



## Let's move forward together

While farming is the biggest job on earth, farmers are not facing the challenge alone. We support productive, sustainable agriculture, allowing farmers to protect the land they hold in trust for future generations while meeting the demands of modern society.

We pledge to:

- Invest in the right solutions to enable farmers to grow more quality food, more efficiently.
- Share our expertise to help farmers to make a better life for themselves and their communities.
- Never compromise on safety to allow farmers work in a safe environment and produce safe, healthy food.

In everything we do, we will play our part in leaving a positive environmental inheritance.

We stand shoulder to shoulder with farmers. Together, we will move forward on our journey.

## Egg-Injection Test Supporting animal welfare

- We develop safe, effective products

We work to develop safe, effective products that have no harmful effects on humans or environment. The registration process for new crop protection products is rigorous – and rightly so – with a battery of detailed tests carried out by scientists.

### Global Ecotoxicology at BASF Crop Protection

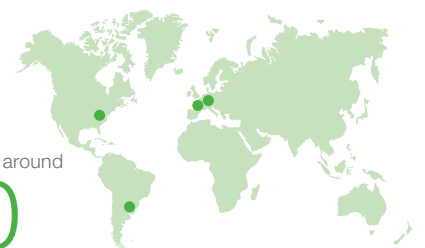


**Aquatic organisms, Terrestrial organisms and Birds & Mammals**

are the 3 key areas at the Ecotoxicology unit

~ **800** studies  
are conducted per year

A team of around  
**40**  
scientists



**4 sites**

in Raleigh/U.S., Sao Paulo/Brazil, Lyon/France, Limburgerhof/Germany

- The importance of bird testing

Crop protection products are extensively tested for effects on birds and other groups of animals. Careful testing is required to ensure that there are no harmful effects, especially on the hormonal system. While specific standard testing is available for mammals, fish and amphibians, up until now, there has been no equivalent test for birds.

“The egg injection test is a significant development that could provide fast, and cost-effective screening during the early phase of compound development. It helps to address uncertainties in risk assessment without any animal testing. I would describe it as a win-win solution.”

Andreas Ufer, Head of Global Ecotoxicology at BASF Crop Protection

### ■ Current status

Typically, one-generation bird studies are conducted that lack specific details with regard to endocrine toxicity, leading to potential gaps in the risk assessment. Meanwhile, the only new test under development is a very complex bird study over two generations, which costs thousands of bird lives while the outcome is often inconclusive.



The scientists at BASF: Maike Huisinga, Burkhard Flick, Sabine Zok, Lennart Weltje and Nicole Kreling

### ■ Innovation, led by our employees

Determined to address this gap, our experts worked with the Goethe University of Frankfurt am Main to design an endocrine test methodology for birds that was fast, reliable, cost-effective and did not involve animal testing.

### ■ Contribution to animal welfare

The end result ticks all the boxes. Instead of using up to 4,000 birds, the Egg Injection Test uses only 120 eggs. While the test is not a product or service directly used by farmers, it nonetheless makes a real and meaningful contribution to animal welfare and sustainable agriculture.

At BASF, we foster a culture of continuous improvement where employees are empowered to fix problems and develop innovative solutions. This successful cross-functional project was entirely employee-led and carried out as part of the team's regular day-to-day responsibilities.

### ■ How the Egg Injection Test works

- The fertilized egg is injected with the relevant substance and develops for a few days before hatching.
- During this incubation period, researchers carefully monitor embryonic development.
- The pathology team evaluates whether the substance had an effect on various parameters like survival, growth and gender development.



## CONTACT

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