



focus on
DOSTO

Rabbits

commercial and hobby breeding



Next to the main livestock species for meat production, rabbits are gaining interest.

Rabbits convert cellulose-rich plants into high-value animal protein, being an **efficient production system**: rabbits can turn 20% of the proteins they eat into edible meat. Comparable figures for other species are 22-23% for broiler chickens, 16-18% for pigs and 8-12% for beef.

Furthermore, next to the **commercial** production, **hobby** breeding is a growing market not to be forgotten.

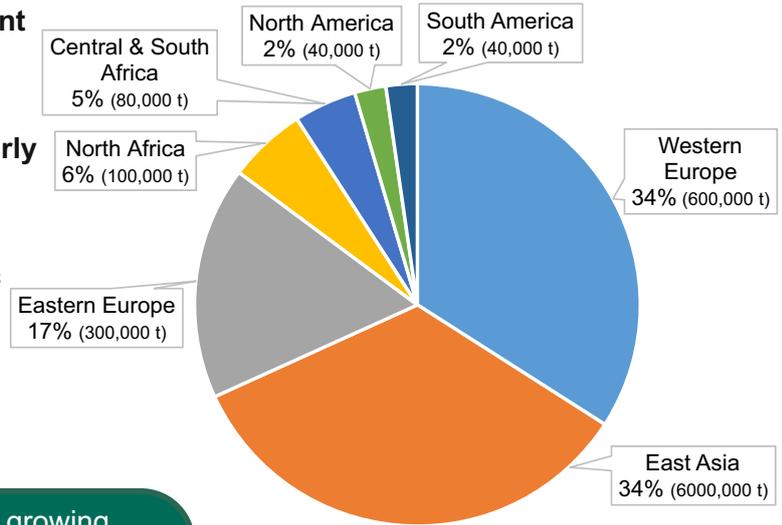
In the following pages, you will learn the importance of the rabbit production worldwide, some basics about their digestive system and how **DOSTO®** **Oregano** can improve the performance and prevent digestive problems.

Rabbit production in the world

The countries producing rabbit can be divided into 6 groups:

1. **Production for national consumption:**
Italy, France, Spain, Belgium and Portugal
2. **Production for export and with a significant national consumption:** China
3. **Production for export and without a significant national consumption:**
Hungary, Belgium and Netherlands
4. **Production undergoing rationalization, primarily for domestic consumption:**
Central or Eastern European countries
5. **Traditional production, primarily for domestic consumption:**
Philippines, Egypt, Marocco and Mexico
6. **Hobby rabbit breeding:**
USA, Germany and the United Kingdom

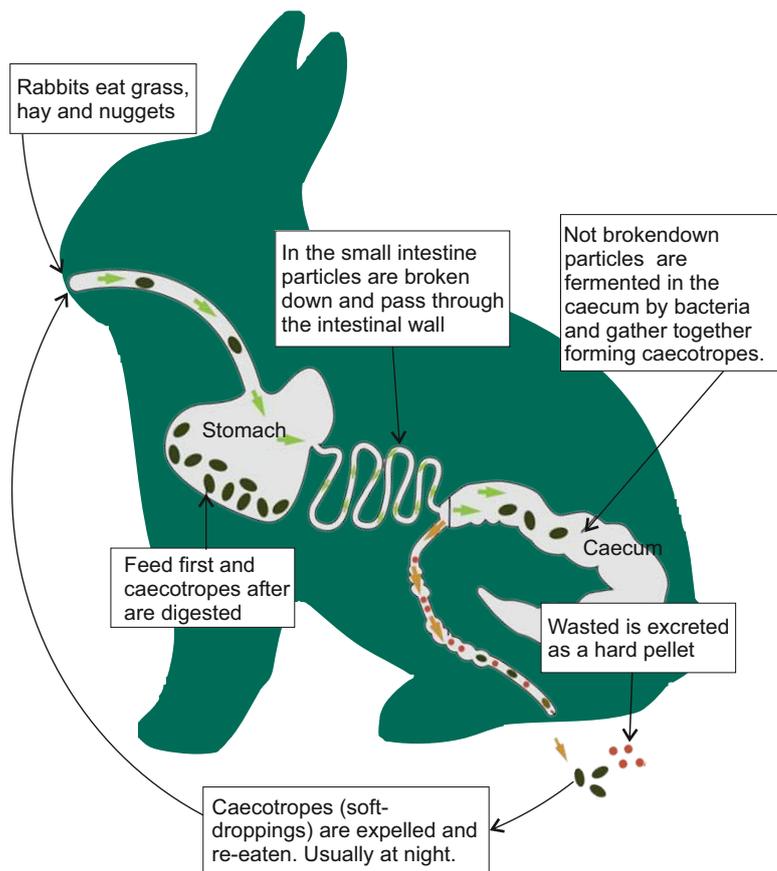
Rabbits are the **fourth-most farmed** species after beef, swine and poultry. In the graphic, you can see the main rabbit meat producers in the world.



