

SPAIN SUBMISSION FOR ANNEX 1 IN LEAD REVIEW

Additional lines to be added:

ID	Country	Soil type	Description (from reference)	In this study categorised as	mg Pb/kg				Reference
					min	max	mean	median	
	Spain	Agricultural topsoil	A large study on heavy metal content in agricultural soils in the entire Spanish peninsula took place between 2001 and 2003. A regular sampling grid was established and one plot was selected from each 64 sq. km of arable land area as well as from each 128 sq. km of grassland area. A total of 2,932 samples were taken and their heavy metals content was determined by extraction using <i>acqua regia</i> digestion. In the total sampling population of peninsular Spanish soils, 99 per cent of samples have less than 100 mg/kg of lead; 95 per cent have less than 42 mg/kg and 50 per cent have less than 16 mg/kg. The lead content is significantly correlated to organic matter and clay content (mean values, 2.53 and 21.77 percent, respectively). No significant relation is found with pH, probably because that correlation is linked to low soil pHs (even below 5), uncommon in Spain (mean pH value 7.47, median pH value 8.10).		-	-	21.294	16.000-	LÓPEZ-ARIAS, M. & GRAU-CORBÍ, J.M. 2004
	Spain	Topsoils	535 samples belong to the 'grassland' category.	Grassland topsoil	-	-	25.806	21.000	LÓPEZ-ARIAS, M. & GRAU-CORBÍ, J.M. 2004
	Spain	Topsoils	2,397 samples belong to the 'arable land' category.	Arable land topsoil	-	-	20.287	16.000	LÓPEZ-ARIAS, M. & GRAU-CORBÍ, J.M. 2004

Reference: LÓPEZ-ARIAS, M. & GRAU-CORBÍ, J.M. 2004. *Metales pesados, materia orgánica y otros parámetros de la capa superficial de los suelos agrícolas y de pastos de la España peninsular* [Heavy Metal Concentration, Organic Matter Content and other Parameters in Agricultural and Grassland Spanish Soils]. Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria. Ministerio de Educación y Ciencia. Madrid (Spain).

SPAIN SUBMISSION FOR ANNEX 1 IN CADMIUM REVIEW

Additional lines to be added:

ID	Country	Soil type	Description (from reference)	In this study categorised as	mg Cd/kg				Reference
					min	Max	mean	median	
	Spain	Topsoils	A large study on heavy metal content in agricultural soils in the entire Spanish peninsula took place between 2001 and 2003. A regular sampling grid was established and one plot was selected from each 64 sq. km of arable land area as well as from each 128 sq. km of grassland area. A total of 2,932 samples were taken and their heavy metals content was determined by extraction using <i>acqua regia</i> digestion. The mean concentration of cadmium in the topsoil in the Spanish peninsula is 0.21 mg/kg. 50 per cent of the cases have a concentration below 0.10 mg/kg while 99 per cent have it below 1 mg/kg. PH, organic matter and carbonate content are positively correlated with cadmium content. Mean organic matter content is 2.53 percent. Levels and variability (related to the spatial distribution of samples) are higher in arable lands than in grasslands.	Agricultural topsoil	-	-	0.214	0.100	LÓPEZ-ARIAS, M. & GRAU-CORBÍ, J.M. 2004
	Spain	Topsoils	535 samples belong to the 'grassland' category.	Grassland topsoil	-	-	0.194	0.100	LÓPEZ-ARIAS, M. & GRAU-CORBÍ, J.M. 2004
	Spain	Topsoils	2,397 samples belong to the 'arable land' category.	Arable land topsoil	-	-	0.218	0.110	LÓPEZ-ARIAS, M. & GRAU-CORBÍ, J.M. 2004
	Spain	Topsoils	131 samples have pH ≤ 5.	PH class 1*	-	-	0.11	0.05	LÓPEZ-ARIAS, M. & GRAU-CORBÍ, J.M. 2004
	Spain	Topsoils	472 samples have 5 < pH ≤ 6.	PH class 2*	-	-	0.12	0.05	LÓPEZ-ARIAS, M. & GRAU-CORBÍ, J.M. 2004
	Spain	Topsoils	221 samples have 6 < pH ≤ 7.	PH class 3*	-	-	0.13	0.10	LÓPEZ-ARIAS, M. & GRAU-CORBÍ, J.M. 2004
	Spain	Topsoils	2,089 samples have pH > 7.	PH class 4*	-	-	0.25	0.20	LÓPEZ-ARIAS, M. & GRAU-CORBÍ, J.M. 2004

* According to Directive 86/278/EEC.

