

Common ragweed (*Ambrosia artemisiifolia* L.) seeds in bird food in Luxembourg in 2007 and 2012

Christian Ries, Department of Ecology, National Museum of Natural History, Luxembourg. cries@mnhn.lu
 Yan Steil, Department of Ecology, National Museum of Natural History, Luxembourg. yan.steil@mnhn.lu
 Patrick Thommes, Parc naturel de la Haute-Sûre, Luxembourg. patrick.thommes@naturpark-sure.lu

The common ragweed, *Ambrosia artemisiifolia* L. [Fig. 1] (De.: Beifuß-blättriges Traubenkraut; Fr.: Ambrosie à feuilles d'armoise), is an invasive alien species in several European countries. Its wind-dispersed pollen is a strong allergen to many people with hay fever. At present *Ambrosia artemisiifolia* does not occur in the wild in Luxembourg.

A EU commission regulation amended in 2011 an annex to the directive 2002/32/EC, recognizing the danger of *Ambrosia* spp. pollen for public health and the role of bird food in the dispersal of ragweed species (Publications Office 2011: 7). It establishes "... a maximum level of *Ambrosia* spp. seeds in unground grains and seeds as low as reasonably achievable (ALARA) by good agricultural practices and cleaning techniques" (Ibid.: 7-8). It sets a limit value of 50 mg/kg at 12% moisture (Ibid.: 18).

Conducted at the department of ecology in the National Museum of Natural History in Luxembourg, this study looks at the situation in Luxembourg in 2012 and compares the results with an earlier study by Thommes (2008, 2009) conducted in 2007.

On September 11th 2012, 33 bird food brands of several types available on the market in Luxembourg were bought and analyzed: sunflower seeds (11), hemp seeds (2), mixtures (12) and fat balls (8).

The calculated number of ragweed seeds was compared with results from an earlier study in 2007 (Thommes 2008). In addition, the weight has been determined in order to verify compliance with the limit value.

Hemp seed samples contained no ragweed seeds. Compared to the results of the Thommes study (2008) the other bird food types clearly had less samples containing ragweed seeds [Fig. 2] with less seeds per kg of bird food [Fig. 3].

The limit was exceeded by two outliers: a sunflower sample contained 749 seeds / kg, 4813.8 mg / kg (>96 times the limit value), while it's packing was labeled "*Ambrosia* controlled"; a fat balls sample contained 11 seeds / kg, 77 mg / kg (>1.5 times the limit value). A fat block sample almost reached the limit value (0.93 times the limit value).

Table 1 lists names of product and shops of samples which contained common ragweed seeds in 2012 while table 2 lists products free of common ragweed seeds.

Studies on germination rates in 2007 showed that birdseed with ragweed seeds in Luxembourg can act as a vector of contamination (Thommes 2008). The germination rates were not determined for the 2012 samples.

In countries with existing ragweed populations in the wild, these already established populations act rather as the major vector of distribution than bird seed or other pet fodder (Vitalos & Karrer 2008).



Fig. 1. Male flowers of *Ambrosia artemisiifolia* L. in the garden of the National Museum of Natural History, Luxembourg. Photo: Patrick Thommes, 2007.

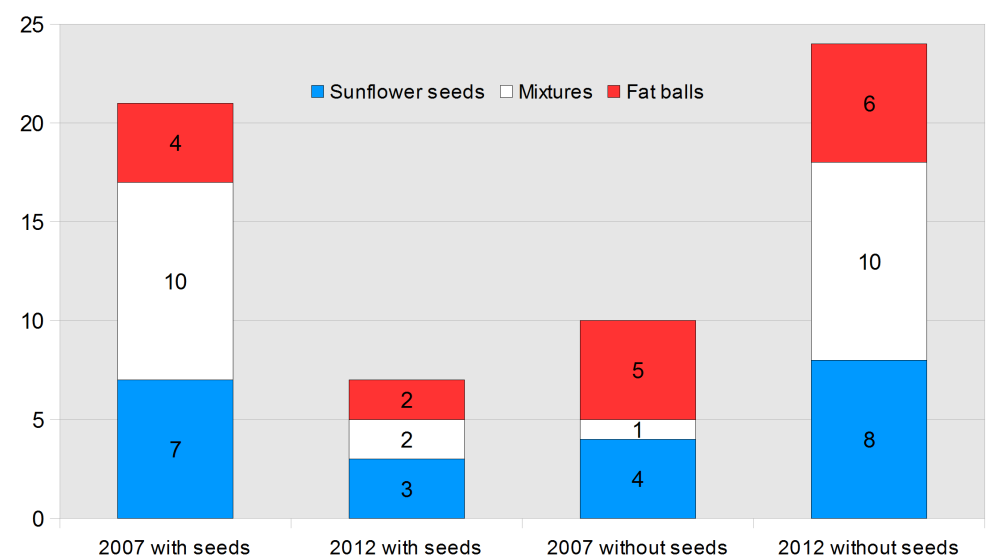


Fig. 2. Occurrence of common ragweed seeds in bird food products in 2007 and 2012.

