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THE IMPACT OF MYCOTIC CONTAMINATED FEED ON THE HEALTH OF PIGS AND ON THE HUMAN CONSUMER

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Mycotoxins are produced by filamentous fungi (molds) that are always present in nature and under the right conditions, have the potential to contaminate almost all raw materials used in pig feed. Mycotoxins are not produced by a single species of mold, which means that different species can produce the same mycotoxins. Molds grow using nutrients from infested plants or raw materials they infest, reducing their nutrient value. However, the mycotoxins pose a much greater risk to animals, with pigs being particularly susceptible to this contamination.

Introduction

One of the most important problem of animal nutrition is the involuntary administration or due to the lack of other feeds of fodder infested with molds. The consequences of food consumption contaminated with mycotoxins on health to humans are estimated indirectly based on the effect observed in animals.

Materials and method

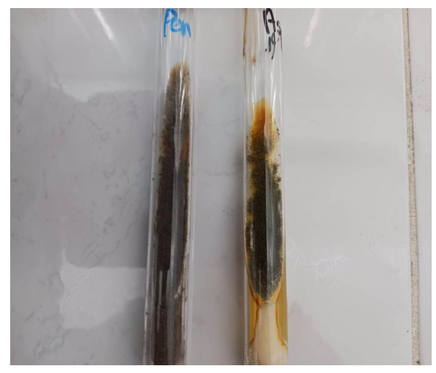
The research was carried out on 10-15 weeks-old piglets, from the Banat White and Middle White breeds, come from private farms in Timiș County, with a body weight between 23.7-27.9 kg. The breeders noticed that the pigs began to consume reduced amounts of feed, were lethargic, some had vomiting or diarrhea, as well as, were dehydrated and had an appreciable decrease in body weight. Some of the pigs were observed by the breeders when they refused to consume the feed, only rummaging through their food. Pigs with diarrhea pass faeces of irregular consistency, including faeces changing from slightly soft to watery diarrhea with streaks of blood or undigested feed. The situation worsened when some of the affected pigs died (Table).

Nr. of pigs	General symptoms	Digestive symptoms	Nr. of deaths
28	lethargy	diarrhea	9
	anorexia	dehydration	
	refusal to move	colics	
	fidgets	rectal prolaps	
	Skin sensitivity	hipersalivation	
		vomiting	

In the microbiology laboratory, the fodder was analyzed to detect possible molds developed on them, although they did not appear moldy during a general examination. In the laboratory, the samples collected from the fodder were seeded on special culture media for microscopic fungi, namely on Czapek medium and on agar with malt extract. The samples were incubated at 25-30 degrees Celsius for 7 days. All dead piglets were necropsied and all the changes in the tissues and organs were carefully observed.

Results and discussions

Following the mycological examination, two species of microscopic fungi were identified in the analyzed feed sample. After 7 days of incubation, it was found that *Penicillium verrucosum* and *Aspergillus ochraceus*. After performing the necropsy examination it was found that the changed appearance of the liver, kidneys, spleen, intestines and mesenteric lymph nodes. In the case of pigs, the ochratoxin present in the feed accumulates in their meat. Due to the fact that mycotoxins are resistant to processing, they can be found even in highly processed foods, constituting a real danger to the health of the human consumer.



Conclusions

Following laboratory examinations of the feed given to animals with clinical signs of intoxication, it was revealed that they were contaminated with microscopic fungi of the species *Penicillium verrucosum* and *Aspergillus ochraceus*. The conclusion can be drawn is that what affected the pigs, killing some of them, are mycotoxins, knowing the fact that ochratoxins are fungal metabolites isolated from the genus *Aspergillus* and *Penicillium*, namely ochratoxin A.

The necropsy of dead animals with clinical signs of intoxication revealed anatomopathological changes characteristic of mycotoxin poisoning.

Liver lesions confirm that this is the target organ for mycotoxins, being an indicator of the metabolic disorders produced by them. Mycotoxins interfere with protein, lipid and carbohydrate metabolism, resulting in the reduction of the body's detoxification capacity. Metabolic disorders induced by mycotoxins are also reflected in the degree of utilization of feed.

The average daily gain achieved by the animals was much lower. Because mycotoxins are resistant to processing, they can be found even in highly processed foods, constituting a real danger to the health health of the human consumer.