

Program	Program NUCLEU PN 09-13 01 02
Project title (ENG):	Developing a complex methodology of ecotoxicological characterization of some commercial detergents, in accordance with European Regulation EC648 / 2004 and subsequent amendments
Project title (RO):	Dezvoltarea unei metodologii complexe de caracterizare ecotoxicologica a unor detergenti comerciali, in conformitate cu prevederile Regulamentului European EC648/2004 si amendamentele ulterioare
Duration	2009-2013
Team Leader	Stefania Gheorghe
Summary (short description) ENG	The new European legislation on detergents initiated a comprehensive test strategy, for the surfactants biodegradability assessment, depending on the use of detergents (for consumers or industrial and institutional use). For the implementation of 648/2004 (EC) Regulation and considering the reduced number of test / evaluation methodologies that can be performed currently at national level, the project initiated the development of a complex methodology of ecotoxicological assessment of commercial detergents (especially for products that contain cationic and amphoteric surfactants), in accordance with European Regulation EC648 / 2004 and subsequent amendments. Ecotoxicological assessment was conducted through laboratory researches and implementation of recommended methods in Annexes III and IV of the European Regulation for the biodegradability of surfactants and final risk assessment generated on the aquatic environment. Moreover, it has followed the development / implementation in the laboratory of modern and advanced analytical techniques (chromatographic methods) to determine selective cationic and amphoteric surfactants in aqueous solutions.
Summary (short description) RO	Prin noua legislatie europeana privind detergentii s-a initiat o strategie complexa de testare, pentru evaluarea biodegradabilitatii agentilor de suprafata, functie de modul de utilizare al detergentilor (pentru consumatori sau pentru uz industrial si institutional). Pentru implementarea Regulamentului (EC) 648/2004 si tinand cont de numarul redus de metode de testare / metodologii de evaluare care pot fi efectuate in prezent la nivel national, proiectul a initiat dezvoltarea unei metodologii complexe de evaluare ecotoxicologica a detergentilor comerciali (in special pentru produsele care au in compozitie surfactanti cationici si amfoterici), in conformitate cu prevederile Regulamentului European EC648/2004 si amendamentele ulterioare. Evaluarea ecotoxicologica s-a realizat prin experimentarea si implementarea in laborator a metodelor recomandate in Anexele III si IV ale Regulamentului European pentru determinarea biodegradabilitatii finale a agentilor de suprafata si evaluarea riscului generat asupra componentei acvatice a mediului. De asemenea, s-a urmarit dezvoltarea/implementarea in laborator a unor tehnici analitice moderne si performante (metode cromatografice) de determinare selectiva a surfactantilor cationici si amfoterici din solutii apoase.
Dissemination of results	
PhD Thesis – Title RO, ENG	Determinarea ecotoxicitatii agentilor de suprafata cationici si amfoterici si evaluarea riscului generat asupra mediului acvatic, Stefania Gheorghe, 2012
	Ecotoxicity determination of cationic and amphoteric surfactants and environmental risk assessment

