

conventional fungicide (Rend 2222.8 kg/ha) and control severely affected (Rend 1807.5 kg/ha). In all cases, the yields accompanied the sanitary conditions in which each treatment was developed.

A149

EVALUATION OF PHYTOSANITARIES BASED ON PHOSPHITES FOR THE CONTROL OF ROYA (*PUCCINIA* SP.) IN CENTENO AND TRITICALE IN VILLA MERCEDES - SAN LUIS - ARGENTINA

Cortez-Farias M¹, Andrada N², Ricca A³, Colombino M¹, Micca-Ramirez M²

¹Asignatura Terapéutica Vegetal. ²Asignatura Fitopatología. Facultad de Ingeniería y Ciencias Agropecuarias (FICA)-UNSL. ³INTA. E-mail: cortezmiguel.sl@gmail.com

In the province of San Luis, Argentina, the crops of rye (*Secale cereale*) and triticale (x *Triticosecale* Wittmack) are excellent alternatives for the production of fodder and grain for animal feed and the sale of seed respectively. Its good adaptation to semi-dry conditions and low temperatures means that year after year they are chosen by a large number of producers with different purposes, among which are also the realization of cover crops in lots with erosion risks. These crops are affected epidemically by stem rust (*Puccinia graminis*) and yellow rust (*Puccinia striiformis*), which produce significant losses in forage quality, the incidence of leaf area (IAF), and final grain yield. So far, the most used control methodology is the application in total coverage of fungicidal products, mainly those belonging to the triazoles group and the estrobilurinas group. Currently, new products for disease control are incurring in the market, systemic translocation and phosphoric acid derivatives are called phosphites, which present new modes of action, which can help or replace the use of conventional fungicides. These products exacerbate crop defenses by improving their nutrition because they are formulated with different trace elements and stimulate the production of phytoalexins, important organic substances with which plants resist the attack of pathogens, mainly fungi. The study was carried out in order to observe the effect of Cu²⁺ phosphite and K⁺ phosphite against the attack of Stem rust and Yellow rust, in addition to its effect on the forage of crops during the 2018/2019 campaign. The trial was planted on June 15th in 12m² plots with 3 treatments and a witness, with 3 repetitions for each. The follow-up was weekly by visual observation and data collection, the scale used to measure severity was that of "Peterson, 1948". The application of phytosanitary products was carried out during the macollage stage and in doses according to the label. The results showed for both crops and as regards fodder it refers: very good response to K⁺ phosphite and Cu²⁺ phosphite, regular for conventional fungicide, while the control was severely affected by both Royas.

A150

MULTIVARIATE ANALYSIS OF THE RESPONSE OF COTTON LAVENDER (*SANTOLINA CHAMAECYPARISSUS*) TO LEAD STRESS

Cortez F¹, Bellozas RM¹, Fernandez L, Camiña JM^{1,2}, Moldes CA^{1,2}

¹Facultad de Ciencias Exactas y Naturales-UNLPam ²Instituto de Ciencias de la Tierra y Medio Ambiente de La Pampa (INCITAP)-CONICET. E-mail: moldesc@gmail.com

Cotton lavender is a shrubby aromatic plant with several uses in medical and pesticide issues. The objective of the present work was to determine the physiological response of cotton lavender plants (*Santolina chamaecyparissus*) against lead stress through chemometric tools assessing tolerance for Pb stress. Seedlings were arranged in pots of 1 kg with sand:vermiculite (3:1) as substrate and grown in a greenhouse. Macro and micronutrients were applied with 1 g of Nitrofull fertilizer every 30 days until the end of the experiment. 32 days after the experiment started (AES), plants were watered with PbCl₂ solution until they reached concentrations in substrate 0, 250, 500, 1000, and 2000 ppm of Pb. 25 weeks AES, plant growth parameter was measured with image analysis software. At week 27 AES, samples were collected to determine lipid peroxidation (LP), catalase (CAT), ascorbate peroxidase (APX), and guaiacol peroxidase (GOPX) activity. The data were analyzed by uni and multivariate statistics. Score plot defined two groups in which concentrations up to 1000 ppm of Pb performed one group, and the other grouped 2000 ppm Pb treatment. The loading plot indicated that such difference is due to the influence of LP, CAT, APX, and GOPX, which they increase at 2000 ppm Pb in accordance with univariate statistics. Results indicate that treatments up to 1000 ppm Pb have a slightly-moderate physiological response with respect to the 0 ppm Pb, while at 2000 ppm biomass production is inhibited, and lipid peroxidation and antioxidant enzyme activity increase significantly. In conclusion, the results indicate that cotton lavender has high tolerance in conditions up to 1000 ppm of Pb, presenting effects and responses to oxidative stress at 2000 ppm Pb. Thus, this specie could be potentially useful as a phytoremediator in contaminated areas with Pb.

A151

VALUATION OF THE GRAIN YIELD OF UNPUBLISHED AND COMMERCIAL GERmplasm OF *TRITICUM AESTIVUM* IN THE EEA- SAN LUIS – INTA

Escudero E^{1,3}, Montañez D^{2,4}, Ferroni L^{1,2}, Olmedo L^{1,3}, Tavecchio N^{1,3}, Terenti, O^{1,2,3}

1-Laboratorio Fisiología Vegetal-FICA-UNSL. 2-Laboratorio de Semillas-EEA-INTA. 3-PROICO: 14-0916. 4. AminoNutric S.A E-mail: terenti.oscar@inta.gob.ar