



2022 Crop Year Mycotoxin Report

From September 2022 through May 2023, the Commercial Feed Regulatory Program (CFRP) obtained 120 samples of various feeds for mycotoxin analysis (**Figure 1**). Of the 120 samples obtained, 115 were routine official samples and 5 were investigative samples (of which, 3 were in response to a complaint). The University of California, Davis, California Animal Health and Food Safety Laboratory conducted 10 mycotoxin analyses on each of the 120 samples, for a total of 1200 analyses. Samples were analyzed for Aflatoxin B1, B2, G1, G2 ppb, HT-2 ppb, Zearalenone (F-2 Toxin) ppm, Fumonisin B1 ppm, Deoxynevalenol (DON) ppm, Ochratoxin ppb, and T2 Toxin ppm.

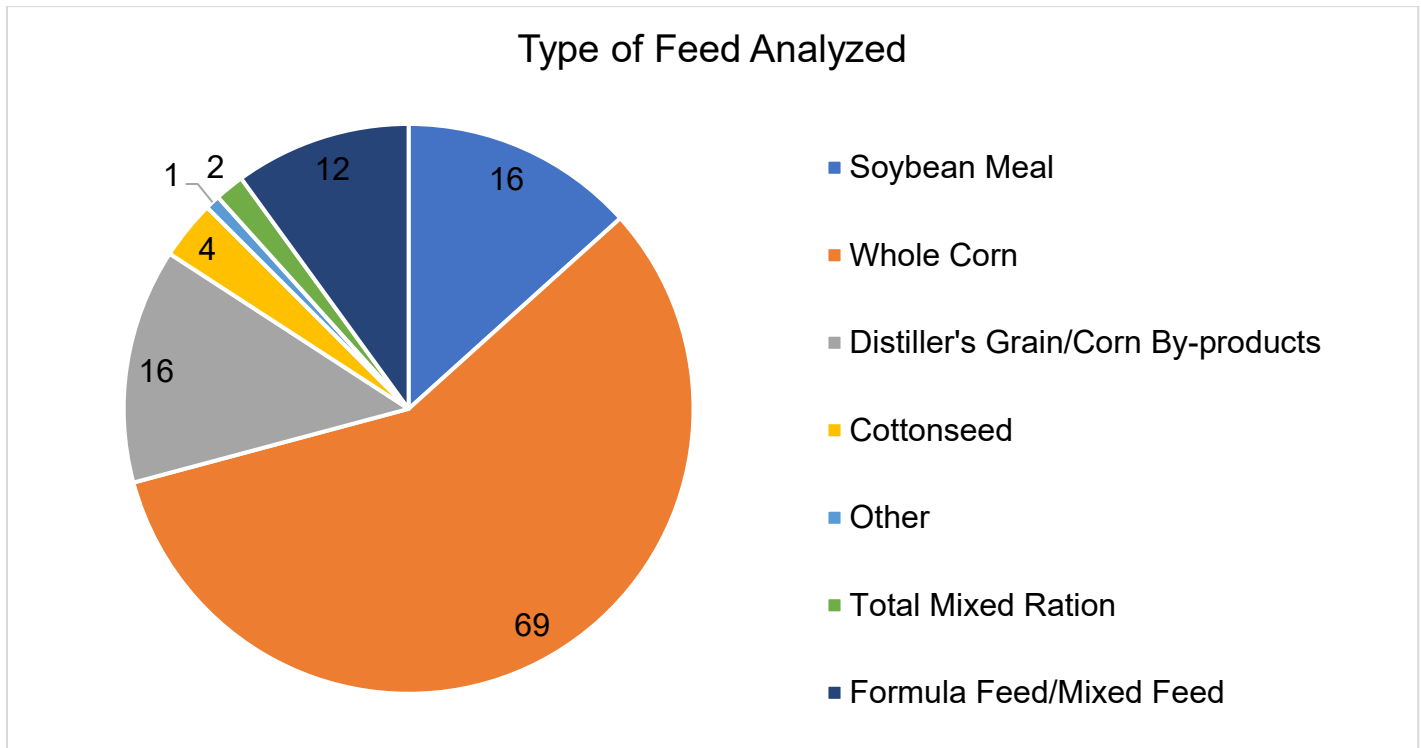


Figure 1. Feed type of 120 samples obtained and analyzed by the CFRP for mycotoxins.

The US Food and Drug Administration (FDA) has established tolerance levels for aflatoxin, fumonisin and vomitoxin by species and class of livestock¹. The tolerance level for aflatoxins varies by species from 300 parts per billion (ppb) for finishing beef cattle to 20 ppb in dairy cattle. Due to California's prominent dairy industry, CFRP requires that all commercial feed in California not exceed 20 ppb total aflatoxin, since it can be transferred into milk and poses a human health concern. Tolerance levels for fumonisins range from 5 parts per million (ppm) for equids and rabbits to 100 ppm for poultry raised for slaughter. Vomitoxin tolerance levels in feed ingredients range from 5 ppm for swine to 30 ppm for beef cattle. FDA has not established guidance for the other mycotoxins tested.

