

Micronutrition & Health Solutions

Technical Article

Proviox™*: Support Healthy Performance

Balance rising feed costs and optimize performance with Cargill's Micronutrition and Health Solutions business – the answer to helping you and your animals *thrive*.

Cargill's Micronutrition and Health Solutions (MHS) supports farmers and feed formulators by providing innovative feed solutions that are precise – the right product, at the right time, and in the right amount. This dedication helps stakeholders navigate industry challenges in a competitive market. This article will briefly examine how oxidative stress in animals and the volatility of vitamin E prices in the market uniquely challenge the industry and highlight how Cargill mitigates these issues with its scientifically proven Proviox™ 50 solution.

Challenges in the industry

The industry is challenged to support animal health and performance, and to manage fluctuating feed costs.

Oxidative stress and how it affects animal performance

Animal health and performance is impacted by oxidative stress. Oxidation is a natural condition in the body where reactive oxygen species (ROS), also known as free radicals, are produced. These can harm animals if present for too long or in high concentrations, causing oxidative stress. When an animal is under oxidative stress, free radicals can react with its cells, such as immune or tissue cells, negatively impacting their function.

In farm animals, this can be amplified by genetic and environmental factors. Genetically, animals selected for elevated metabolic rates and better performance are more prone to inflammation and the oxidation process.

Environmental factors like higher population densities on farms, reduced medication programs, and extreme weather contribute to increased stress. These conditions increase the production of oxidants and elevate oxidative stress.

If not managed with antioxidants, high concentrations of free radicals or prolonged periods of oxidative stress can cause significant damage to animals.

Rising feed cost

The price volatility of vitamin E, a crucial antioxidant, negatively affects feed costs. Supply disruptions and increased demand have, at times, seen prices triple to put pressure on profitability. Therefore, finding a solution that can mitigate oxidative stress and reduce feed costs is essential for thriving in the market.

Introducing Proviox™ 50

Proviox™ 50, developed by Cargill, is a unique formulation of high-quality plant polyphenols designed to support animals throughout their lifecycle, especially during challenging production phases. It is safe, stable, and suitable for multiple species.

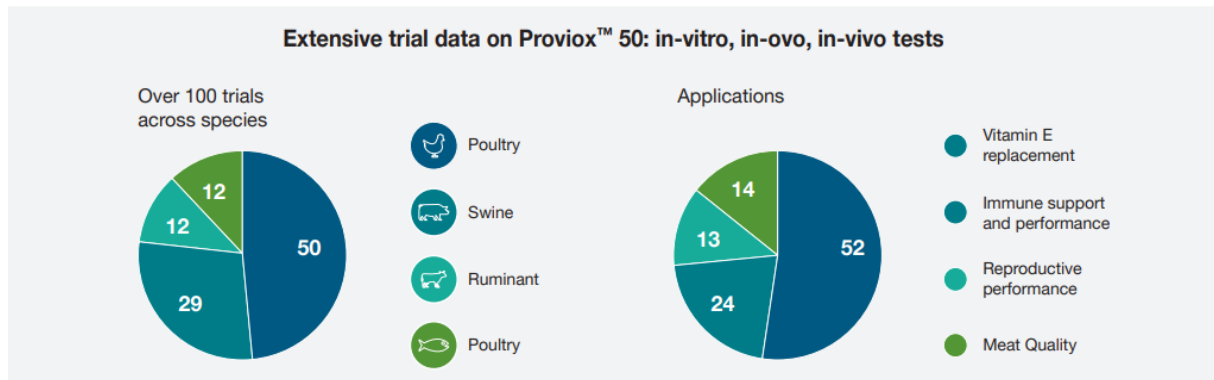
Proviox™ 50 is made up of a scientifically proven blend of sources of polyphenols - potent antioxidants coming mainly from grape and onion.

These antioxidant sources work in synergy with each other.

Why Proviox™ 50?