Reference: LÓPEZ-ARIAS, M. & GRAU-CORBÍ, J.M. 2004. *Metales pesados, materia orgánica y otros parámetros de la capa superficial de los suelos agrícolas y de pastos de la España peninsular* [Heavy Metal Concentration, Organic Matter Content and other Parameters in Agricultural and Grassland Spanish Soils]. Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria. Ministerio de Educación y Ciencia. Madrid (Spain).

SPAIN SUBMISSION

Interim review of scientific information on lead. Appendix.

Table - Overview of existing and future national actions, including legislation, relevant to lead.

COUNTRY	SUB-MISSION	STANDARDS FOR ENVIRONMENTAL MEDIA maximum acceptable lead concentration for different media	ACTIONS AND REGULATIONS THAT CONTROL RELEASES FROM ENVIRONMENTAL SOURCES that contain lead	ACTIONS AND REGULATIONS ON PRODUCTS that contain lead	OTHER STANDARDS, ACTIONS AND PROGRAMMES relevant to lead
Spain		<p>Air Annual limit value for the protection of human health: 0,5 µg/m³; with a tolerance of 0,3 µg/m³ until 01/01/2005 and of 0,5 µg/m³ nearby specific sources until 01/01/2010.</p> <p>Water <u>Surface water:</u> Mean annual limit value: 50 µg/l. <u>Drinking water:</u> 01/01/2004 - 31/12/2013, limit value: 25 µg/l. From 01/01/2014 onwards, limit value: 10 µg/l. <u>Irrigation water:</u> Some regions have established their own limits. E.g. In Andalusia the limit value of lead in urban treated wastewaters used for agricultural irrigation is 0.5 mg/l.</p> <p>Soil <u>Agricultural soil:</u> PH < 7: 50 mg/kg dry weight PH > 7: 300 mg/kg dry weight Maximum annual input to soil: 15.00 kg/ha/year</p> <p>Foodstuff and feed</p>	<p>According to the Integrated Pollution Prevention and Control (IPPC) Directive, Installations for the smelting, including the alloyage, of non-ferrous metals, including recovered products, (refining, foundry casting, etc.) with a melting capacity exceeding 4 tonnes per day for lead and cadmium need a permit for operating. They also need to undergo an Environmental Impact Assessment.</p> <p><u>Sewage sludge for agricultural purposes</u> (Royal Decree 1310/90, regulating the use of sewage sludge in agriculture, which also establishes maximum concentrations in agricultural soils). PH < 7: 750 mg/kg dry weight PH > 7: 1,200 mg/kg dry weight</p> <p>Use of <u>ammunition</u> containing lead is forbidden in protected wetlands (i.e. under the Ramsar Convention and national/regional regulations) since 1st October 2001.</p>	<p><u>Leaded gasoline</u> is forbidden since 01/08/2001.</p> <p><u>Pottery for food purposes</u> (Directive 84/500/EEC and Royal Decree 891/2006) Limit value between 0.8 mg/dm² and 1.5 mg/l, depending on the size and purpose of the container.</p> <p><u>Batteries and accumulators.</u> Limit value: 0.4 % lead by weight.</p> <p><u>Electronic Equipment</u> (Royal Decree 2008/2005). Limit value: less than 0.1% lead by weight.</p> <p><u>End-of-life vehicles</u> (Directive 2000/53/EC and Royal Decree 1383/2002). The use of lead in vehicle components and materials is forbidden from 01 July 2006 onwards, with the following exceptions: - Aluminium for machining containing up to 1% lead by weight. - Copper alloy containing up to 4% lead by weight. . Lead/bronze bearing-shells and bushes.</p> <p><u>Fertilizers from organic origin.</u> (Order 28 May 1998 on fertilizers and related substances) Lead content: less than 150 mg/kg dry weight.</p>	<p><u>Occupational health</u> (Royal Decree 374/2001). Environmental limit value for daily exposure to lead: 0,15 mg/m³ (i.e. air at 20° C and 101,3 KPa). Limit value of lead in blood: 70 µg Pb/100 ml of blood.</p>

