Program	**Program NUCLEU PN 16 25 03 08**
Project title (ENG):	**The application of the experimental phytoremediation model of the energy crops on polluted or degraded natural lands**
Project title (RO):	**Aplicarea modelului experimental de fitoremediere cu plante energetice pe terenuri poluate sau degradate natural**
Duration	2016-2017
Team Leader	Senior Researcher Eng. Valeria Nicorescu
Summary (short description) ENG	We established the conditions for recovery of degraded natural or polluted lands (ash and slag deposit) ,by applying of experimental model for phytoremediation of the energy plants, Salix sp. while crop monitoring to track how energy plants development and hers adaptation to the hostile conditions of the pitch. The vegetation process was evaluated by tracking the energy plant cultures by determining the storage capacity of the metals in the biomass, the correlations between the diameter and the height of the plants, the chemical composition of the ash obtained from the burning of the biomass. The amount of harvested biomass of 52t / ha green tissue reveals a good development and woody production of the plantation developed on the surface of an ash and slag deposit. Lower calorific power determined for biomass of *Salix sp.* (unpeeled) harvested from the ash deposit is 19,05 MJ / kg. The project includes new directions for recovery of the sludge from municipal sewage treatment plants and manure from livestock farming and fattening pigs. Based on the experimental data obtained, a technology is proposed for the ecological closure of an ash and slag deposit using energy plants (*Salix sp*. and *Miscanthus*)
Summary (short description) RO	S-au stabilit condițiile de valorificare a terenurilor degradate natural sau poluate (depozit de cenusa si zgura) prin aplicarea modelului experimental de fitoremediere cu plante energetice, Salix sp. prin monitorizarea în timp a culturilor pentru a urmări modul de dezvoltare și adaptare a plantelor energetice la condițiile ostile din teren. Procesul de vegetare a fost evaluat prin urmarirea culturilor de plante energetice prin determinarea capacitatii de acumulare a metalelor in biomasa lemnoasa, corelatii intre diametrul si inaltimea plantelor, compozitia chimica a cenusii obtinute din arderea biomasei lemnoase. Cantitatea de biomasa recoltata de 52t/ ha masa verde releva o dezvoltare si o productie lemnoasa buna a plantatiei dezvoltate pe suprafata unui depozit de cenusa si zgura. Puterea calorifica inferioara determinata pentru biomasa de *Salix sp.* (nepeletizata) recoltata de pe depozitul de cenusa este de 19,05 MJ/kg. Proiectul include direcții noi de valorificare a nămolurilor rezultate din stațiile de epurare orășenești și a dejecțiilor provenite din fermele de creștere și îngrășare suine. *In baza datelor experimentale obtinute s-a propus o tehnologie pentru inchiderea ecologica a unui depozit de cenusa si zgura utilizand plante energetice (Salix sp. si Miscanthus).*
Dissemination of results	
Conferences (platform, poster, abstract / full-paper	***Valeria Nicorescu, Smaranda Mâşu, Ladislau Andres, Pascu Luoana Florentina,*** Ilie Vlaicu, Cristian Bozan, Wilhelm Hollerbach, Ion-Danut Trava, *Strategies of closing ecological deposits of ash and slag use energetic plants*, 20th International Symposium "The Environment and the Industry", Bucharest, Romania, September 28-

	29, 2017, Book of Abstracts, p. 94
Full-paper ISI	***Valeria Nicorescu, Smaranda Mâşu, Ladislau Andres, Pascu Luoana Florentina,*** Ilie Vlaicu, Cristian Bozan, Wilhelm Hollerbach, Ion-Danut Trava, *Strategy for Ecologically Closure of Ash and Slag Deposits Using Energetic Crops, REV.CHIM.(Bucharest), 69, No. 1, 2018, p. 45-49*