

In Defense Of Bactoferm

Some time ago, author Stan Marianski wrote the following:

"Some eight years ago I stopped at the real Italian deli and saw a great variety of salamis. The owner proudly announced that the family makes all those sausages right on the premises. She even took me inside the kitchen where sausages were hanging in all over the kitchen and the oscillating fan was blasting air at them. I bought different salamis to find out how a real home-made salami compares with sausages I knew. Well, they were really bad, putrefied and all my friends agreed with me. They were simply not edible, too much spoilage. At that time I had a little knowledge about making fermented products and the above incident gave me plenty of motivation to study fermented products in more detail."

Allow me to defend Bactoferm, and then ask readers and members to make up their own minds. Long ago, man discovered that by adding salt to meat, it somehow "preserved" it! It took man literally ages to realize that "binding 'available water' (Aw) in sausage", effectively confines it to the point where harmful pathogenic bacteria are no longer able to survive. The process is known as dehydration or limiting water activity. For centuries, this process, along with the chance or random addition of lactic acid-producing bacteria to increase acidity, has been responsible for safely preparing air-dried, fermented, sausages.

Today, adding carefully chosen strains of lactobacilli or pediococci, reducing the pH acidity to safe levels in fermented sausage has been most effective in destroying competing pathogenic bacteria. Historically, as the sausage maker unwittingly created ideal conditions for competing beneficial bacteria to thrive, pathogenic bacteria were deprived of nutrients by being literally crowded out of the way. By providing optimum temperatures and relative humidity for any number of previously unknown lactobacilli and pediococci bacteria, safe and tasty fermented, air-dried sausages have been crafted by man for centuries. Yet, only since about the middle of the nineteenth century have we known what was actually taking place inside the fermentation process. Without beneficial bacteria declaring war on pathogenic bacteria, we would not have salami, pepperoni, summer sausage, or any number of other tangy, fermented air-dried sausages."

Bactoferm™ is the trade name of bio-protective starter cultures made in Denmark and distributed in Germany by the Chr. Hansen Laboratories for use in the food and sausage making industries. Initially, Americans developed a lactobacilli culture just before entering World War II. Although patents were granted, experimenting continued with pediococcus cerevisiae as commercial food processors preferred using cultures not needing activation from deep freezing. We non-commercial, small home-hobbyist operations had no accessibility whatsoever to such products.

Perhaps the cultures of the 1940's and 1950's were "too effective" as they produced lactic acid so quickly, they robbed other curing bacteria of greatly needed time to develop the milder flavor Europeans have always accepted and actually demanded, even to this day. Consequently, the use of bio-

cultures in fermented sausage throughout Europe, have been minimal. In America, although slow to catch on, the overly sour taste of rapidly produced, dry-cured, fermented sausage has become more accepted as commercial producers offered little alternative to the quickly fermented products to the general public.

In 1957, the bacteria strain known as micrococcus was produced (greatly improving flavor) and became the first real major step in mass-produced salami. Three years later, staphylococcus carnosus was developed and finally in 1966, lactobacillus plantarum was introduced as America's first widely used culture. Food scientists and researchers throughout the '70's continued to improve air-dried meats and sausages by developing multi-strain bacteria cultures. For the first time in history, we had a safe, consistent, and reliable culture containing lactic acid bacteria with the addition of other beneficial bacteria strains. Since that time, research has continued and improvements have been made continually.

So, why do we use bio-cultures these days in making fermented meat products? Safety, reliability, and consistent fermentation in much less time, are good reasons. The guesswork has been removed by the standard addition of up to 10 million bacteria per gram. Harmful pathogenic bacteria competing for nutrition are simply crowded out and finally eliminated.

Yes, although raw-meat, air-dried, fermented sausages have been made relatively safely without it for centuries, today's modern cultures guarantee safety consistently! Best of all, as of late, it has become available to home hobbyists and smaller sausage kitchens in convenient packets at affordable prices.

Best Wishes,

Chuckwagon

Types Of Bactoferm Available:

Bactoferm™ is a trade mark of Chr. Hansen... and it is the very best! I've used it many times and highly recommend it.

Meat Starter Culture Bactoferm™ LHP (Fast: 5.0 pH in 2 days)

LHP is a freeze-dried culture well suited for all fermented sausages where a relatively pronounced acidification is desired. This culture is recommended for the production of traditional fermented, dry sausages with a sourly flavor note.

Each 42-gram packet of LHP will treat 500 pounds (225 kilo) of meat. You can use half of the packet in 100 pounds of meat, and refreeze remaining culture.

