

0221 - TAILINGS WITH MANGANESO AND ITS POTENTIAL IN THE PRODUCTION OF SEEDBED

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In Mexico, mining generates 65 % of industrial waste. The agricultural use of these is most appropriate as a potential source of nutrients considered essentials for plants. The objective of this study was to determine the effect of the use of tailings waste from the Autlán mine as substrate in the production of tomato and pepper seedlings under greenhouse conditions. The experiment was divided into three phases, the first was related to microbiological and heavy metal content according to NOM-004-SEMARNAT (2002). Germination tests were carried out for pepper seeds var. Capistrano and tomato var. Rio Grande, the seeds of both crops were soaked in the residue for 4, 8 and 12 hrs, and placed on germination paper and incubated at 28° C. Quantification of the number of normal plantlets (PN), abnormal (PA) and non-germinated seeds (SSG) was made at the 7th and the 14th days after planting. A check was used as a control where no seed treatment was applied. A randomized complete block design was used. For greenhouse testing, seeds of both species were planted in trays with a mixture of peat moss + perlite (3:1) and tailings in different percentages (5, 10, 25 and 50%). A mixture with no waste material was added as a check (0%). The seedlings were irrigated with water. A completely randomized design was used. Data was analyzed in SAS software version 9.0. The analysis indicated that the tailings belong to type B, and can be used for forestry and agricultural soils, there were no pathogens. In the tomato seed germination test, seeds soaked for 12 and 8 hrs, promoted greater number of normal plantlets (20.75 and 19.25**) and radicle length (9.50cm**). The plants soaked for 4 hours, had the highest number of abnormal plants (5.25**); in pepper, soaking for 12 hours favored the development of the root (5.75cm**) and to 4 hrs treatment the PF (0.68 g**). Seedling production in tomato was promoted with a mixture containing 5% tailings and increased stem diameter (0.135mm**), stem length (7.92cm**), LR (7.95cm**), PF (0.327g**) and PS (0.0762g**), also favored the stem diameter (0.113mm**) stem length (5.38cm**) and radicle length (6.98cm**) PF (0.236g**) and PS (0.051**) in pepper. The treatment with 50% of tailings, decreased the number of seedlings.