



2021 Crop Year Mycotoxin Report

The California Department of Food and Agriculture (CDFA) Commercial Feed Regulatory Program (CFRP) surveys each year's corn and cottonseed crops received at feed mills in California for the presence of mycotoxins. This year, the scope of sampling was broadened to include other commodities and mixed feed.

The U.S. 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.

Between July 2021 and August 2022, CFRP obtained 105 samples for mycotoxin analyses; 50 corn, 15 cottonseed, 23 mixed feed, 14 oilseed meal, and 3 corn by-products (Figure 1). Whole corn samples originated from Iowa, Illinois, Minnesota, Missouri, North Dakota, Nebraska, South Dakota, Vermont, and California. Cottonseed samples originated from Arizona, California, Georgia, Oklahoma, Tennessee, and Texas.

The University of California, Davis, California Animal Health and Food Safety Laboratory conducted 10 mycotoxin analyses on each of the 105 samples, for a total of 1,050 analyses. Of the 105 samples analyzed, over 92.4% resulted in no detectable levels of mycotoxins (Figure 2). There were eight samples of feed with detectable levels of either aflatoxin B1, aflatoxin B2, zearalenone, fumonisin B1, or vomitoxin, which were all under 2 ppm. No samples contained any detectable levels of aflatoxin G1, T-2 toxin, H-T2, or ochratoxin.

Only one of the eight samples had a mycotoxin level considered to be a safety concern. A sample of Pima Cottonseed originating from Arizona contained 65 ppb aflatoxin B1 and 5.4 ppb aflatoxin B2, which is over the California requirement of 20 ppb total

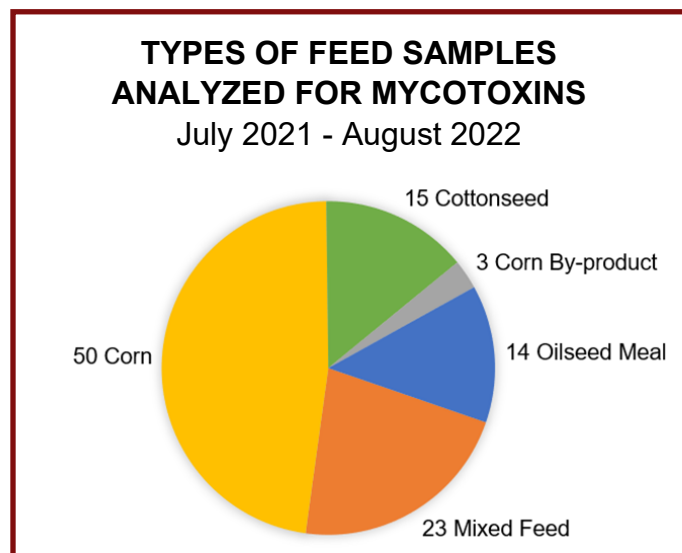


Figure 1. Breakdown of types of feed samples analyzed for mycotoxins from July 2021 through August 2022.



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aflatoxin. As soon as results were received, three follow up samples of the most recent shipments from the same origin were obtained and the purchasers were informed to place the product on hold pending results. The follow-up samples resulted in under 20 ppb aflatoxin, with one containing 7.2 ppb aflatoxin B1, and no detectable levels of aflatoxin in the other two samples. The product was considered safe for animal consumption and no further action was necessary.

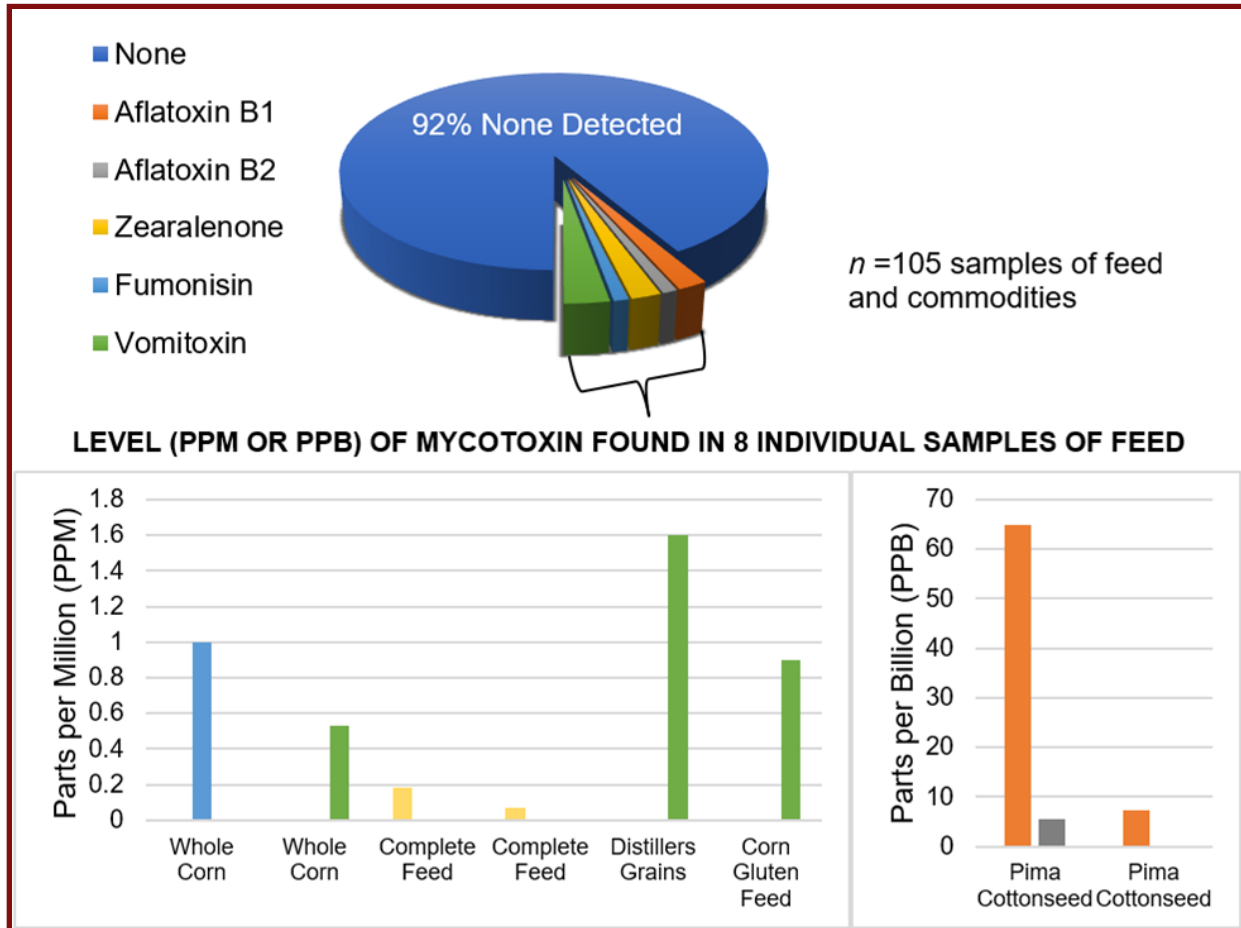


Figure 2. Mycotoxins detected in 8 of 105 samples of various feeds from the 2021 crop year and level detected. Fumonisin, vomitoxin, and zearalenone are reported in PPM; aflatoxin B1 and B2 are reported in PPB. FDA tolerances vary by species, with a minimum tolerance of 20 ppb for aflatoxin and 5 ppm 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>