

Guideline limits for mycotoxins in animal feeds to reduce negative effects on health and performance



The Alltech Mycotoxin Management program uses the same guideline limits for all feedstuffs and finished feeds, however, guideline limits are specific to each individual animal species by age group and physiological status measured in parts per billion (ppb). The Alltech 37+[®] mycotoxin analysis guideline limits were designed by utilizing two areas of information, government regulations and scientific research.

Mycotoxin advisory levels provided by global government regulations are considered but oftentimes these suggested limits are set quite high and represent a level that could severely harm the animal. As a result, these governmental guidelines are used as a reference for Alltech 37+ but may not be identical. Available scientific research is also utilized to establish guideline limits for each mycotoxins and animal species. With current research, the Alltech 37+ guideline limits can be set at lower, medium or higher levels to understand the impact of mycotoxins on animal performance. As specific Mycotoxin limits may apply in individual countries, please also refer to the regulatory limits in your local area.



Feed for Sows/ Gilts/ Boars, ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	20	35	50
Aflatoxins	20	35	50
Ochratoxins/Citrinin	20	35	50
Type B Trichothecenes	250	500	750
Type A Trichothecenes	50	100	150
Fusaric acid/Emerging mycotoxins	1000	2000	3000
Fumonisin	1000	2000	3000
Zearalenone	25	50	75
Other Penicillium Mycotoxins	40	70	100
Other Aspergillus Mycotoxins	40	60	80
Ergot Alkaloids	200	350	500

Feed for Nursery Pigs, ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	5	10	20
Aflatoxins	5	10	20
Ochratoxins/Citrinin	20	35	50
Type B Trichothecenes	250	500	750
Type A Trichothecenes	50	100	150
Fusaric acid/Emerging mycotoxins	1000	2000	3000
Fumonisin	1000	1750	2500
Zearalenone	50	100	150
Other Penicillium Mycotoxins	40	70	100
Other Aspergillus Mycotoxins	40	60	80
Ergot Alkaloids	200	350	500

Feed for Grower/ Finisher Pigs, ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	25	50	100
Aflatoxins	25	50	100
Ochratoxins/Citrinin	20	35	50
Type B Trichothecenes	250	500	1000
Type A Trichothecenes	50	100	150
Fusaric acid/Emerging mycotoxins	1000	2000	3000
Fumonisin	2500	3750	5000
Zearalenone	75	150	200
Other Penicillium Mycotoxins	40	70	100
Other Aspergillus Mycotoxins	40	60	80
Ergot Alkaloids	200	350	500



Feed for Poultry Breeder/ Layers, ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	20	40	80
Aflatoxins	20	40	80
Ochratoxins/Citrinin	20	50	75
Type B Trichothecenes	500	1000	1500
Type A Trichothecenes	30	65	100
Fusaric acid/Emerging mycotoxins	1000	2000	3000
Fumonisin	5000	7500	10000
Zearalenone	250	500	750
Other Penicillium Mycotoxins	80	200	300
Other Aspergillus Mycotoxins	60	120	240
Ergot Alkaloids	500	750	1000

Feed for Turkeys, ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	25	50	75
Aflatoxins	25	50	75
Ochratoxins/Citrinin	20	50	75
Type B Trichothecenes	250	500	750
Type A Trichothecenes	30	65	100
Fusaric acid/Emerging mycotoxins	1000	2000	3000
Fumonisin	10000	15000	20000
Zearalenone	500	1000	2000
Other Penicillium Mycotoxins	80	200	300
Other Aspergillus Mycotoxins	105	225	300
Ergot Alkaloids	500	750	1000

Feed for Poultry Broilers, ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	35	70	100
Aflatoxins	35	70	100
Ochratoxins/Citrinin	20	50	75
Type B Trichothecenes	500	1000	1500
Type A Trichothecenes	30	65	100
Fusaric acid/Emerging mycotoxins	1000	2000	3000
Fumonisin	10000	15000	20000
Zearalenone	500	1000	2000
Other Penicillium Mycotoxins	80	200	300
Other Aspergillus Mycotoxins	105	225	300
Ergot Alkaloids	500	750	1000

Feed for Starter Poultry (day 0-21), ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	15	30	60
Aflatoxins	15	30	60
Ochratoxins/Citrinin	20	40	60
Type B Trichothecenes	300	500	700
Type A Trichothecenes	20	40	80
Fusaric acid/Emerging mycotoxins	1000	2000	3000
Fumonisin	5000	7500	10000
Zearalenone	250	500	750
Other Penicillium Mycotoxins	60	140	200
Other Aspergillus Mycotoxins	80	140	200
Ergot Alkaloids	200	350	500

Feed for Ducks, ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	20	40	80
Aflatoxins	20	40	80
Ochratoxins/Citrinin	20	50	75
Type B Trichothecenes	250	500	750
Type A Trichothecenes	30	65	100
Fusaric acid/Emerging mycotoxins	1000	2000	3000
Fumonisin	5000	7500	10000
Zearalenone	500	1000	1500
Other Penicillium Mycotoxins	80	200	300
Other Aspergillus Mycotoxins	100	225	300
Ergot Alkaloids	200	350	500



Feed for Calves, ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	5	10	20
Aflatoxins	10	20	40
Ochratoxins/Citrinin	20	35	50
Type B Trichothecenes	250	500	750
Type A Trichothecenes	10	25	50
Fusaric acid/Emerging mycotoxins	1000	2000	3000
Fumonisin	5000	10000	15000
Zearalenone	25	50	75
Other Penicillium Mycotoxins	25	50	100
Other Aspergillus Mycotoxins	25	50	100
Ergot Alkaloids	200	350	500

