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Mycotoxin co-contaminations

Co-contamination of poultry feedstuffs are common and the problems and clinical signs seen in birds when more than one mycotoxin is involved are complex and varied. In general, co-contaminations appear to have a more severe effect than single contaminations. For example it has been reported that broilers receiving aflatoxin, ochratoxin A, zearalenone and T-2 toxin showed higher incidences of thigh haemorrhages, breast haemorrhages, liver steatosis and gizzard erosions.

Aflatoxins and ochratoxin

This combination is very toxic as they interact synergistically. The signs seen with this co-toxicosis are very different from those seen in aflatoxicosis, in that the ochratoxin suppresses the signs associated with aflatoxin induced liver damage. The target organ of the co-contamination is the kidney.

Aflatoxins and T-2 toxin

Again, when present together, these two mycotoxins interact synergistically with a serious impact on body weight, relative organ weights and antibody titres (immunosuppression).

T-2 toxin and diacetoxyscirpenol

Here the effects seem to be additive. In laying hens these additive effects are seen in terms of feed intake, oral lesions, plasma enzyme activities and depressed egg production, while in broilers the additive effects are seen in terms of feed intake and body weight gain.

Citrinin and ochratoxin

Here the interaction is synergistic but can also be antagonistic! On the antagonistic front the effects of ochratoxin counter the dramatic water intake which is so characteristic of citrinin toxicity.

Safe levels?

There are no safe levels for mycotoxins in feeds as the level does not just depend on the quantity of mycotoxin present, but also on which other mycotoxins are present.