COUNTRY	SUB-MISSION	STANDARDS FOR ENVIRONMENTAL MEDIA maximum acceptable lead concentration for different media	ACTIONS AND REGULATIONS THAT CONTROL RELEASES FROM ENVIRONMENTAL SOURCES that contain lead	ACTIONS AND REGULATIONS ON PRODUCTS that contain lead	OTHER STANDARDS, ACTIONS AND PROGRAMMES relevant to lead
		<p><u>Maximum content (in mg/kg wet weight) of lead in foodstuff</u></p> <p>Established by Regulation (EC) 446/2001 and Royal Decree 256/2003</p> <p>Cows' milk: 0.02</p> <p>Infant formulae and follow-on formulae: 0.02</p> <p>Meat of bovine animals, sheep, pig and poultry: 0.1</p> <p>Edible offal of cattle, sheep, pig and poultry: 0.5</p> <p>Muscle meat of fish excluding fish species listed below: 0.2</p> <p>Muscle meat of wedge sole (<i>Dicologlossa cuneata</i>), eel (<i>Anguilla anguilla</i>), spotted seabass (<i>Dicentrarchus punctatus</i>), horse mackerel or scad (<i>Trachurus trachurus</i>), grey mullet (<i>Mugil labrosus labrosus</i>), common two-banded seabream (<i>Diplodus vulgaris</i>), grunt (<i>Pomadasys benneti</i>), European plichard or sardine (<i>Sardina pilchardus</i>): 0.4</p> <p>Crustaceans, excluding brown meat of crab: 0.5</p> <p>Bivalve molluscs: 1.0</p> <p>Cephalopods (without viscera): 1.0</p> <p>Cereals (including buckwheat), legumes and pulses: 0.2</p> <p>Vegetables excluding brassica, leafy vegetables, fresh herbs and all fungi. For potatoes the maximum level applies to peeled potatoes: 0.1</p> <p>Brassica, leafy vegetables and all cultivated fungi: 0.3</p>		<p><u>Packaging</u> (Directive 94/62/EC and Royal Decree 782/1998)</p> <p>The sum of concentration levels of lead, cadmium, mercury and hexavalent chromium present in packaging or packaging components shall not exceed 100 ppm by weight as from 1 July 2001.</p> <p><u>Plastic materials and articles intended to come into contact with food</u> (Corrigendum to Directive 2002/72/EC and Royal Decree 442/2001)</p> <p>Lead is not allowed in their composition except in the case of copolymers of 3-Hydroxybutanoic acid-3-hydroxypentanoic acid, which must not have more than 2 mg of lead per kg (as an impurity).</p> <p><u>Toys</u> (Directive 88/378/EEC and Royal Decree 880/1990)</p> <p>Bioavailability resulting from the use of toys must not, as an objective, exceed 0,7 µg of lead per day (bioavailability of these substances means the soluble extract having toxicological significance).</p>	

COUNTRY	SUB-MISSION	STANDARDS FOR ENVIRONMENTAL MEDIA maximum acceptable lead concentration for different media	ACTIONS AND REGULATIONS THAT CONTROL RELEASES FROM ENVIRONMENTAL SOURCES that contain lead	ACTIONS AND REGULATIONS ON PRODUCTS that contain lead	OTHER STANDARDS, ACTIONS AND PROGRAMMES relevant to lead
		Fruit excluding berries and small fruits: 0.1 Berries and small fruits: 0.2 Fats and oils, including milk fat : 0.1 Fruit juices, concentrated fruit juices (for direct consumption) and fruit nectars: 0.05 Wines(including sparkling wines and excluding liqueur wines), aromatised wines, aromatised wine-based drinks and aromatised wine-product cocktails and ciders, perry and fruit wines. Maximum level applies to products produced from the 2001 fruit harvest onwards: 0.2			

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Interim review of scientific information on cadmium. Appendix.

Table - Overview of existing and future national actions, including legislation, relevant to cadmium.

