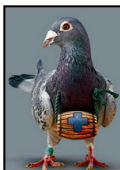


## I. LOSS OF HEALTH

2. Can garlic and probiotics be used together? I thought garlic was a natural antibiotic and would kill the probiotic bacteria.



*Maybe you will think: what a trivial question!  
One that can't be of any significance...  
If you think that, you are probably wrong.*

We can use plant extracts like the alkaloids of garlic or the active ingredients of oregano. These substances **affect bacteria directly**, just as antibiotics do, killing them or preventing their proliferation.

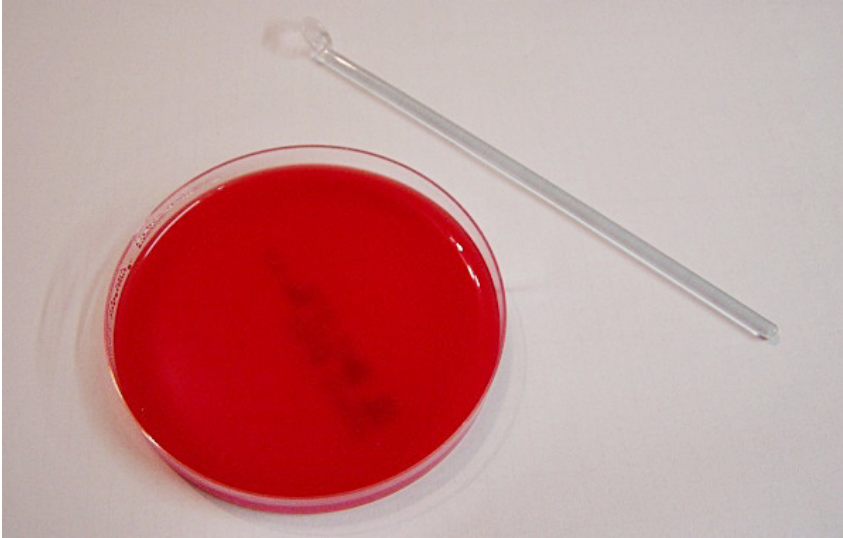
The main alkaloid of garlic is allicin. Allicin has a strong antibacterial effect against e.g. streptococci, staphylococci, pseudomonas and coli. It has an antiparasitic and antifungal effect, as well. These bacteria and parasites have certain enzymes that contain sulphur – the allicin, destroying these enzymes, can kill bacteria and parasites. Allicin destroys the enzymes of beneficial enterococci, too, thus **depopulating bowel bacteria**.

In addition, active ingredients of garlic help digestion, thus preventing the development of illnesses caused by undigested foods. They boost the immune system and neutralize the free radical scavengers so that they strengthen the whole body. It is not accidental that the methodical use of garlic extract increases the yield of chickens and other poultries by about 10%. It is very important, as garlic is a natural substance, and so in many cases we can avoid the use of antibiotics.

But, like anything else, garlic can be overdosed. In too great quantities garlic destroys the majority of beneficial bowel flora and can cause a sterile inflammation in the intestinal canal. So overdoses of it should be avoided.

Keeping all these considerations in mind, in my opinion it is beneficial to **give probiotics after using garlic**.

I conducted a simple laboratory experiment for this topic. I took a culture medium used to make bacteria grow, a slice of garlic, one drop of pure water and a very little amount of a certain probiotic containing several strains of beneficial intestinal bacteria.

