



Can Lactobacillus Acidophilus Be Stabilized?

Acidophilus is correctly named Lactobacillus acidophilus, and is one species of Lacobacillus used commercially in the preparation of certain types of yoghurt. The name refers to the fact it is found in milk (lacto), is rod-like in shape like many bacteria (bacillus) and it likes acidic conditions (acidophilus). It not only likes them, but creates them.

In fact, acidophilus thrives at a pH of 4-5 or less, and occurs naturally in the gastrointestinal tract of humans and animals, and also the mouth and vagina. It ferments milk to lactic acid, and dies in the presence of sunlight, excessive moisture and at high temperatures. Some, but not all, strains are probiotic, or 'friendly' bacteria that aid digestion and help to protect against harmful bacteria and their toxic emissions.

The fermentation of nutrients by friendly bacteria produce acids, such as the lactic acid previously referred to, hydrogen peroxide and other substances hostile to harmful organisms, and also reduces the population of harmful bacteria by competing for their food. There are additional health benefits that shall be discussed later, but first some comments about the stability of acidophilus to heat.

The growth rate of acidophilus reaches an optimum at around 36-37F (2.2C), and it tends to die off at temperatures much above this over a period of time. It also tends to be sensitive to oxygen and moisture, and if exposed to heat, moisture and oxygen, a supplement will lose its potency over time. This is true of all such supplements, and after purchase must be quickly refrigerated. It is possible, however, to purchase stabilized forms of acidophilus that die off slower than normal. This extra resistance is built in during the manufacturing process, and many forms of acidophilus claim to be stable. Although there will never be a truly stable form of the probiotic, these stabilized versions do last longer than those not claimed to be so.

During manufacture, the bacteria are first concentrated by removing the excess liquid by means of sedimentation, ultra-filtration, reverse osmosis and centrifuging. A substance is then added to protect the bacteria from the shock of freezing and the acidophilus freeze dried. A stabilizer is then added to maintain its properties between freezing and consumption.

It has also been found that bacteria grown at higher pH levels last longer than those at lower pH. The packaging is also important, and since the bacteria are sensitive to oxygen, nitrogen flushing the bottles will improve the stability of the product. Glass bottles are less porous than plastic, and so is the preferred packaging material for maximum stability



and life. Another factor is refrigeration. If you keep the bottle in the fridge it was last a lot longer than at room temperature, but take care not to freeze it since acidophilus does not freeze well. If it is not refrigerated then it will quickly lose its potency.

The form in which you take the supplement is immaterial regarding the potency: at least initially. However, through time the powder will become less potent quicker, because it will adsorb oxygen and moisture. Otherwise the form in which it used is immaterial. So, yes, acidophilus can be stabilized, but only for a while, and if allowed to warm up to room temperature in the presence of oxygen will quickly degrade, although this takes more than just a day or two.

Many health benefits are claimed for *Lactobacillus acidophilus*, although your daily consumption to achieve these should be at least 2 billion CFU, and preferably 5 billion. You can also fortify the bacteria with a prebiotic of fructooligosaccharides (FOS). These provide nutrition for the acidophilus and accelerate its growth.

One thing to be careful of is assuming that yoghurt contains acidophilus. It does not contain sufficient to be of benefit to you. Commercial yoghurt acidifies over time and kills off the bacteria, so commercial yoghurt sitting on a supermarket shelf has very little beneficial bacterial content. Natural yoghurt is better, and certainly contains beneficial bacteria, but not enough to make a significant difference. A supplement is therefore needed if you are to keep your intestinal tract sufficiently healthy. If you cannot take dairy products, acidophilus is available in non-dairy form. The major health benefits they impart are:

1. Digestive Problems.

Acidophilus can control many types of digestive disorder, particularly traveler's diarrhea. In fact if you are traveling to countries where drinking water might be a problem, also take some acidophilus and this will tend to prevent you from becoming ill. Even if you drink bottled water, there are still washed salads, beverages made with local water and showers and the like whereby you could ingest some dodgy water.

2. Constipation

Acidophilus, especially when supported by FOS, helps both to hydrate the feces, and improve their transport through the colon, an also to improve the general health and well-being of your entire intestinal system.

3. Yeast Infections (Candidiasis)



Acidophilus possess antifungal properties that kill off yeasts, particularly *Candida albicans* found in the vagina. This is due to the lactic acid produced by the bacteria, and there is evidence that gastrointestinal yeasts are affected in the same way by the oral probiotic. Furthermore, when bacteria and yeasts are killed off by medication, including friendly bacteria, the sites they occupied on the intestinal walls become free and acidophilus should be present to take these up and prevent any more yeast or bacterial infections. That is one reason why probiotics should be taken immediately after a course of antibiotic treatment.

4. Immune System Support

Lactobacillus acidophilus is believed to modify the balance of microbes in the intestine so as to lead to an enhanced production of antibodies, and white blood cells with increased phagocytic activity. The bacteria also appear to have some reducing properties, which can also give support to the immune system through the resultant antioxidant properties.

However, by far the most important property of probiotics are their properties in acidifying the intestinal tract, and so rendering them less attractive to harmful pathogens, and in producing hydrogen peroxide which has a similar effect. They also produce natural antibiotics, and there is now doubt that a supplement of acidophilus will provide you with several health benefits and also make you feel fitter and more alert.

Many Heat Stable Brands Of Acidophilus Are Available



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