

ANIMALS AND MONEY

This part of BioSReports unravels interesting relations between animals and the economy.

Luxurious Fibre - The Economic Value of Angora Wool Rabbits

Emma Markwardt

With "Project Angora" the Nazis kept nearly 65,000 angora rabbits in more than 30 concentration camps like Dachau and Auschwitz. By 1943 the rabbits were producing more than 4,500 kg of wool. They had their own elegant hutches, scientifically prepared meals, and some of the best veterinary care possible. The cruelest thing about "Project Angora" is the fact that right next to the luxurious hutches of the rabbits, thousands of people were crammed together and brutally murdered. This underlined how little human lives were valued by the Nazis. But why would the Nazis want to use rabbit wool and what role does it play today?

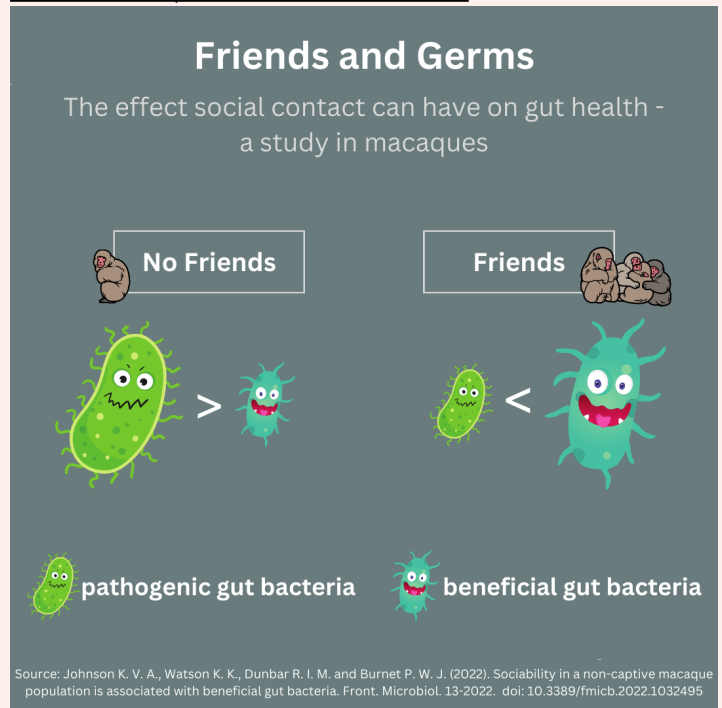
Angora rabbit fibre is a medullated fibre, which means that its internal cells are air filled. This makes angora hair heat-retaining and very light. The fibre is odorless and hypoallergenic, making it ideal for textile end uses. As medical fabric the wool can be used as thermal underwear, in hospital blankets and also as a palliative for arthritic conditions and joint pains. Angora wool also had and still has a very luxurious reputation. The Nazis therefore used the wool for uniforms of SS officers.

Angora wool today is still considered a high-quality fibre. Angora rabbits produce a lot of wool for their size, especially compared to commonly used wool sources like sheep. The amount of wool that can be taken from Angora rabbits depends on age, sex, and wool collection method. However, wool harvest is often done in a brutal way, only to produce wool faster and more cheaply for us humans.

