

# Fungal and Bacterial Count Guidelines\* for Agricultural Feeds and Total Mixed Rations

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Feed	Corn Silage	Legume/Mixed Forage	Corn Grain	TMR***
<b>Anti-Nutritional Compound</b>	<b>Mold, CFU/g</b>			
Mean	590,000	470,000	900,000	200,000
Median	< 10	500	10,000	10,000
Goal (15th Percentile)	0	0	0	0
Upper Limit (85th Perc.)	> 100,000	> 250,000	> 400,000	> 200,000
Feed	Corn Silage	Legume/Mixed Forage	Corn Grain	TMR
<b>Anti-Nutritional Compound</b>	<b>Yeast, CFU/g</b>			
Mean	4,600,000	2,200,000	4,800,000	5,200,000
Median	40,000	15,000	100,000	1,000,000
Goal (15th Percentile)	< 10	0	0	< 100,000
Upper Limit (85th Perc.)	> 8,100,000	> 1,500,000	> 11,800,000	> 12,000,000
Feed	Corn Silage	Legume/Mixed Forage	Corn Grain	TMR
<b>Anti-Nutritional Compound</b>	<b>Clostridia perfringens, CFU/g</b>			
Mean	< 10	15	5	20
Median	0	0	0	0
Goal (15th Percentile)	0	0	0	0
Upper Limit (85th Perc.)	> 10	> 10	0	> 20
Feed	Corn Silage	Legume/Mixed Forage	Corn Grain	TMR
<b>Anti-Nutritional Compound</b>	<b>Enterobacteriaceae**, CFU/g</b>			
Mean	1,320,000.0	150,000	21,000	29,000
Median	20	200	100	1,000
Goal (15th Percentile)	0	0	0	< 100
Upper Limit (85th Perc.)	> 2000	> 40,000	> 4,000	> 20,000

\*The tables list goals and upper limits built from 6-year database population statistics generated from over 150,000 commercial observations from the United States (CFU = colony forming units).

*\*\*The table lists goals and upper limits built from Rock River Laboratory database population statistics (n > 8,000 observations over 6 years). Enterobacteriaceae count has been suggested as a bacterial contamination tool ("high" count suggested as 10,000+ CFU/g; 2001 Food Standards of Australia and New Zealand). C. perfringens has been implicated as a bacteria negatively affecting gut health (Dennison et al., 2002).*

*\*\*\*Total mixed rations guidelines are estimates based on sample analysis population data (n > 4,000 observations) and butyric acid bacteria spore count values adapted from Vissers et al. (2007). Yeast enumeration techniques will quantify both spoilage and probiotic yeast species.*

*Disclaimer: Many factors beyond feedstuff fungal and bacterial content affect animal performance. We cannot be held responsible in any way for any management decisions, performance or actions taken following Rock River Laboratory microbial enumeration results being delivered.*

## **References**

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