

RESEARCH & DEVELOPMENT

Zoetis is focused on continuously innovating to develop animal health solutions that meet the needs of those who raise and care for animals. Research and Development (R&D) is at the core of our efforts to provide innovation outcomes that anticipate the future needs of veterinarians and livestock producers in their local markets around the globe.

R&D

Our rich R&D efforts are comprised of more than 400 programs and reflect our commitment to better solutions. We create new insights for preventing and treating disease and for maximizing healthy performance and production. Our R&D delivers new platforms of knowledge that can become the basis for continuous innovation. Internal discoveries, complemented by external research collaborations, results in the delivery of novel vaccine, pharmaceutical or biopharmaceutical products to help our customers face their toughest challenges. Our rigorous approach to project selection and prioritization helps us develop these solutions with speed, flexibility and efficiency.

Our commitment to continuous innovation means we actively work to broaden the reach of our existing products by developing claims for additional species, more convenient formulations and combinations, and by expanding usage into more countries. We also create opportunities to use our capabilities in diagnostics and genetics research, so we can help our customers diagnose, prevent, and treat a variety of conditions.

GLOBAL RESEARCH NETWORK

In addition to our global R&D headquarters in Kalamazoo, Michigan, the Zoetis research network includes R&D teams throughout the United States (Iowa, Maryland, Nebraska, and North Carolina), Europe (Belgium and Spain), Australia, and in key emerging markets (Brazil, India and China).

This worldwide network allows us to listen to livestock producers and veterinarians, region by region, and translate their challenges into practical and cost-effective innovations tailored to meet their needs. Our regional footprint is at the core of our ability to respond rapidly and accurately when emerging infectious diseases spread and threaten the lives of animals.

GLOBAL MANUFACTURING NETWORK

Many of our R&D operations are co-located with manufacturing sites. This allows us to bring R&D projects to commercial-scale production more efficiently and helps us bring new and enhanced products to market faster. Each of our facilities is designed to meet prevailing regulatory requirements and we work closely with key regulators in the countries where we operate to ensure that we follow their guidelines and regulations.

FOR ANIMALS. FOR HEALTH. FOR YOU.

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INNOVATION OUTCOMES

As the needs of veterinarians, companion animal owners and livestock producers around the world continue to evolve, Zoetis strives to anticipate their challenges and develop new solutions that can help them care for animals more effectively and run their businesses more productively. Our research has resulted in a broad range of products over the years that have helped veterinarians provide better care for livestock and companion animals, and livestock producers enhance the efficiency and profitability of their operations. Examples of Zoetis innovations include:

- **Versican® Plus** — A combination vaccine for dogs that contains nine vaccine antigens helping to protect against ten key canine diseases such as distemper, parainfluenza virus, and *Leptospira*, in one vaccine dose. (Approved for use in the European Union.)
- **Apoquel® (ocloclatinib tablet)** — A novel Janus kinase inhibitor for the control of pruritus, or itching, associated with allergic dermatitis and the control of atopic dermatitis in dogs at least 12 months of age
- **Fostera® PCV MH** — A vaccine to help protect pigs from porcine circovirus-associated diseases and enzootic pneumonia caused by *M. hyopneumoniae* (*M.hyo*). The one-bottle formulation of the vaccine provides the convenience of a one-dose program or the flexibility of a two-dose program.
- **Improvast®/Improvac / Vivax / Innosure** — A first-of-its-kind immunological that controls boar taint (an off odor and taste in cooked pork from male pigs), enabling the benefits of

natural boar growth with less feed and environmental impacts while enhancing meat quality and improving pig welfare

- **Inforce 3™** — The first and only respiratory vaccine that prevents respiratory disease caused by Bovine Respiratory Syncytial Virus (BRSV)
- **Palladia™ (toceranib phosphate)** — The first drug to be approved by the FDA for treating mast cell cancer tumors in dogs
- **Convenia® (cefovecin sodium)** — The first antimicrobial for the treatment of common bacterial skin infections in cats and dogs that provides an assured course of treatment in a single injection
- **Cerenia®** — The first and only product on the market to prevent vomiting due to motion sickness in dogs
- **Draxxin® (tulathromycin)** — A novel antimicrobial for livestock that delivers a full course of antibiotic therapy against bovine respiratory disease in a single dose
- **Bovi-Shield Gold One Shot™** — A vaccine that helps protect cattle for at least 279 days against respiratory diseases caused by infectious bovine rhinotracheitis (IBR) virus and bovine viral diarrhea (BVD) Types 1 and 2 viruses.
- **Trocoxil®** — An innovative anti-inflammatory administered monthly to dogs with degenerative joint disease. (Not approved for use in the United States.)
- **Poulvac® E. coli** — A vaccine that aids in the prevention of disease caused by *E. coli* in poultry

- **Equivac® HeV, Hendra** — A vaccine to help prevent against clinical disease in horses caused by Hendra virus, a serious zoonotic disease that can be fatal to both horses and people. (Available in Australia.)

STRATEGIC PARTNERSHIPS

Our work is fueled by insights from research facilities around the world, a global network of more than 300 alliances with leading research institutes and universities, and the latest advances from related industries such as pharmaceuticals, biotechnology and agribusiness. This allows us to work across functions, organizations and countries to address unmet animal health needs through collaborative research and development, product licensing, supply and distribution in markets across the world.

Through our participation in these alliances, we focus on three key areas:

- Developing research collaborations and networks in all major world regions
- New research models through participation in consortia with top global experts
- Identification and rapid response to emerging infectious diseases and collaborative food safety initiatives

In collaboration with our partners, we also strive to support and advance the veterinary profession by harmonizing standards of veterinary practice and livestock production.

For more information about our focus on R&D, visit www.zoetis.com.