

CAN YOUR PROBIOTICS STAND THE HEAT?

A STUDY ON THE EFFECTS OF HEAT PROCESSING ON SPORE FORMING BACILLUS SPECIES



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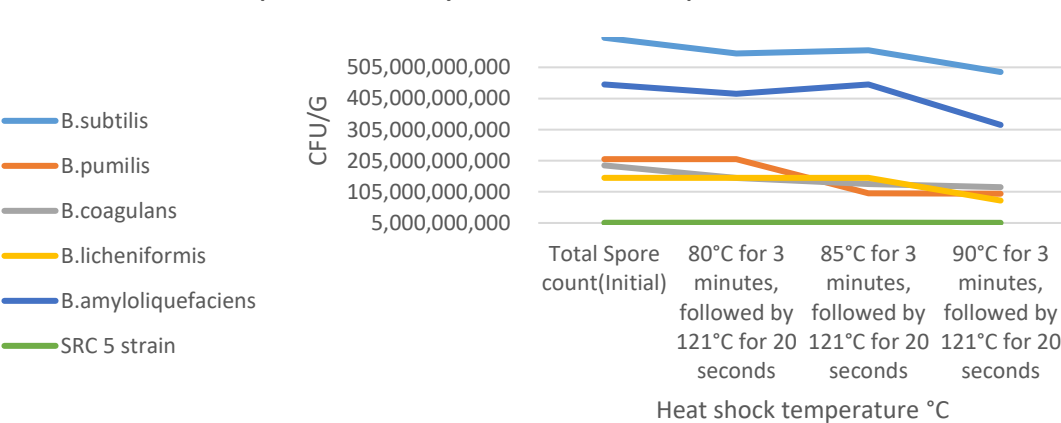
When a pet parent purchases pet food or treats containing probiotics, they might wonder if the beneficial bacteria are still viable after being subjected to processing and sitting on the shelf. Many pet foods and treats are processed at high temperatures, which is required to cook the product, but also kill harmful bacteria. What about the (probiotics) beneficial bacteria? To better understand the effects of heat on probiotics, we subjected the SRC nutritional probiotics (several *Bacillus* species) without a carrier to different temperature ranges at specific processing times. The results of this test demonstrated that the *Bacillus* without a carrier did lose some viability after being exposed to heat. However, the SRC blend containing all five *Bacillus* species on a calcium carbonate carrier declined only 8.3% at the highest

Tests performed by 3rd party Venture laboratories

Method for counts was CMMEF(Compendium of Methods for the Microbiological Examination of Foods)

CFU/gram	Total Spore count(Initial)	80°C for 3 minutes, followed by 121°C for 20 seconds	85°C for 3 minutes, followed by 121°C for 20 seconds	90°C for 3 minutes, followed by 121°C for 20 seconds
<i>B. subtilis</i>	600,000,000,000	550,000,000,000	560,000,000,000	490,000,000,000
<i>B.pumilis</i>	210,000,000,000	210,000,000,000	100,000,000,000	99,000,000,000
<i>B.coagulans</i>	190,000,000,000	150,000,000,000	130,000,000,000	120,000,000,000
<i>B.licheniformis</i>	150,000,000,000	150,000,000,000	150,000,000,000	77,000,000,000
<i>B.amyloliquefaciens</i>	450,000,000,000	420,000,000,000	450,000,000,000	320,000,000,000
SRC 5 Species blend	6,000,000,000	6,000,000,000	6,000,000,000	5,500,000,000

Spore Stability at various temperatures



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