

# NON-STEROIDAL ANTI-INFLAMMATORY DRUGS FOR VETERINARY USE AND VULTURE CONSERVATION

## INTRODUCTION

Three species from the vultures Gyps gender, decreased their population by more than 97% at south-east Asia's continent between 1990 and 2007. Several studies claim that the cause was the veterinary use of diclofenac, an NSAID. In 2013, that drug was authorized in Spain for pigs, cattle and horses' treatment.

## OBJECTIVE

To perform a review of the impact of the authorization and subsequent ban on diclofenac drugs in Southeast Asian countries, the most recent authorization of these in Spain, the level of toxicity of other NSAIDs for vultures, and actions for their conservation.

**They represent more than 90% of European populations of all vulture species!**

## CONSERVATION STATUS OF SPAIN SPECIES





Griffon vulture	Bearded vulture	Cinereous vulture	Egyptian vulture
			
30.946 pairs	100 pairs	1.300 pairs	1.400 pairs
Least concern	Endangered	Vulnerable	Vulnerable
Increasing	Increasing	Increasing	Decreasing

Figure 1. Vulture species and number of pairs in the Iberian Peninsula (provided by Ignasi Marco).



Figure 5. Visceral gout on a heart.  
(Provided by Rafael Molina)



Figure 6. Black vulture breed found death in Lleida.  
Author: Agents rurals de Catalunya. (Herrero-Villar et al., 2021).

## Veterinary NSAIDs reviewed

MELOXICAM  
TOLFENAMIC ACID → **SAFE**

NIMESULIDE  
KETOPROFEN  
DICLOFENAC

CARPROFEN  
FLUNIXIN



## CONCLUSIONS

- Vultures play an essential role in nature, therefore it is very important to promote their conservation. In addition, it is vital to insist on banning these drugs, and to consider that there are safe and cost-effective alternatives.
- The authorization of this drug puts at risk 90% of the European species of vultures that live in Spain.
- It has been demonstrated how the recommendations imposed by EMA are not enough as there is still evidence of diclofenac presence in nature.
- Conservation actions are effective, but their effectiveness is jeopardized by the presence of this drug within the reach of vultures.
- Insist on the investigation of other NSAIDs authorized in Spain (acetylsalicylic acid, phenylbutazone, sodium salicylate, metamizole and suxibuzone) whose effect on vultures is still unknown.