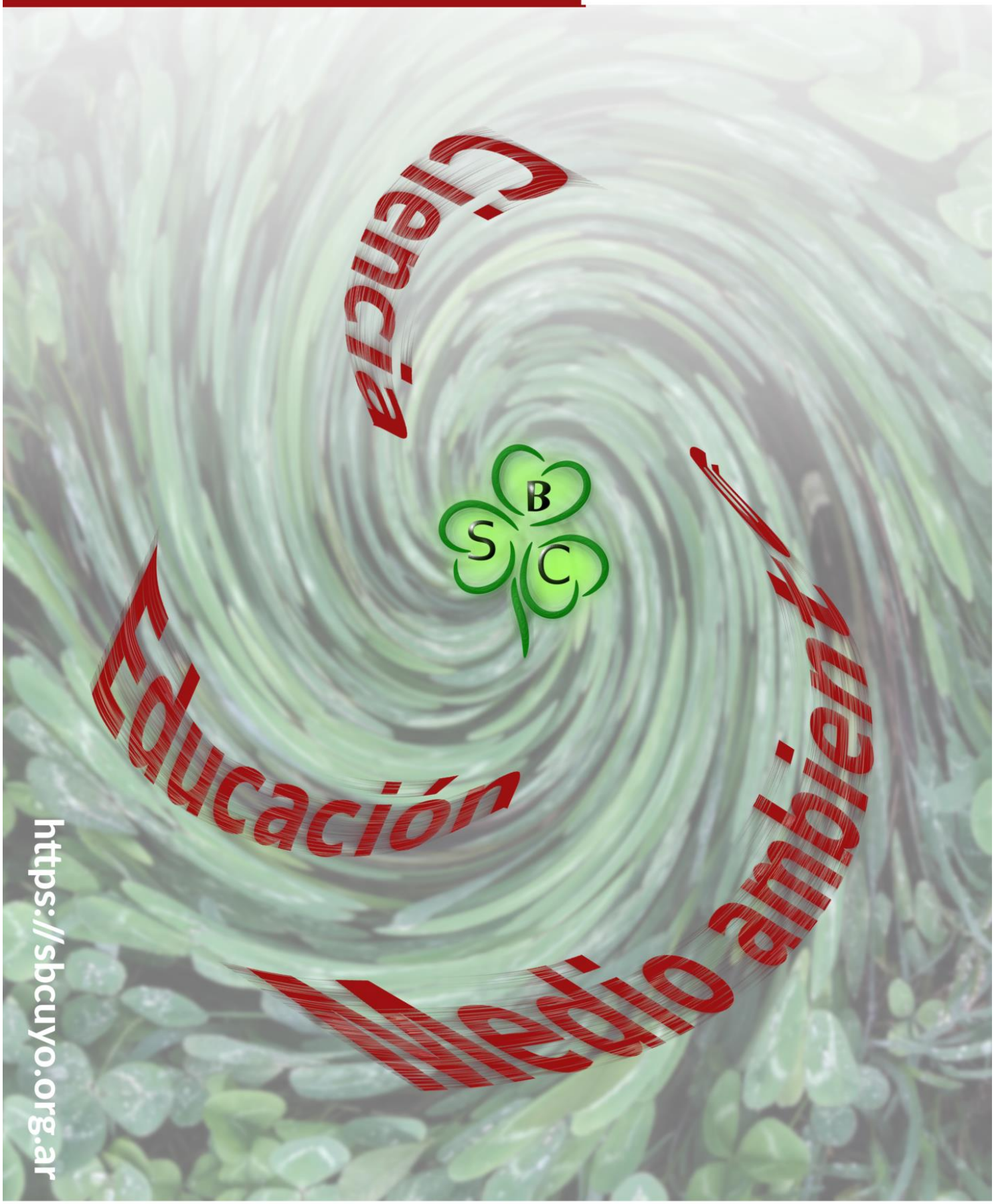
Sociedad de Biología de Cuyo

XXXVII Reunión Científica Anual

5 y 6 dic 2019 - San Luis



Libro de Resúmenes

XXXVII Reunión Científica Anual

Sociedad de Biología de Cuyo

5 y 6 de Diciembre de 2019

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Argentina

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of 600 mM NaCl, being the most salinity tolerant. On the other hand, most of the isolates studied have tolerance to Cd, only three of them have the highest MIC, since they grow at 200 µM of Cl_2Cd.