COUNTRY	SUB-MISSION	STANDARDS FOR ENVIRONMENTAL MEDIA maximum acceptable cadmium concentration for different media	ACTIONS AND REGULATIONS THAT CONTROL RELEASES FROM ENVIRONMENTAL SOURCES that contain cadmium	ACTIONS AND REGULATIONS ON PRODUCTS that contain cadmium	OTHER STANDARDS, ACTIONS AND PROGRAMMES relevant to cadmium
Spain		<p>Air (EU Directive 2004/107/EC) Target value (for the total content in the PM₁₀ fraction averaged over a calendar year): 5 ng/m³.</p> <p>Water <u>Surface water</u>: Directive 83/513/EEC (applied in Spain by the Order of 12th of November 1987 of the Ministry of Public Works and Urban Planning) 5 mg/l <u>Drinking water</u> (Royal Decree 140/2003) 5.0 µg/l <u>Irrigation water</u> Some regions have established their own limits. E.g. In Andalusia the limit value of cadmium in urban treated wastewater used for agricultural irrigation is 0.05 mg/l.</p> <p>Soil <u>Agricultural soil</u>: PH < 7: 1 mg/kg dry weight PH > 7: 3 mg/kg dry weight Maximum annual input to soil: 0.15 kg/ha/year</p> <p>Foodstuff (Regulation (EC) 446/2001 and Royal Decree 256/2003)</p>	<p>According to the Integrated Pollution Prevention and Control (IPPC) Directive, Installations for the smelting, including the alloyage, of non-ferrous metals, including recovered products, (refining, foundry casting, etc.) with a melting capacity exceeding 4 tonnes per day for lead and cadmium need a permit for operating. They also need to undergo an Environmental Impact Assessment.</p> <p><u>Sewage sludge for agricultural purposes</u> (Royal Decree 1310/90, regulating the use of sewage sludge in agriculture, which also establishes maximum concentrations in agricultural soils). PH < 7: 20 mg/kg dry weight PH > 7: 40 mg/kg dry weight</p> <p><u>Treated wastewater</u> Directive 83/513/EEC (applied in Spain by the Order of 12th of November 1987 of the Ministry of Public Works and Urban Planning) specifies the limit values and quality objectives for cadmium discharges from different industries. Additionally, if a concentration higher than 1 mg/l is detected through monitoring, relevant authorities (both Spanish and European) should be informed.</p>	<p><u>Pottery for food purposes</u> (Directive 84/500/EEC and Royal Decree 891/2006) Limit value between 0.07 mg/dm² and 0.3 mg/l, depending on the size and purpose of the container.</p> <p><u>Batteries and accumulators</u>. Limit value: 0.025% cadmium by weight. Directive 2006/66/EC sets a limit value of 0.002% cadmium by weight (To be transposed to the Spanish legislation).</p> <p><u>Electronic Equipment</u> (Royal Decree 2008/2005). Limit value: up to 0.01% cadmium by weight</p> <p><u>End-of-life vehicles</u> (Directive 2000/53/EC and Royal Decree 1383/2002). The use of cadmium in vehicle components and materials is forbidden from 01 July 2006 onwards.</p> <p>Fertilizers <u>Phosphate fertilizers</u>. (Directives 76/116/EEC and 89/284/EEC) Maximum cadmium content: 90 mg per P₂O₅ Kg. <u>Fertilizers from organic origin</u>. (Order 28 may 1998 on fertilizers and related substances). Maximum cadmium content: 3 mg/kg dry weight.</p>	

COUNTRY	SUB-MISSION	STANDARDS FOR ENVIRONMENTAL MEDIA maximum acceptable cadmium concentration for different media	ACTIONS AND REGULATIONS THAT CONTROL RELEASES FROM ENVIRONMENTAL SOURCES that contain cadmium	ACTIONS AND REGULATIONS ON PRODUCTS that contain cadmium	OTHER STANDARDS, ACTIONS AND PROGRAMMES relevant to cadmium
		<p><u>maximum content (in mg/kg wet weight) of cadmium in foodstuff</u></p> <p>Meat of bovine animals, sheep, pig and poultry, excluding offal: 0.05 Horsemeat: 0.2 Liver of cattle, sheep, pig and poultry: 0.5 Kidney of cattle, sheep, pig and poultry: 1.0 Muscle meat of fish excluding fish species listed below: 0.05 Muscle meat of wedge sole (<i>Dicologlossa cuneata</i>), eel (<i>Anguilla anguilla</i>), European anchovy (<i>Engraulis encrasicolus</i>), louvar or luvar (<i>Luvarus imperialis</i>), horse mackerel or scad (<i>Trachurus trachurus</i>), grey mullet (<i>Mugil labrosus labrosus</i>), common two-banded seabream (<i>Diplodus vulgaris</i>), European pilchard or sardine (<i>Sardina pilchardus</i>): 0.1 Crustaceans, excluding brown meat of crab: 0.5 Bivalve molluscs: 1.0 Cephalopods (without viscera): 1.0 Cereals, excluding bran, germ, wheat grain and rice: 0.1 Bran, germ, wheat grain and rice: 0.2 Soybeans: 0.2 Vegetables and fruits excluding leafy vegetables, fresh herbs, all fungi, stem vegetables, root vegetables and potatoes: 0.05 Leafy vegetables, fresh herbs, celeriac and all cultivated fungi: 0.2 Stem vegetables, root vegetables and potatoes, excluding celeriac: 0.1</p>		<p><u>Packaging</u> (Directive 94/62/EC and Royal Decree 782/1998). The sum of concentration levels of lead, cadmium, mercury and hexavalent chromium present in packaging or packaging components shall not exceed 100 ppm by weight as from 1 July 2001.</p> <p><u>Toys</u> (Directive 88/378/EEC and Royal Decree 880/1990) Bioavailability resulting from the use of toys must not, as an objective, exceed 0,6 µg of cadmium per day (bioavailability of these substances means the soluble extract having toxicological significance).</p> <p>Royal Decree 1406/1989, on restrictions on the marketing and use of certain dangerous substances and preparations, bans cadmium for a large number of <u>industrial uses</u> according to Directive 76/769/EEC.</p> <p><u>Plastic materials and articles intended to come into contact with food</u> (Corrigendum to Directive 2002/72/EC and Royal Decree 442/2001) Cadmium is not allowed in their composition.</p>	

