

# Aflatoxin M1 formation and seasonal variation

Esther Segarra Aljama

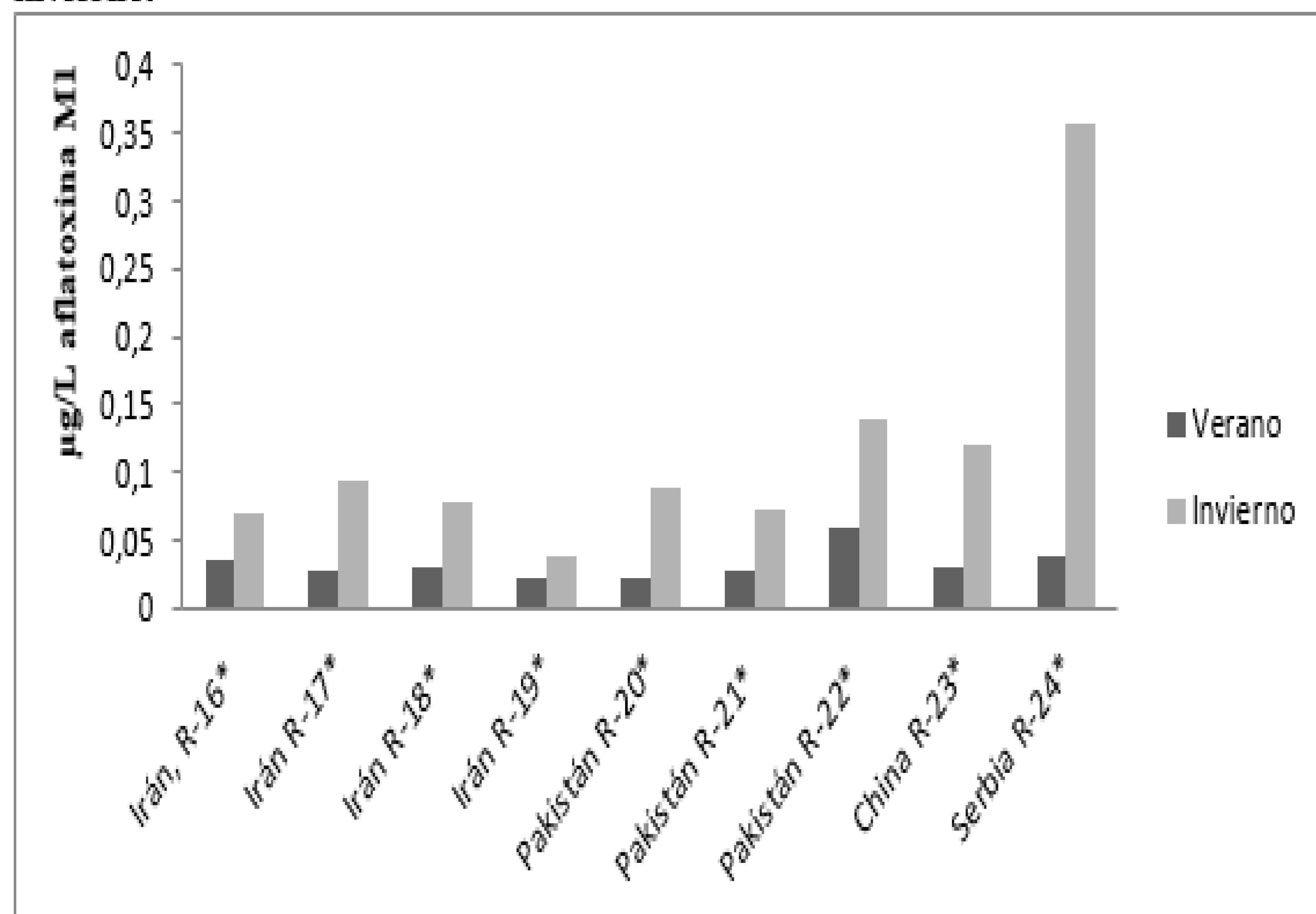
June 2016

## Objectives

- See the biotransformation of the aflatoxin B1 to its epoxy and to AFM1 in the animal, as there is a relation between the aflatoxin B1 which is ingested by the animal and the presence of aflatoxin M1 in the milk.
- The main objective of this work is to check the possible seasonal variations in the levels of aflatoxin present in the milk. The study is basically focussed on the winter and summer seasons as the temperatures are more extreme on those periods and there might be significant differences between both seasons.

## Results

**Table 2. Differences concentration of aflatoxin M1 in milk between summer and winter.**



All results obtained by article, gave a significant difference ( $P < 0.05$ ) between summer and winter.

R-x \*, means article where has been extracted the information .R-16 \*, is article number 16 in the literature.