Note: Cultures must be stored in a freezer and have a shelf life of 14 days unrefrigerated or 6 months frozen.

Meat Starter Culture Bactoferm™ F-RM-52 (Medium: 5.0 pH in 4 days)

Bactoferm™ F-RM-52 is a freeze-dried culture well suited for all fermented sausages where a relatively fast acidification is desired. The culture is recommended for the production of traditional North European types of fermented, dry sausages with a sourly flavor note.

Each 25-gram packet of Bactoferm™ F-RM-52 will treat 220 pounds (100 kilo) of meat. You can use the whole packet in 100 pounds of meat or use half of the packet and refreeze remaining culture.

Note: Cultures must be stored in a freezer and have a shelf life of 14 days unrefrigerated or 6 months frozen.

Meat Starter Culture Bactoferm™ T-SPX (Slow: Assists with drying a month or more) Also: Semi Dry Cured

Bactoferm™ T-SPX is a freeze-dried culture well suited for all fermented sausages where a relatively mild acidification is desired. T-SPX is particularly recommended for the production of Southern European type of sausages, low in acidity with an aromatic flavor. The culture is suitable for moulded as well as smoked fermented sausages. (Semi Dry Cured)

Each 25-gram packet of Bactoferm™ T-SPX will treat 440 pounds (200 kilo) of meat. You can use the whole packet in 100 pounds of meat or use half of the packet and refreeze remaining culture.

Note: Cultures must be stored in a freezer and have a shelf life of 14 days unrefrigerated or 6 months frozen.

Mold Culture - Bactoferm:Mold 600 (Previously M-EK-4)

Meat culture for production of moulded dried sausages with a white/cream coloured appearance. Mold-600 is a single strain culture containing spores of *Penicillium nalgiovense* in a convenient freeze-dried form.

P. nalgiovense is a fast growing, traditional white mold culture for controlling the surface flora.

Mold-600 is particularly recommended for the production of traditional sausages dried at low temperature and/or low humidity.

Mold-600 suppresses the growth of undesirable organisms such as indigenous molds, yeasts and bacteria. The culture has a positive effect on the drying process by preventing the emergence of a dry rim. Furthermore, the mold degrades lactic acid during maturation resulting in a pH increase and a less sourish flavor.

Note: Cultures must be stored in a freezer and have a shelf life of 14 days unrefrigerated or 6 months frozen.

Bactoferm™ F-LC (Short or Traditional Fermentation Time / Also: Added Listeria protection)

Bactoferm™ F-LC meat culture with bioprotective properties for production of fermented sausages with short or traditional production times. F-LC is recommended for the production of all types of fermented sausages. Depending on fermentation temperature, acidification is either traditional, fast or extra fast. F-LC is a mixed culture containing *Pediococcus acidilactici*, *Lactobacillus curvatus* and *Staphylococcus xylosus* in a convenient freeze-dried form. *P. acidilactici* ensures reliable acidification whereas *S. xylosus* results in strong flavor development and a good, stable color. Due to bacteriocin production both *L. curvatus* and *P. acidilactici* contribute to suppressing growth of *Listeria monocytogenes*.

Each 25-gram packet of Bactoferm™ F-LC will treat 220 pounds (100 kilo) of meat. You may use the whole packet in 100 pounds of meat or use half of the packet and refreeze remaining culture.

Other favorite Bactoferm™ cultures include:

Cultures for fermentation below 75°F. (24°C.)

- T-RM-53.....Slow (European style)
- T-SP
- T-SPX
- T-D-66.....Intermediate
- T-SC-150
- T-SL

Cultures for fermentation from 70°- 90°F. (22°- 32°C.)

- F-RM-52.....Medium (American style)
- F-RM-7
- F-SC-111
- F-1

- FLC (with Listeria protection)
- LP.....Fast
- LL-1
- CSL
- LL-2
- F-2

Culture for fermentation from 80° - 100°F. (26° - 38°C.)

- LHP.....Extra Fast

Culture for fermentation from 86° - 115°F. (30° - 45°C.)

- CSB.....Extra Fast
- F-PA

Culture for fermentation from 90° - 115°F. (32° - 45°C.)

- HPS.....Extra Fast

I've found these cultures to be most reliable. Herein lies the future of safe, uniform, and convenient sausage making! If you'd like to know more, please contact me via pm @ Chuckwagon. I'm always happy to help anyone interested, especially beginners.

Best wishes,

Chuckwagon