Rabbit meat production in the world
tonnes of carcasses per year (Lebas 2009)

The **hobby breeding** is an strong and growing industry. As an example, in Europe the rabbit meat market has a value of \$645 million while in the US the rabbit pet supply industry generate \$612 million.

Rabbit Digestive System



Commercial or as a hobby, one of the most interesting aspects of a rabbit's breeding is their **digestive system**.

Rabbits are herbivores and can process and extract nutrients from many plants that are indigestible to other species.

They have developed a strategy for dealing with this called "**hind gut fermentation**": cellulose is digested with the aid of symbiotic bacteria.

In order to use the nutrients degraded by the bacteria, the rabbit needs to digest them one more time. With this purpose material from cecum is formed into **small moist pellets** called caecotrope. Once excreted, the rabbit will eat them, providing additional nutrients.

Supporting the rabbit's digestive system with DOSTO® Oregano

The major cause of disease, mortality, and economic loss in rabbits is an infection in the intestinal tract, generally called enteritis.

Depending on the bacteria causing the infection, we can differentiate the following pathologies:

- **Enterotoxemia:** sudden and acute diarrhea often in 4-8 week old rabbits. It is caused by *Clostridium perfringens*, *Clostridium spiriforme* and *Escherichia coli*.
- **Colibacillosis:** common bacterial disease in young rabbits, caused by *Escherichia coli* in the small intestine and caecum.
- **Coccidiosis:** caused by the protozoal parasite *Eimeria ssp.*, is a highly contagious sporozoal infection.

Producers and breeders face the challenge of reducing animal losses while minimizing the application of antibiotics.

In vitro

Several *in vitro* studies have asset the antibacterial effect of DOSTO® Oregano against the pathogens responsible of enteric diseases in rabbits.

The table 1 shows the **Minimal Inhibitory Concentration** (MIC) of DOSTO® Gold 500, which contains 50% DOSTO® Oregano essential oil.

