

BARBITURATE POISONING IN AVIAN SCAVENGERS IN SPAIN

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INTRODUCTION

Pharmaceuticals are considered as **emerging contaminants** for wildlife, specially for scavengers. One group with potential high impact because of their high toxicity are the **euthanasia agents**, specially **barbiturates**, included in standard euthanasia protocols for pets and livestock. Barbiturate poisoning represents a significant portion in the total number of poisonings in wildlife. This fact has already been reported in **raptors** from USA, Canada and Europe.



OBJECTIVES

1. Describe the impact of **barbiturate accidental intoxication** in avian scavengers.
2. Describe **intentional barbiturate poisoning** in different species and the use of **baits**.
3. Register barbiturate active substances to place them in a contaminant scale for wildlife.

MATERIAL AND METHODS

Samples (n = 4136)

Animals (n = 3103, 75%)

Baits (n = 847, 20%)

Others (n = 186, 5%)

GPC and GC-MS →

Compound screening



RESULTS

Barbiturates 5th place in contaminants poisoning animals scale (Figure 1)

Barbiturate residues in animals

We detected **38** barbiturate positive cases (n = 38/1275), which represents **2.98%** of the total poisoned animals. The main active substance found was **pentobarbital** (n = 35, 2.74%), but we also detected phenobarbital and barbital (n = 1, 0.08% each).

Barbiturate residues in baits

We detected **5** baits containing barbiturates (n = 5/432), which represents **1.16%** of the total positive baits analysed. We found **pentobarbital** (n = 3, 0.69%) and **phenobarbital** (n = 2, 0.46%).

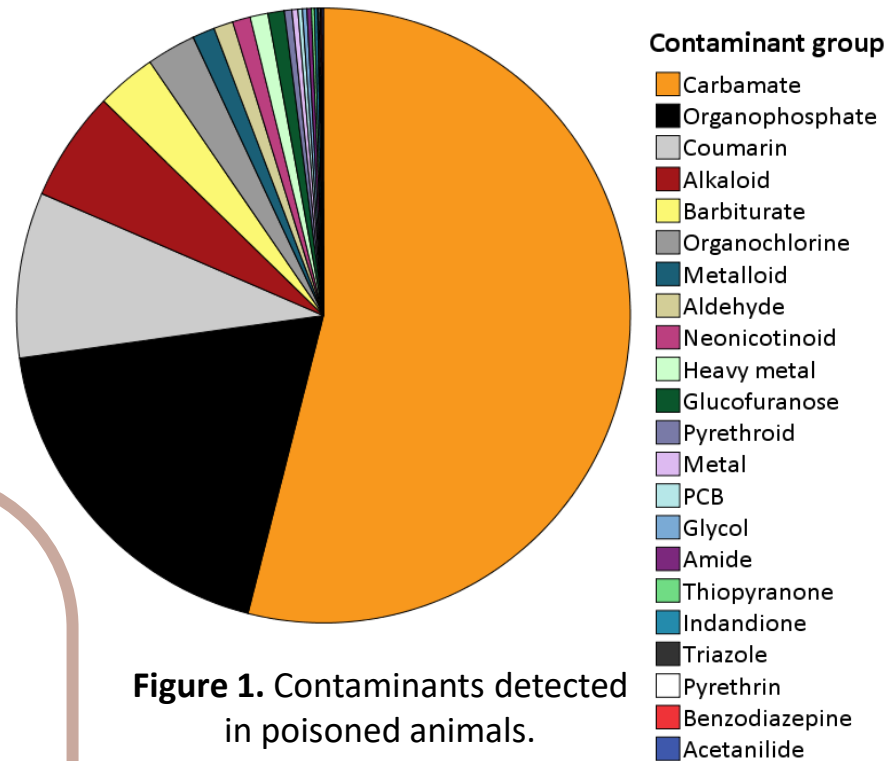


Figure 1. Contaminants detected in poisoned animals.

BARBITURATE PREVALENCE IN SPAIN

Present study	Sánchez-Barbudo et al. 2012
Intoxication cases	Intoxication cases
5th in ranking 38/1275++ (2.98%)	4th in ranking 4/734++ (0.54%)
Baits	Baits
5/432 (1.16%)	2/179 (1.11%)

DISCUSSION

Barbiturate residues in animals

Pentobarbital (n=35) 2.74% → 32 accidental poisoning + 4 euthanasia + 5 intentional

Phenobarbital and barbital (n=1) 0.08% → 1 accidental + 1 intentional

The most affected species were avian scavengers, specially griffon vultures (1.96%).



Barbiturate residues in Baits

Pentobarbital (n=3, 0.69%) → in foal meat + with 8 griffon vultures → accidental

Phenobarbital (n=2, 0.46%) → in chicken meat + intoxicated common buzzard → intentional

		Barbiturate poisoning				
		Accidental	Euthanasia	Intentional	Total	
Animal	Spanish imperial eagle	1	0	0	1	
	Egyptian vulture	2	0	0	2	
	Red squirrel	0	0	1	1	
	Griffon vulture	25	1	0	26	
	Stone marten	0	0	1	1	
	Yellow-legged gull	2	0	0	2	
	Wild boar	0	0	1	1	
	Red kite	2	0	0	2	
	Dog	0	3	0	3	
	Common buzzard	0	0	1	1	
	Red fox	0	0	2	2	
	Total	32	4	6	42	
	Bait	Foal meat	3	0	0	3
		Chicken meat	0	0	2	2
Total		3	0	2	5	

CONCLUSIONS

- Barbiturates have been detected in intoxication cases in Spain, and seems there is an increase.
- Barbiturates are being used in bait preparation in Spain and have an impact on wildlife.
- Pentobarbital is the most detected barbiturate in intoxication cases in wildlife in Spain.
- This compounds need regulation, such as prospect warnings on its risks on wildlife and more reasearch on toxicity to wildlife.



References

Sánchez-Barbudo, I. S., Camarero, P. R., Mateo, R. (2012). Intoxicaciones intencionadas y accidentales de fauna silvestre y doméstica en España: diferencias entre Comunidades Autónomas. *Rev Toxicol.* 29; 20-28