Wool of Angora rabbits is harvested mainly by plucking or by shearing. Plucking on commercial Angora farms is often done by pulling out small tufts of wool at the hair tips. This method is done three to six times a year and provides the longest wool fibres. This process is painful to the animals. Shearing can be performed every three months (harvest intervals). It produces less valuable shorter wool fibres but a greater yield per year. Shearing takes eight to ten minutes per rabbit and is therefore not only relatively fast, but also less painful for the animal than plucking. Over 90% of the world's Angora wool is produced in China. In 2000, around 8000t wool were produced worldwide. The Chinese rabbit wool is mainly exported to Europe (Germany, Italy, Great Britain) and Asia (India, Japan, South Korea). The most recent price of Angora wool (which cannot really be generalized since different breeds produce different quality fibres and therefore the cost varies) ranges from 35 to 260 USD per kilo. With an annual production of 8000t Angora wool worldwide, a turnover of 280,000 to 2,080,000 USD would be generated. Depending on the breed, an Angora rabbit produces between 350 and 1,000 g wool per year. With a lifespan of three years and an average price of 147 USD per kilo, the value of one individual Angora rabbit would be somewhere between 154 and 441 USD. An average Angora rabbit has a lifespan of five to eight years if treated well. On commercial Angora rabbit farms, which mainly sit in China, the lifespan is often shorter. The most important indicator for profitability is the feed intake-to-wool production ratio. A paper from 2019 calculated this ratio for the harvesting intervals of Angora rabbits and identified that only the first 13 harvest intervals are profitable. With older age the animal gradually produces less wool and after harvest interval 13 farms would lose money on the upkeep of older rabbits. This would mean the upkeep of rabbits is only profitable for the first three years of their life, assuming that harvesting is done every three months. Therefore, commercial rabbits are killed after around three years. Even though Angora rabbit fibre has some superior characteristics compared to other animal fibres, the harvesting process is disputed. Animal welfare concerns increased when PETA released a disturbing video in 2013, showing how poorly the animals were housed and handled on commercial farms in China. This showcase of animal cruelty also had consequences for the economy: big fashion labels responded to the scandal by stopping the use of Angora fibre for their clothing. In conclusion it can be said that Angora rabbits produce extraordinary wool with some advantageous characteristics and are therefore absolutely justified on the wool market. However, the welfare of commercial animals should always be considered when buying Angora wool products.

INFOGRAPHIC

A Social Life Improves the Gut Microbiome



Recent research on the gut microbiome of macaques shows that frequent social contact with other macaques increases the amount of beneficial bacteria in the gut while less social animals show more pathogenic bacteria. These results support the idea that as primates, we evolve in a social world and a microbial one simultaneously. As a society that is moving more towards online interactions rather than real-life ones, being aware of the health impact must be a topic of concern.

Graphic: Cosima Sagurna, Rodrigo Calderón, Helen Rothfuß | Text: Cosima Sagurna, Rodrigo Calderón

EXCURSIONS AND OTHER NEWS

Small insights in student's or professor's points of view, field trips, and other stuff we do.

Genetic Wildlife Forensics – Lab Rotation

Birte Martens

Genetic techniques, such as DNA fingerprinting, have become a staple in forensics over the last several decades. With these techniques we can clearly match a sample to a person and use it to identify people. Alongside this development, forensics has also expanded to include non-human DNA. One example is wildlife forensics.

In Germany, this is often used to determine whether an animal attack was caused by a wolf or a dog, because in the former case livestock owners may have a right to reimbursement. With wildlife forensics we can find out if a wolf is the one to blame or a different animal. It is also possible to distinguish whether this exact wolf individual had been responsible for different attacks in the past. The ForGen laboratory in Hamburg analyzes DNA samples from animal attacks, but also a variety of other DNA samples. Predators most relevant to livestock in Europe include wolves, lynxes and brown bears. An array of repeating DNA sequences, called short-tandem-repeats (STRs), can be used to determine the biological family of an animal or to distinguish individuals. Those STRs vary among individuals and can be used as a genetic fingerprint. During my time at ForGen, I tested a specific method that enables classification of DNA samples as canine, feline, or ursine, to quickly identify the predator involved in the attack. I was able to successfully determine which family the DNA donor belonged to, so the next step was to start expanding the method for analysis. Other local predators, such as mustelids, raccoons, or wild boars, could be included, enabling analysis of a wide array of samples from wildlife. In addition to this research, we had to analyze a lot of routine and not-so-routine samples. While the majority of samples were for human paternity testing, dog breed analysis, or from animal attacks, the lab also received toothbrushes, underwear, and even a bloody machete which was examined for human DNA! Every day was exciting, since we never knew what was going to arrive in the mail.