Of the 120 samples analyzed, 96 (80%) resulted in no detectable levels of mycotoxins (Figure 2). There was one sample of nut meal which had detectable levels of aflatoxin B1 and vomitoxin, but neither at a level of safety concern. There were 16 samples of corn with detectable levels of fumonisin B1, which were all under 3 ppm. Of those, 1 also had a detectable level of vomitoxin (0.6 ppm), and 1 also had a detectable level of aflatoxin B1 (5 ppb) which was under the maximum limit of 20 ppb. Five samples of corn by-products, including dried distiller's grain with solubles and corn gluten pellets, had detectable levels of fumonisin B1 and vomitoxin, all under 2 ppm. There were 2



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samples of complete feed which had detectable levels of fumonisin B1, both under 2 ppm. No samples contained any detectable levels of aflatoxin B2, aflatoxin G1, aflatoxin G2, Zearalenone (F-2 toxin), T-2 toxin, H-T2, or ochratoxin. None of the samples contained levels of a mycotoxin considered to be a safety concern and no regulatory action was necessary.

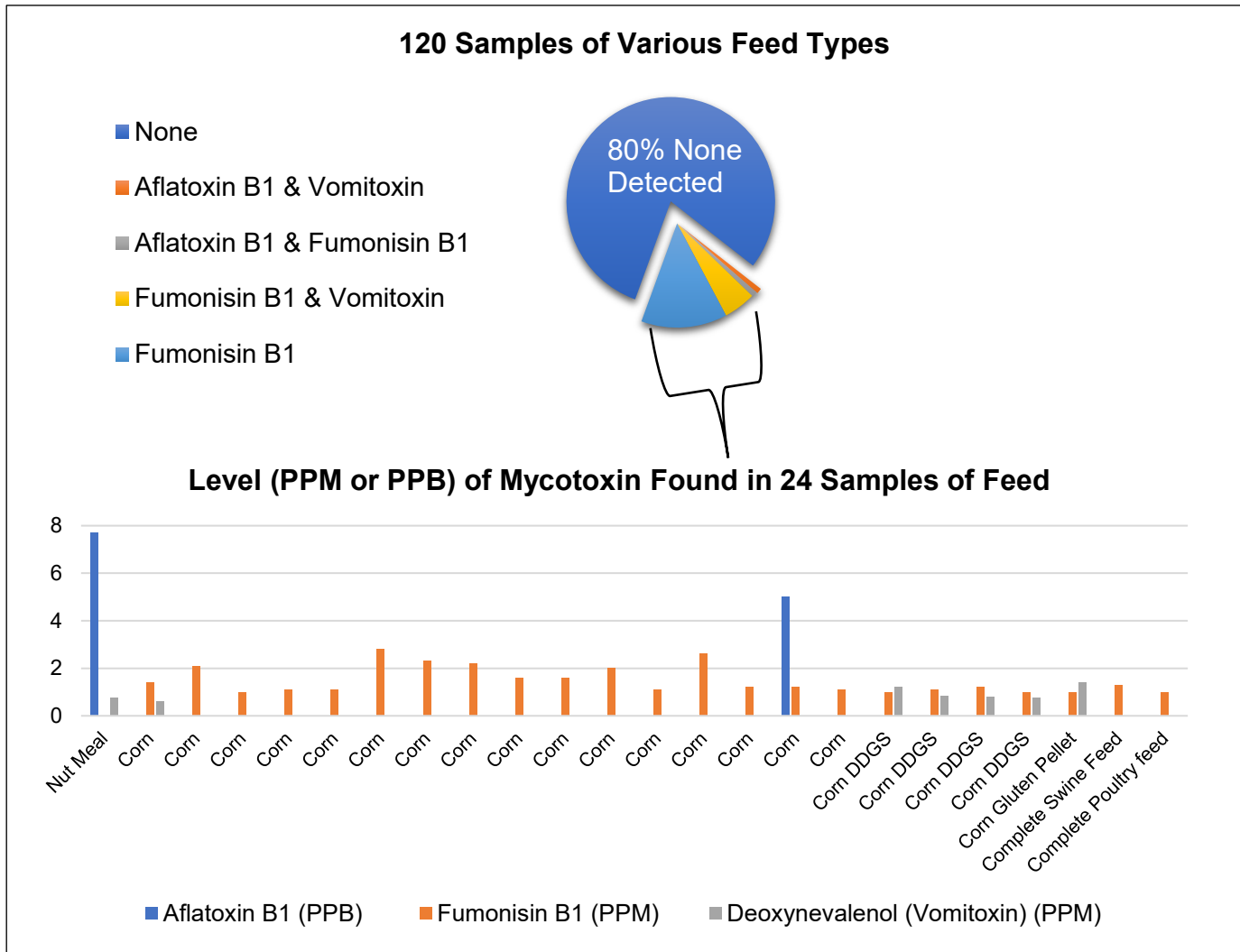


Figure 2. Mycotoxins detected in 24 of 120 samples of various feeds from the 2022 crop year and level detected. Fumonisin and vomitoxin are reported in PPM; aflatoxin B1 is reported in PPB. FDA tolerances vary by species, with a maximum tolerance of 20 ppb for aflatoxin and 5 ppm for fumonisin and vomitoxin.

1: FDA Center for Veterinary Medicine (2016). CVM Annual Report on Mycotoxins in Animal Food Report for Fiscal Year 2016. <https://www.fda.gov/media/130526/download>