

# Assays Shows *Bacillus* Survive Pelleting

September 2015

**Introduction:** Spore-former *Bacillus* species are heat stable, have extended shelf - life at room temperature, survive the low gastric pH and most of the entire dose of ingested bacteria can reach the small intestine intact (Cutting, 2010; Lee et al., 2010a).

The purpose of this study was to test survivability of Microlife L *Bacillus licheniformis* direct fed microbial specifically in a commercial feed mill. The resulting post-pelleting sample cfu/g (colony forming unit/gram) of *Bacillus* would be compared to product label cfu/g in finished feed.

**Means & Methods:** Microlife L was pelleted at 190.7 F after 62 seconds in conditioner in order to safely fall within the range of the upcoming FSMA 2016 requirement of 188-193 F for 60 seconds minimum. Samples obtained from commercial mill located in SE USA, September, 2015.

Per the FDA Compliance Program Guidance Manual 7371.004, a minimum of five subs to demonstrate degree of sample homogeneity were collected. Pelleted potency samples were collected in whirl-pak plastic bags and stored and transported in accordance with label instructions and per standard industry additive assay processing procedures.

**Analysis & Results:** Samples were assayed by Osprey Biotechnics and an independent third party laboratory. The recovery of probiotic for all Microlife L *Bacillus licheniformis* samples tested exceeded 100% viable cfu/g viable cell count for label finished feed requirement. These results safely demonstrated spore survivability of heat pelletizing process.

**MICROLIFE L Product Label:** Use in feed 1/4 lb . Per ton of complete feed. Contains 2.4E+09 cfu/g resulting in 3.0E+05 cfu/g in final feed.

Sample ID	Independent Lab	Osprey Biotechnics Lab
<b>Label</b>	<b>3.00E+05</b>	<b>3.00E+05</b>
Sample 1	3.70E+05	5.30E+05
Sample 2	3.10E+05	4.10E+05
Sample 3	5.30E+05	3.70E+05
Sample 4	3.20E+05	4.10E+05
Sample 5	3.20E+05	3.90E+05

*“The recovery of viable probiotic cell count for all Microlife L Bacillus licheniformis samples was more than 100%. These results demonstrated spore survivability of the heat pelletizing process and supported DFM performance results in the field.”*

- Osprey Biotechnics



References available upon request. Contact Sean Griffin: [sgriffin@ospreybiotechnics.com](mailto:sgriffin@ospreybiotechnics.com)