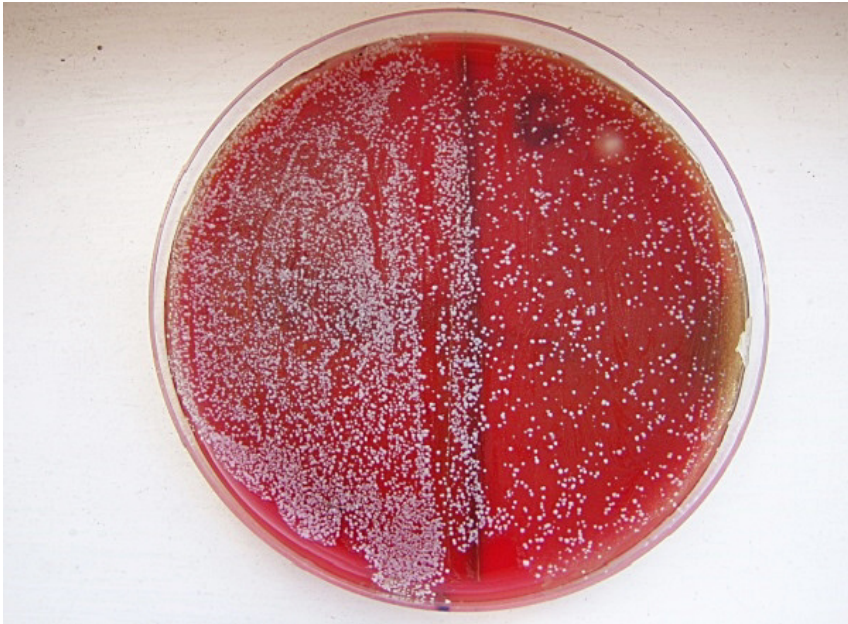


**Figure 2.1: Petri dish with chicken blood agar.**  
(Photo: Zsolt Talabér)

On **Figure 2.1** there is a Petri dish that is a special cell culture plate. (Its diameter is about 10 cm.) In the dish, there is blood agar – a gelatine-like substance mixed with chicken blood. Most of the bacteria can multiply quickly on blood agar, which is maintained at a stable temperature of 37 degrees Celsius in an incubator.

A glass rod is in the photo next to the dish. We use these glass rods finely to spread a drop of the sample over the surface of agar.

So, I took a tiny bit of the probiotic, dissolved it in a drop of pure water and spread this drop over the **whole** surface of the blood agar. Then I took the slice of garlic, squeezed a little drop juice from it and spread this drop of garlic over **half** of the surface of blood agar (on the right side of it). I then placed the Petri dish into an incubator for a day – to allow the bacteria to multiply.



**Figure 2.2: The alkaloids of garlic can destroy the beneficial bacteria, too. (Photo: Zsolt Talabér)**

On **Figure 2.2** you can see the result of this bacterial culturing. The countless little white dots are the colonies of bacteria – each colony the size a pinhead contains about one *billion* bacteria and every colony really did emerge from *one* bacterium (in the space of a single day!). These are beneficial bacteria, of course, since they descend from the probiotic.

No question, on the right side of the blood agar there are **far fewer bacterial colonies** than on the left side. So we can infer that **the alkaloids of garlic block the growing of beneficial bacteria of probiotic** and/or kill a lot of them.

This probiotic contains several strains of beneficial bowel bacteria: Lactobacillus acidophilus, L. casei, L. lactis, L. bifidus and Enterococcus faecium. I think that, of these, one or two strains are resistant to alkaloids of garlic. The garlic cannot destroy them, so they are able to survive and even multiply.

This little experiment has demonstrated that:

- the alkaloids of garlic do indeed kill a large amount of probiotic bacteria,
- if we use a probiotic that contains several different strains of bowel bacteria, the odds are that some strains among them are resistant to garlic, so they survive the alkaloids of the garlic and are able to multiply in the bowel.

What can we do?

- ask our vet to make a laboratory test with the probiotic(s) we use
- if the garlic kills our probiotic(s), or we cannot make such a laboratory test, **we should not use probiotic and garlic together**
- if the bacteria of our probiotic are resistant to garlic, we can use them together
- if alkaloids of garlic kill some strains of bacteria but other strains survive (as in our case), we can use them together, but afterwards we should give extra probiotic

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Maybe you will say that this is all very interesting but does not have too much importance. If you say that, I am afraid you are wrong.

If we give garlic to the pigeons once a week, the alkaloids of garlic will kill some strains of beneficial bowel bacteria, so for a short while there will be slightly fewer beneficial bacteria in the intestinal canal. And then?