## Biotransformation

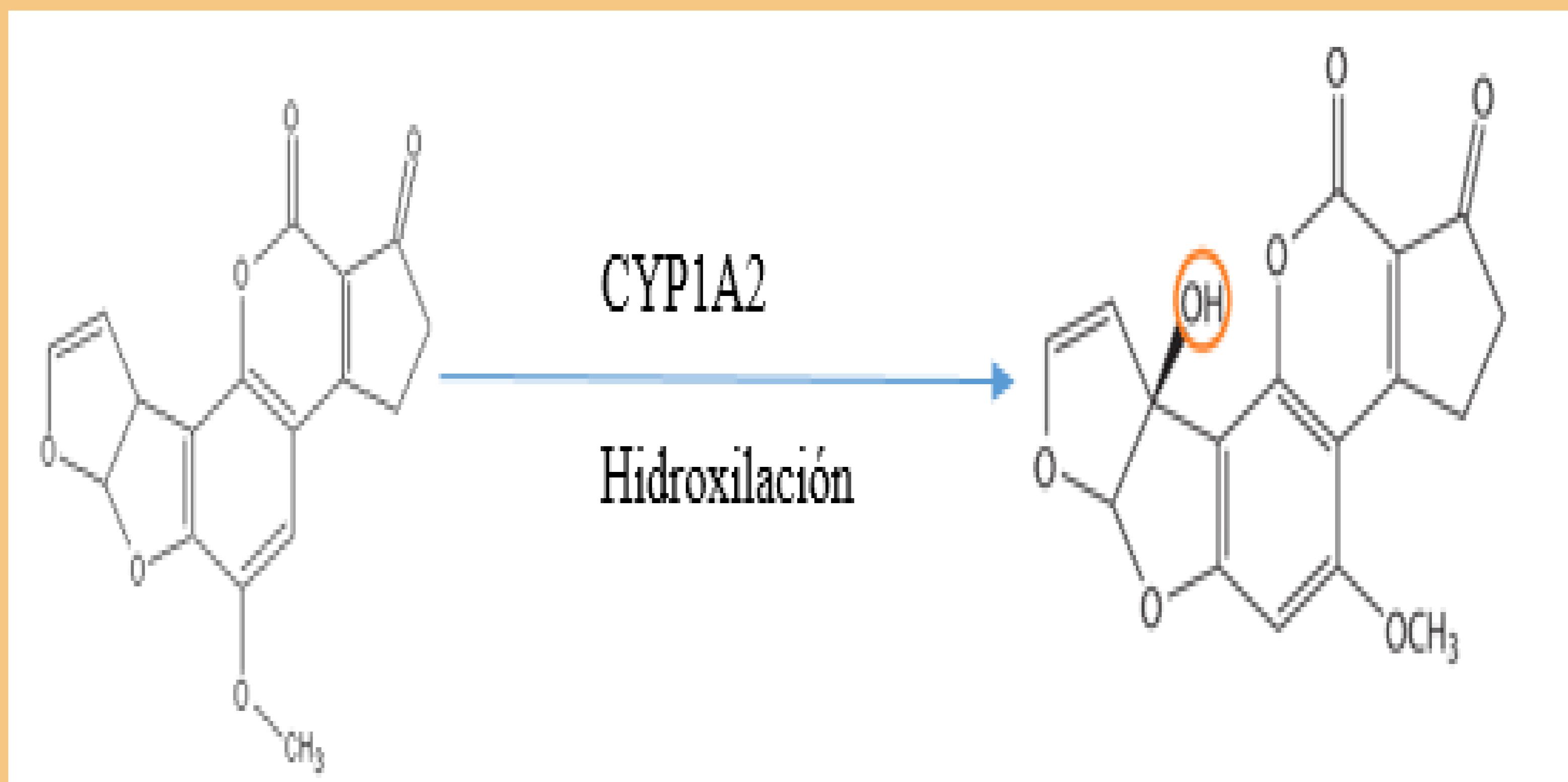


Figure 2. Biotransformation of Aflatoxin B1 in Aflatoxin M1

## Conclusions

- Milk producers have to take extra care with the feeding of their cows during the lactation period.
- The animal can convert aflatoxin B1 in different metabolites depending on the enzyme which acts.
- The rate of transformation of the aflatoxin M1 is variable with a maximum up to 6,2% of the total of aflatoxin B1 ingested by the animal.
- The seasonal variation between summer and winter, I reached the conclusion that there is a clear pattern and the concentration of aflatoxin M1 is higher in winter than in summer season.
- The seasonal pattern is due basically to the unhealthy feeding of the animals during the winter period where they eat many contaminated foods with high levels of aflatoxin B1.