



Clean Solutions for a Dirty Problem

About Us

BIORoxx GmbH was founded in December 2019 and develops environmentally friendly rodenticides that allow wide, simple and harmless use. The first product to be developed is a rat poison. Later, the development of poisons against mice and other rodents is planned.

The team of BIORoxx GmbH is broadly positioned and has the required expertise in almost every field. The further required know-how, which is not directly available in the team, is achieved through consultants and partners.

Rats

Rats are everywhere in the world. They sit in houses, in gardens, in sewers, in grain silos or even in stables. They wreak havoc on infrastructure while destroying and polluting 10-25% of crops, seeds and animal feed worldwide with their droppings. Even more problematic are the very dangerous diseases and epidemics transmitted by them or their parasites. Those diseases include the plague, hantavirus, Lyme disease, SARS, and typhoid fever.

However, rats also transmit diseases to other animals. These include foot-and-mouth disease and swine fever, which have led to the increased use of antibiotics in factory farming. At present, there are an estimated 3-4 rats per person in the world, which means that there are about 30 billion rats globally- in Germany alone there are 500,000,000 of these rodents. This is a huge problem that is getting worse every year.

The Rat Poison Problem

Globally, attempts are being made to prevent the proliferation and spread of rats with poisons (so-called rodenticides) in order to reduce their populations.

Rats are largely resistant to the 1st generation rodenticides (anticoagulants) currently available for rat control. The 2nd generation rat poisons are not only partially ineffective, they are also extraordinarily toxic and highly polluting, poisoning the environment severely. These toxic substances accumulate in the soil and water and are not degradable in sewage treatment plants. Thus, according to the studies of the Federal Environmental Agency Germany, residues of rat poisons reach the human food chain due to the consumption of water and fish. All of this extremely limits their possible uses. They may only be used by professionals, in closed rooms and not outdoors. The 2nd generation rat poisons are subject to the strictest conditions: Thus, application in sewers is not allowed. In some countries (California, Australia, New Zealand, etc.) these poisons are already completely banned. Another problem is the high cross-toxicity for other animals and also humans: When scavengers, e.g. birds of prey, foxes but also domestic animals, eat the killed rats, they can get poisoned themselves and die.

The Necessity

According to the Federal Environment Agency Germany, an environmentally friendly rat poison is an urgent, as of yet „unmet need“! Thus, such a rat poison would have very interesting economic prospects in addition to a very positive ecological and social contribution. A true game changer!

Our Solution

The rodenticide under development by BIORoxx GmbH combines all desired properties:

- High efficacy
- Good environmental compatibility
- Exclusion of resistance formation
- Harmless consumption of the poisoned rats for other animals
- Almost harmless consumption of the poison for other animal species
- Poisoned rats die quickly and painlessly

Profitability and Finances

The global market size in 2021 for rodenticides was approximately US\$5.15 billion (Germany US\$545 million). According to Research + Market, growth rates of at least 5% per year can be assumed. This means that the global market will reach a size of US \$ 7.24 billion by 2028.

All rat poisons currently available in Germany have only temporary approvals that will not be extended as soon as an environmentally friendly product becomes available.

This means - at least temporarily - a unique position in the German and European market. Due to the outstanding properties, the worldwide increasing environmental awareness and the much broader application possibilities, strongly increasing sales figures can be expected. Another special feature is that it could also be sold to non-specialists (with significantly higher margins).

For the further development of the product up to the possibility of the market entrance there are still investments at a value of 3.7 million € in altogether 3 financing rounds needed. With a staggered market entry of a first product around the end of 2023, the break-even can be reached shortly after market entry. The final product could be approved by 2026. Immediately thereafter, market entry would take place.

Sales Strategy and Patents

The initial goal of BIORoxx GmbH is to develop the novel and sustainable rodenticides until both the active ingredients and the products are approved by the European Chemical Agency (ECHA). Subsequently, market entry is planned. Here, a staggered approach according to regions makes sense. Thus, the first step is to aim for approvals and market entry in the EU, Australia and New Zealand. Initially, a first product will be developed to market maturity, which, although significantly more environmentally friendly than the existing ones, does not yet have the final properties. However, this will enable further development to be financed from the company's own resources.

Patents have been applied worldwide - patents have already been granted in Australia, Canada, Israel, Mexico, Brazil and Korea. Confirmation of the active principle has been achieved through the successful „proof of concept study“ in January 2020.

Achievements



BIORoxx GmbH was able to succeed at the business plan competition of KUER (Climate, Environment, Energy, Resources) on behalf of the Ministry of Environment NRW 2021 and won the second prize.

In 2022, it will represent the state of NRW at the stand of the NRW Environmental Industry Competence Network at the Hannover Messe.