224. EFFECT OF LONGEVITY ON THE VIABILITY OF SEEDS OF THREE ENDEMIC SPECIES OF THE *GYMNOCALYCIUM* GENDER (CACTACEAE) THROUGH THE TETRAZOLIO CHLORIDE TEST

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The viability is the potential of a seed to germinate from the moment of harvest, and it is useful to know for the conservation of species through the management of seeds. To know this value of viability or life capacity of the seeds, one of the tests used is that of tetrazolium (2, 3, 5, - triphenyl-tetrazolium chloride) which is based on coloring the cotyledon tissues pink in the presence of respiratory enzymes. *Gymnocalycium stellatum* ssp *occultum*, *Gymnocalycium marianae* and *Gymnocalycium oenanthemum* are three species of Cactaceae endemics to the province of Catamarca, Argentina, whose populations are in the category of Threatened or Vulnerable according to IUCN 2010 categorization. The objective of this work was to determine the viability of seeds of these species, collected in different times, with tetrazolium chloride test. The tests were carried out with seeds harvested between 2015 and 2019, separated into three treatments and one control per year. Each treatment involved pre-imbibition, cover extraction, treatment with a solution of 1% tetrazolium chloride, and incubation in Petri dishes for 18 hours in darkness at 29 ° C. After this time, the seeds were rinsed with distilled water and observed in binocular magnifying glass. For the interpretation of the coloration, 3 criteria were used: A = viable seeds, for embryos that were colored 100% deep pink; B = probable viable seeds for those with some uncoloured area, and C = non-viable seeds, for those were not colored. The results showed that for 2016 the viability was 6.66% for *G. occultum* and *G. oenanthemum*, and 0% for *G. marianae*. For the year 2019 the viability was 80% for *G. occultum*, 93.33% for *G. marianae* and 86.66% for *G. oenanthemum*. It is concluded that the viability decreases rapidly in seeds with more than one year of storage after harvest.

225. EFFECT OF HEAVY METALS ON SEED GERMINATION OF *Adesmia subterranea* AND *Adesmia pinnifolia:* IMPLICATIONS FOR PHYTOREMEDIATION

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Phytoremediation is the use of plants to reduce the concentrations or toxic effects of contaminants in the environments and it´s considered an efficient, ecological and low-cost solution to the problem of heavy metal pollution. A great number of members of Fabaceae are well known to have the capacity to accumulate and tolerate heavy metal. Germination and root elongation are two critical stages in plant development that are sensitive to environmental contaminants. The aim was to determine the effect of different concentrations of Cadmium (Cd) and Nickel (Ni) on seed germination, emergence rate index (ERI) and % phytotoxicity (%P) on *A. subterranea* and *A. pinnifolia*. Seeds were treated with three levels of Cd: 500µM; 1000µM and 2000µM and Ni: 100µM; 200µM; 400µM and a control treatment (distilled water). Four replicates (25 seeds) per level of treatment and species were tested in a germination chamber. Agar media was used as germination substrate. The germinated seeds was recorded every 24h for one week. A seed was considered germinated when the emerging radicle was longer than 1 mm. The root length was measured after 10 days. Generalized linear mixed-effects models with a binomial error distribution was used for germination, and ANOVA followed by LSD Fisher for ERI and % phytoxicity. Results showed that the effect of the treatments on germination and ERI depend on the specie (treatments*specie p=0, 0001). The number of germinated seeds was significantly higher in treatments with Ni and control compared with Cd for both species. Cd 2000 µM reduced significantly the germination to 2 seeds for *A. pinnifolia* and 56 seeds for *A.subterranea*. Similar results were observed in the ERI evaluation, treatments with more than 1000µM Cd reduces significantly emergence rate compared to the control in both species. The %P of roots analyzed in all concentrations of Cd in both species was >94%, showing a high toxicity even at low concentrations. Ni showed a low %P at 100µM (41%) for *A. subterranea* and in the other concentrations was higher than 80%. *A. pinnifolia* also showed an increasing trend with increasing Ni concentration but with values above 77%. The results suggest that both Adesmia species could be considered as a potential candidate for phytoremediation. However future studies on later stages of plant growth should be tested to complete the performance.

226. BOTANICAL CHARACTERIZATION AND PHOTOACTIVITY DIFFERENCES BETWEEN *BIDENS SUBALTERNANS* VAR. *SUBALTERNANS* AND *BIDENS SUBALTERNANS* VAR. *SIMULANS* AGAINST SPECIES OF GENUS *CANDIDA*

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The finding of new antimicrobial agents has become the main objective of health sciences. Because of this, search for a new therapeutic alternative for the inactivation of pathogenic microorganisms resistant to traditional chemical agents is imperative. Plants are an important source of chemical diversity providing unlimited opportunities for isolating new compounds or generating photoactive extracts with high antimicrobial potential. Although medicine has contributed to the survival of immunosuppressed patients, high