Indeed, it does not seem to pose so great a threat, but let us do a bit of calculation! Suppose that the efficiency and the *speed of digestion* will decrease one or two per cent because of the destruction of useful bowel bacteria – only one or two per cent. If the digestion and the motility of the bowel become slower, the amount of remaining excreta will grow a little – only one or two per cent – that is about half a gram (about 1/60<sup>th</sup> of an ounce). The racing pigeon's weight will be more by half a gram.

And then? What is half a gram?

Half a gram... Let us imagine a ten thousand metre athletic race. A runner is about 72 kilograms and he is running ten kilometres. The

pigeon is 400 grams and it is flying about 900 kilometres – with a half gram extra weight in its body. What extra weight should the runner carry in order for the pigeon not to be at a “disadvantage”? In other words: what extra weight would represent a proportional burden on the pigeon?

72 kilograms =  $180 \times 400$  grams, i.e. the runner’s weight is 180 times more than the weight of the pigeon. So, if the pigeon carries an extra half gram of weight, the runner should carry  $180 \times 0.5 = 90$  extra grams. Only 90 grams, that is three ounces – not too much, at all, for a man...

Well, a long racing pigeon flies much further than the man runs: about 90 times further. 90 grams carried 90 times further = this is 8.1 kilograms (17.82 lb)! What chances does a long-distance runner have with an 8-kilogram dumb-bell in his hand?

In this book, you will find several analogous samples and cases. For example, vitamins given at the wrong time increase the weight of the pigeon – even by several grams, not just half a gram! Certain antibacterial agents disturb the water balance of the pigeon’s body – and it can become overweight, too. Or, on the other hand, if we choose the wrong treatment and because of this the pigeons will drink less water than necessary, a fiasco is guaranteed, too.

**The champion of the future will be the fancier who manages his or her loft with the most accuracy. Using a lot of medicines in a routine way is anything but accurate.**

**In long run, grams become kilograms and milliseconds become minutes – the very minutes needed for success... This book helps you gather up the crumbs of knowledge.**

*Zsolt Talaber*

Note

The alkaloids of garlic are natural substances and though they destroy larger or smaller part of beneficial bowel bacteria, they do not represent an extra burden on the body of the pigeon – quite the contrary, they strengthen the immune system.

The situation is quite different in the case of antibiotics. The **antibiotics are like the heavy armour on a knight**; if it is well-selected, the antibiotic is able to protect the system from pathogenic bacteria, but at the same time it represents an **extra burden** on the body. Yet if we must to send the knight into battle, it is very useful if he wears these heavy pieces of armour – he will not win a running race in them, surely, but he will at least survive.

The situation is even worse if we have chosen a wrong antibiotic that cannot destroy the enemy, since the pathogenic bacteria already have resistance against it. The pathogenic bacteria do not perish but multiply, the body is suffering from illness **and** from the extra burden caused by the antibiotic – the knight carries heavy armour that is good for nothing. Rather than get better, the pigeon find itself in an even worse state after treatment with the wrong antibiotics. Such a treatment has nothing but disadvantages: the racing pigeon has no chance of winning, and only a little chance of returning home.

Naturally, there *are* antibiotics that we can use in racing season. These performance-friendly antibiotics do not represent too strong a burden either on the pigeon body or on the beneficial bowel flora. But there are not too many such antibiotics and **we must use them extremely precisely**, causing as little burden to the system of our racers as possible.

**Tip: During the racing period, every good treatment counts double – and every error counts tenfold. Be as accurate as you can be.**



**Tip: Do not give garlic just before races. Use garlic on Monday or Tuesday and afterwards give a probiotic– or, even better, a mix of probiotics.**



*Parallel themes in this book:*

26. Bacterial culturing at home
34. Differences between bacteria and viruses
35. Differences between probiotics, prebiotics and antibiotics
38. Gentamycin
39. Spectinomycin in racing season