Full-paper ISI	Stefania Gheorghe, Irina Lucaciu, Rozalia Grumaz, Detergents legislative framework and ecotoxicological testing methodology, <i>Journal of Environmental Protection and Ecology</i> , book 3A, vol.12 (2011), 1525-1532, ISSN 1311-5065.
	Gheorghe Stefania, Lucaciu Irina, Pascu Luoana, Biodegradability assessment of cationic and amphoteric raw material, <i>Journal of Environmental Protection and Ecology</i> , vol.13, no.1 (2012), 155-164, ISSN 1311-5065
	Gheorghe Stefania, Irina Lucaciu, Grumaz Rozalia, Stoica Catalina, Acute toxicity assessment of several cationic and amphoteric surfactants on aquatic organisms, <i>Journal of Environmental Protection and Ecology</i> , no. vol.13, no.2 (2012), 541-553., ISSN 1311-5065.
Book, book chapters	Gheorghe S., Lucaciu I., Paun I., Chapter 4, <i>Ecotoxicological behavior of some cationic and amphoteric surfactants (biodegradation, toxicity and risk assessment)</i> , Book "Biodegradation – Life Science", edited by Dr. Rolando Chamy and Francisca Rosenkranz, p. 83 -114 (2013), ISBN 978-953-51-1154-2.
Conferences (platform, poster, abstract / full-paper	Gheorghe S., Lucaciu I., R. Grumaz, <i>Detergents legislative framework and ecotoxicological testing methodology</i> , Conferinta Internationala UAB-BENA "Management and Sustainable Protection of Environment" Alba Iulia, POSTER, 2009
	Gheorghe S., Lucaciu I., Pascu L. <i>Removal of surfactants from household cleaning products and/or cosmetic detergents during the ready biodegradability tests performed in conformity with the new European regulations</i> , SIMI 2009 – International Symposium „The Environment and Industry” PREZENTARE ORALA, 2009.
	Gheorghe S., Lucaciu I., Pascu L., <i>Ultimate biodegradability assessment of cationic and amphoteric surfactants</i> , International Conference on fishery and aquaculture - a view point upon the sustainable management of the water resources in the Balkan area, Galati, Romania PREZENTARE ORALA, 2010.
	GheorgheS., I. Lucaciu, Grumaz R., Stoica C., <i>Assessment of cationic and amphoteric surfactants acute toxicity on several aquatic organisms</i> , WORKSHOP International B.EN.A. "GLOREP 2010", Timisoara, PREZENTARE ORALA.
	Gheorghe S., I. Lucaciu, A.Dinischiotu, Stoica C., Paun I., <i>Aquatic safety assessment for cationic and amphoteric surfactants</i> , SIMI 2011 – International Symposium „The Environment and Industry”, 2011.
	Damache G., Gheorghe S., Dinischiotu A., <i>The toxicity impact of amphoteric surfactant cocamidopropyl betaine over induction of oxidative stress in Cyprinus carpio</i> , Annual Zoological Congress of „Grigore Antipa” Museum, noiembrie 2012, Bucuresti, PREZENTARE ORALA.
	I. Paun, Iancu V.I., J.Petre, I. Lucaciu, <i>Monitoring of surfactants concentration in aquatic environment using different analytical methods</i> , SIMI 2013 – International Symposium „The Environment and Industry” POSTER.
	Gheorghe Ș., Damache G., Lucaciu I., Stoica C., Stănescu E., Dinischiotu A., <i>Effects of Cocamidopropil betaine on Oxidative stress biomarkers of the Cyprinus carpio sp</i> , 3 rd SETAC CEE Annual Meeting, September 2012, Cracovia, Polonia, PREZENTARE ORALA, Ecotoxicology revisited Proceedings, p.33-35, ISBN 978-83-935990-0-4.

Conferences (platform, poster, abstract / full-paper	Gheorghe S., I. Lucaciu, Pascu L., Removal of surfactants from household cleaning products and/or cosmetic detergents during the ready biodegradability tests performed in conformity with the new European regulation, Volum lucrari extenso- SIMI 2009 „The Environment and Industry”, Estfalia, Bucuresti, p. 332-342, ISSN 1843-5831, ISBN 978-973-7681-65-2.
	Gheorghe S., I.Lucaciu, G.Rozalia, Stoica C., <i>Assessment of cationic and amphoteric surfactants acute toxicity on several aquatic organisms</i> , Volum lucrari extenso- Workshop B.EN.A. “GLOREP 2010”, volume II, p. 70-73, ISBN: 978-606-554-210-5; ISBN 978-606-554-212-9.
	Gheorghe S., I. Lucaciu, A. Dinischiotu, Stoica C., Paun I., <i>Aquatic safety assessment for cationic and amphoteric surfactants</i> , Volum lucrari extenso- SIMI 2011 „The Environment and Industry”, Estfalia, Bucuresti, Volume II, p. 232-246, ISSN 1843-5831, ISBN 978-973-7681-65-2.
	Gheorghe S., I.Lucaciu, Grumaz R., Stoica C., Efectele poluarii antropice cu surfactanti (cationici si amfoterici) asupra organismelor acvatice, On-line NEWSLETTER al Proiectului POSDRU/79/1.4/S/53587www.unimed.ro, 2011.
	Marius C., S. Ivan(Gheorghe), Dinischiotu A., Staicu C., <i>Histological changes induced by Hyamine 1622 acute intoxication in Cyprinus carpio (Actinopterygii: Cyprinidae)</i> , Medialux, Bucuresti, ISBN 978-606-92462-7-6, 2012.
	GheorgheS., Paun I., Lucaciu I, Evaluarea performata a efectelor surfactantilor emergenti, On-line NEWSLETTER al Proiectului POSDRU/79/1.4/S/53587 www.unimed.ro, 2013.