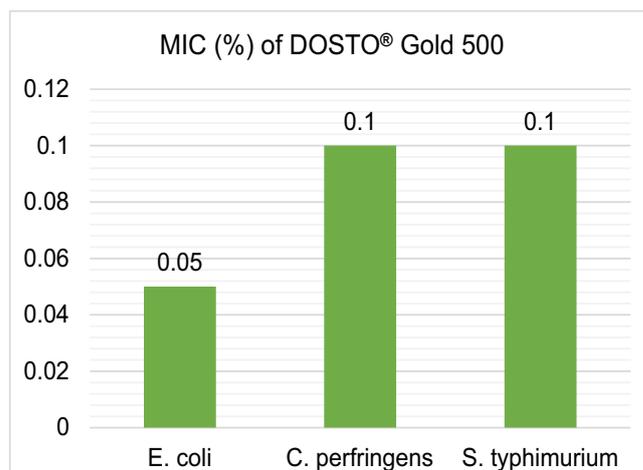
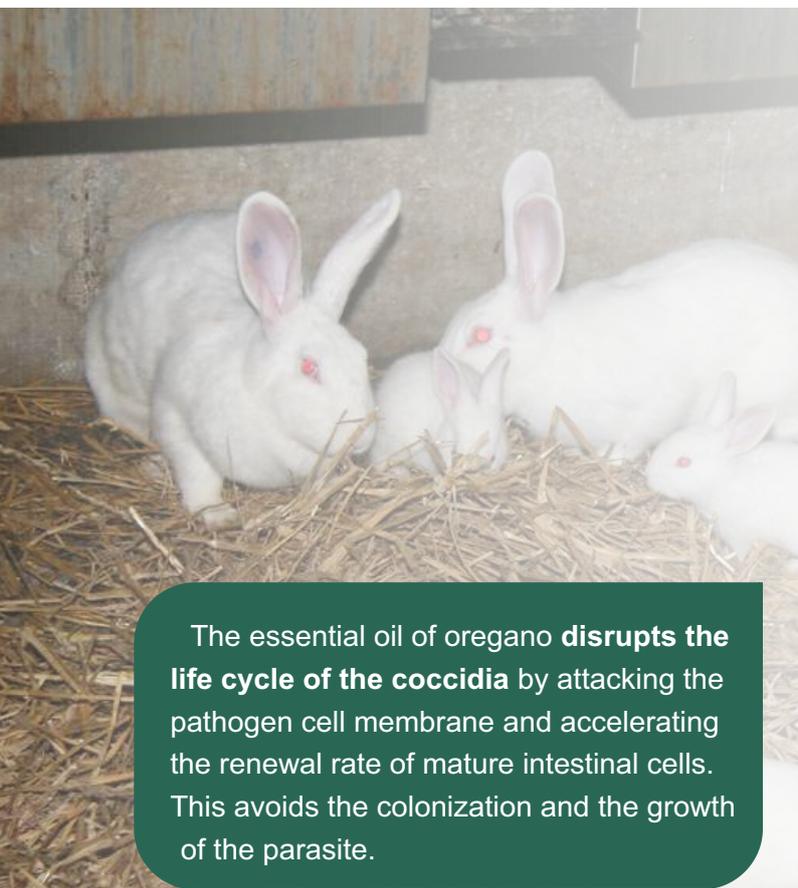


Table 1: Antibacterial effect of DOSTO® Oregano against important bacterial pathogens. (Zentek *et al.*, University of Berlin, 2017)



The essential oil of oregano **disrupts the life cycle of the coccidia** by attacking the pathogen cell membrane and accelerating the renewal rate of mature intestinal cells. This avoids the colonization and the growth of the parasite.

In vivo

A trial, conducted at the Humboldt University Berlin, tested the antibacterial, immunostimulating and appetite-inducing effects of DOSTO® Oregano on mortality and performance of fattening **rabbits with a coccidial infection**.

Trial design

600 rabbits (ZIKA breed) were kept after weaning in sheds with 2-stage cages (3 animals per cage). Half of the animales were fed with DOSTO® Oregano in the pellets., the other half got pellet fed without DOSTO. The trial was conducted from 1 week before to 6 weeks after weaning.

Results

DOSTO® Oregano reduced the mortality by 6%, improved the weight gain by 5.4% and improved the feed conversion (Control: 3.98; DOSTO: 3.46).

Breeder's statement

“ Last year I lost nearly all of my rabbits through enterocolitis. The *Clostridium perfringens* infection was confirmed by the Veterinary Institute of Hannover (TiHo). Looking for alternatives, I came across DOSTO® Liquid, a water-soluble oil of the oregano plant.

My rabbits have been consuming DOSTO® Liquid as a preventive measure every day for 8 weeks now and so far I have had no further losses. DOSTO® Oregano essential oil seems to me to be an alternative that avoids using conventional medication.

Burkhard Grünzel, German rabbit breeder

Do you have any question about **DOSTO® Oregano** and its use in rabbit breeding?

Contact us! mail@dostofarm.de