Feed for Beef Cattle, ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	50	100	150
Aflatoxins	50	100	150
Ochratoxins/Citrinin	500	1000	1500
Type B Trichothecenes	1000	2000	3000
Type A Trichothecenes	50	100	200
Fusaric acid/Emerging mycotoxins	1000	2000	3000
Fumonisin	20000	40000	60000
Zearalenone	200	500	1000
Other Penicillium Mycotoxins	50	100	200
Other Aspergillus Mycotoxins	50	100	200
Ergot Alkaloids	200	350	500

Feed for Dairy Cows, ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	50	100	150
Aflatoxins	50	100	150
Ochratoxins/Citrinin	500	1000	1500
Type B Trichothecenes	500	1000	2000
Type A Trichothecenes	50	100	200
Fusaric acid/Emerging mycotoxins	1000	2000	3000
Fumonisin	10000	20000	30000
Zearalenone	100	250	500
Other Penicillium Mycotoxins	50	100	200
Other Aspergillus Mycotoxins	50	100	200
Ergot Alkaloids	200	350	500

Feed for Sheep/Goats, ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	50	100	150
Aflatoxins	50	100	150
Ochratoxins/Citrinin	50	100	200
Type B Trichothecenes	1000	2000	3000
Type A Trichothecenes	50	100	200
Fumonisin	20000	40000	60000
Zearalenone	50	100	200
Fusaric acid	1000	2000	3000
Emerging mycotoxins	250	350	500
Other Penicillium Mycotoxins	50	100	150
Other Aspergillus Mycotoxins	50	100	150
Ergot Alkaloids	200	350	500



Feed for White Shrimp, ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	5	10	20
Aflatoxins	5	10	20
Ochratoxins/Citrinin	50	100	200
Type B Trichothecenes	50	100	200
Type A Trichothecenes	15	30	60
Fusaric acid/Emerging mycotoxins	500	1000	2000
Fumonisin	750	1500	3000
Zearalenone	50	100	200
Other Penicillium Mycotoxins	25	50	100
Other Aspergillus Mycotoxins	20	40	60
Ergot Alkaloids	50	100	200

Feed for Channel Catfish, ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	25	50	100
Aflatoxins	25	50	100
Ochratoxins/Citrinin	50	100	200
Type B Trichothecenes	250	500	1000
Type A Trichothecenes	50	100	200
Fusaric acid/Emerging mycotoxins	500	1000	2000
Fumonisin	2500	5000	10000
Zearalenone	75	150	300
Other Penicillium Mycotoxins	40	70	100
Other Aspergillus Mycotoxins	40	60	80
Ergot Alkaloids	50	100	200

Feed for Sea Bass & Sea Bream, ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	5	10	20
Aflatoxins	5	10	20
Ochratoxins/Citrinin	20	50	100
Type B Trichothecenes	250	500	750
Type A Trichothecenes	50	100	200
Fusaric acid/Emerging mycotoxins	500	1000	2000
Fumonisin	2500	5000	10000
Zearalenone	75	150	300
Other Penicillium Mycotoxins	40	70	100
Other Aspergillus Mycotoxins	20	40	60
Ergot Alkaloids	50	100	200

Feed for Salmon, ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	5	10	20
Aflatoxins	5	10	20
Ochratoxins/Citrinin	20	50	100
Type B Trichothecenes	250	500	1000
Type A Trichothecenes	50	100	200
Fusaric acid/Emerging mycotoxins	500	1000	2000
Fumonisin	2500	5000	10000
Zearalenone	75	150	300
Other Penicillium Mycotoxins	40	70	100
Other Aspergillus Mycotoxins	40	60	80
Ergot Alkaloids	50	100	200

Feed for Rainbow Trout, ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	5	10	20
Aflatoxins	5	10	20
Ochratoxins/Citrinin	20	50	100
Type B Trichothecenes	250	500	750
Type A Trichothecenes	50	100	200
Fusaric acid/Emerging mycotoxins	500	1000	2000
Fumonisin	2500	5000	10000
Zearalenone	75	150	300
Other Penicillium Mycotoxins	40	70	100
Other Aspergillus Mycotoxins	20	40	60
Ergot Alkaloids	50	100	200

Feed for Carp & Tilapia, ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	25	50	100
Aflatoxins	25	50	100
Ochratoxins/Citrinin	50	100	200
Type B Trichothecenes	250	500	1000
Type A Trichothecenes	50	100	200
Fusaric acid/Emerging mycotoxins	500	1000	2000
Fumonisin	2500	5000	10000
Zearalenone	75	150	300
Other Penicillium Mycotoxins	40	70	100
Other Aspergillus Mycotoxins	40	60	80
Ergot Alkaloids	50	100	200



Feed for Horses, ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	20	35	50
Aflatoxins	20	35	50
Ochratoxins/Citrinin	20	35	50
Type B Trichothecenes	500	1000	2000
Type A Trichothecenes	50	100	200
Fusaric acid/Emerging mycotoxins	1000	2000	3000
Fumonisin	500	1000	1500
Zearalenone	100	250	500
Other Penicillium Mycotoxins	50	100	200
Other Aspergillus Mycotoxins	50	100	200
Ergot Alkaloids	50	100	200

Feed for Dogs/ Cats, ppb (µg/kg)

Mycotoxin	Lower	Moderate	Higher
Aflatoxin B1	5	10	20
Aflatoxins	5	10	20
Ochratoxins/Citrinin	10	25	50
Type B Trichothecenes	500	1000	1500
Type A Trichothecenes	25	50	100
Fusaric acid/Emerging mycotoxins	1000	2000	3000
Fumonisin	1000	2000	4000
Zearalenone	25	50	100
Other Penicillium Mycotoxins	25	50	100
Other Aspergillus Mycotoxins	20	40	80
Ergot Alkaloids	200	350	500