Results from 100+ trials across different species - swine, poultry, ruminant, and aqua - with more than a decade of market success have demonstrated that Proviox™ 50 can help:

- Improve oxidative status and support performance during periods of stress.
- Reduce feed cost by reducing the level of vitamin E required in the diet.
- Support reproductive performance.
- Support immune function.



Proven to combat oxidative stress and reduce feed costs

Proviox™ 50 combats oxidative stress by increasing antioxidants and enhancing the function of vitamin E in the diet. It supports and regenerates vitamin E and can replace up to 50% of the vitamin E in feed formulations, reducing costs.

Proviox™ 50 supports healthy animals

Periods of elevated oxidative stress can weaken animal immune systems, making them more susceptible to diseases.

For example, animals exposed to stressors like extreme temperatures, overcrowding, nutrient deficiencies, and injuries can have an impaired immune function. Some diseases also suppress the immune system, damaging organs and further weakening the animals.

Because of Proviox™ 50's antioxidant-rich composition, it can aid the immune response of animals. Additionally, Proviox™ 50 maintains gastrointestinal function and enhances nutrient absorption, thereby supporting overall animal health and growth.

Proviox™ 50 helps reduce feed cost

Farmers and feed formulators can use Proviox™ 50 to replace up to 50% of the vitamin E in animal diets **whilst maintaining performance.**

regeneration of vitamin E in the body, protecting cells from free radical damage and reducing the amount of vitamin E required in the animals' feed.

Research by Iqbal et al (2015) found that partially replacing vitamin E with Proviox™ 50 in broiler chick diets improved antioxidant status at a lower cost per kilogram of feed. In their study, one-day-old Hubbard broiler chicks were fed a base diet with either 100 ppm of vitamin E or varying levels of Proviox™ 50 replacing 25%, 50%, or 75% of vitamin E. The results showed improved antioxidant status in the birds' breast and leg muscles.

Proviox™ 50 supports end-product improvements

Proviox™ 50 can support improved quality of meat, eggs, and milk products whilst reducing the costs of vitamin E by introducing alternative antioxidants into the diet. These alternatives can help reduce drip loss, minimize peroxidation and off-flavors, and maintain stable color.

Here are a few examples of how Proviox™ 50 supports higher-quality animal products and performance:

- Poultry: offspring performance, better meat quality.
- Swine: improved piglet birth weight, better meat quality.
- Ruminants: better meat quality.
- Aqua: supports liver function, improved flesh quality.

Proviox™ 50 is accurately and flexibly dosed

Accurate dosage during feed formulation is vital to ensure the best possible results – and Cargill's MHS excels in precision nutrition.

The Proviox™ 50 calculator tool ensures precise application by determining exact dosage rates for each species, considering factors such as vitamin E inclusion levels and feeding and growth phases.

Why trust Cargill?

Cargill's Micronutrition and Health Solutions business provides the right product at the right time, with the right amount. Its world-class, science-based portfolio, coupled with nutritional and microbiome expertise, helps optimize profitability and performance for its customers. Supported by state-of-the-art research and development and manufacturing sites, and the company's position as a global product leader with local customer intimacy, Cargill offers farmers and feed formulators a powerful tool to navigate market volatility and increased oxidative stress.

To learn more about how Proviox™ 50 can benefit your operations and animals, [reach out to one of our experts](#). Our commercial and technical specialists are ready to provide detailed Proviox™ 50 trial data for a range of livestock species - swine, poultry, ruminant, and aqua - and comprehensive guidance on product usage across all systems.

**Proviox™ is only approved for use in certain geographies, end uses, and/or at certain usage levels. It is the customer's responsibility to determine, for a particular geography, that (i) the product, its use and usage levels; (ii) the customer's product and its use; and (iii) any claims made about the customer's product, all comply with applicable laws and regulations. For more information on specific products in your location, please reach out to our local Cargill animal nutrition representatives. [Contact Us](#)*

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