Product (Shop)	Ragweed seeds/kg	mg/kg
Vogelpick sunflower seeds (Delhaize)	749.00	4813.80
Natu'Riga Fat Balls (Auchan)	11.11	76.67
CJ Wildlife seed fat block (Cactus Hobby)	5.71	46.86
Versele-Laga sunflower seeds (Josy Welter)	2.00	6.87
Cora mixture (Cora)	1.00	4.15
Bird life mixture (Delhaize)	1.00	4.05
Elles sunflower seeds (Hela)	0.40	1.04

Tab. 1. Products containing common ragweed seeds in 2012.

Shop	Product
Auchan	Natu' Riga Mixture; Natu' Riga Menu Flakes.
Cactus Hobby	Vivara Mixture; CJ Wildlife Sunflower-fatblock.
Pall Center	Riga Sunflowerseeds with shell; Natu' Riga Mixture; Natu' Riga Menu Flakes.
Fressnapf	Premiere Energy mix; Premiere Sunflower seeds without shell; Premiere Hempseed; Erdtmanns Fatrings; Erdtmanns Fat Balls.
Gamme Vert	Vadigran Fat Balls; Vadigran Sunflowerseeds with shell; Vadigran Sunflowerseeds without shell; Vadigran Mixture; Mixture (bulk); Sunflowerseeds with shell (bulk).
Hela	Sunflowerseeds with shell (bulk).
Hornbach	Mr. Corn Sunflower seeds with shell (bulk); Mr. Corn Mixture (bulk).
Josy Welter	Versele-Laga Combipack Trio; Versele-Laga Sunflower-fatbar; Versele-Laga Hempseed-fatbar; Versele-Laga Sunflowerseeds with shell (white); Versele-Laga Hempseed; Versele-Laga Energy Muesli.

Tab. 2. Products containing no common ragweed seeds in 2012.

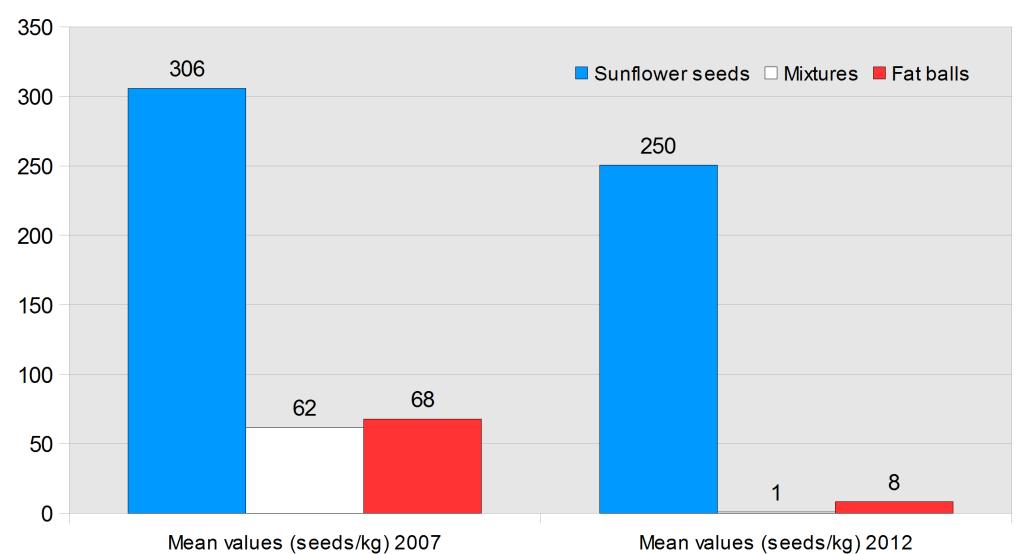


Fig. 3. Mean values of common ragweed seeds per kg bird food in 2007 and 2012.

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