Creating more value together

NB this is a demo version. The brochure will be adjusted to the local situation of an opco (language, brands, photo, species etc)
In a world with limited natural resources and growing pressure in the feed-to-food value chain, Trouw Nutrition works with customers to increase their productivity and profitability. Our team of highly skilled professionals turns science-based expertise in animal nutrition into practical solutions characterised by their innovation, application know-how, quality and sustainability. Trouw Nutrition offers a broad range of specialised products, animal and economic models, and services that enable our customers to optimise their business by gaining better insights and making better decisions. That’s why our promise is Creating more value together.
By 2050 the global population is anticipated to grow to 9 billion, with 50-70 % of people living in cities. And the forecast is, there will be 3 billion more ‘middle class’ citizens as soon as 2030. This rise in overall population and prosperity will fuel worldwide food consumption at up to 2%* annually in the coming 30-35 years.

Meat and dairy products by 2050

<table>
<thead>
<tr>
<th></th>
<th>Per person</th>
<th>kg of meat</th>
<th>Per person</th>
<th>kg of dairy products</th>
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<td>2000</td>
<td>37</td>
<td>83</td>
<td>2050</td>
<td>50</td>
</tr>
<tr>
<td>2000</td>
<td>99</td>
<td>99</td>
<td>2050</td>
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*Estimated annual growth rate.
Our mission

The challenge we all face is to feed this growing population in an environmentally sustainable and safe way. Doubling food production is one thing; halving the impact on the planet is another. This calls for swift and responsible action by the food industry.

At Trouw Nutrition we play an essential role in the feed-to-food chain, and we believe innovation is the only way to realise the necessary growth for farmers and integrators in the food industry. We are driven by a simple yet significant mission: Feeding the Future. Our contribution to this is through innovative and sustainable nutritional solutions.

“I do not ask you to change direction, but I ask you to accelerate progress.”

Kofi Annan, in his address to the Nutreco 2012 conference
Innovation is key

Faced with market influences such as raw material supply shortages and surging demands, farming businesses need to adapt rapidly to survive. At Trouw Nutrition we believe precise animal nutrition and optimum feed efficiency are essential to providing sufficient protein for future population growth, as well as strengthening farm businesses to deal with the volatilities of the marketplace.
Feed costs and efficiency
Feed costs can represent up to 70% of a farmer’s total costs, so every feed-related decision can have a significant impact on profit margins. Our innovative precision feeding system, NutriOpt®, fine-tunes feeding strategies to achieve the optimum result, in a technical sense and for the bottom line.

Animal health
Prudent use of antibiotics is an important factor in controlling the spread of resistance in animals, which is a serious threat to global public health. Developed as the result of a major collaboration program, Selko Presan® supports gut micro biota and gut wall integrity, helping to reduce the need for antibiotics.

Animal performance
Transition phases like gestation and weaning have a big impact on animal performance, especially in later life. Improved health during these periods can increase animal productivity. LifeStart® is an innovative animal nutrition programme designed to bring science-based and sustainable practices to the optimisation of animal performance.

Feed-to-food quality and safety
Contaminants in raw materials and feeds affect not only fertility, growth, mortality rates and performance of animals, but also the end product consumed by the public. Just one incident can damage a customer’s profitability and long-term reputation. Trouw Nutrition uses the Nutrace® quality control programme to detect and monitor contaminant substances and control their impact, mitigating risk and protecting profitability.

Here are some areas where Trouw Nutrition innovations are addressing today’s customer challenges:
To meet today’s challenges, farmers and integrators need nutritional solutions that optimise their business entirely, supporting animal health, animal performance and their financial results. Trouw Nutrition has the people and the skills to bring you effective, across-the-board solutions that result in efficiency gains, improved growth, and enhanced profits. In short, our business approach is about creating more value together by offering:

- Specialised products
- Animal and economic models
- Application services.
Our nutritional solutions are built on four solid pillars. Each one contributes to helping our customers add more value to their business in a sustainable and safe way.
Science is a key driver in supporting our customers to be able to run a more cost-effective and sustainable business. At Trouw Nutrition, our guiding principle is to translate new scientific insights into practical nutritional solutions as rapidly as possible.

Our innovation focuses on these key areas:

- **Life start** — This area covers young animal feed and the relationship between nutrition and animal vitality and later life performance. LifeStart is an innovative animal nutrition programme designed to bring science-based and sustainable practices to the optimisation of animal performance.

- **Animal health** — This area deals with how an integrated approach to nutrition supports the intestinal health of ruminants, swine and poultry throughout all stages of life — helping to reduce the use of antibiotics. It also involves nutritional solutions for transition periods like gestation and weaning for pigs, and the time around calving and start of production for ruminants.

- **Feed efficiency** — This area covers the development of nutritional solutions that support production efficiency. A major Trouw Nutrition innovation in this field is **NutriOpt**. This precision feeding system links customers to the latest nutrition knowledge from Trouw Nutrition’s advanced research centres. It precisely optimises animal nutrition, connecting customers with the relevant technical and economic data in real time, and so helps them to increase their profitability, simplify their decisions and minimise their risk.

**Global science network**
Trouw Nutrition R&D has six major research centres in Canada, Spain and the Netherlands. Its in-house research is complemented with over 50 long-term research collaborations with scientific institutes across the globe.
The Trouw Nutrition models and services are what set us apart from other companies in the field. Using important variables, our models accurately predict farm performance, while our services extend beyond our product portfolio to optimise our customers’ operations.

• **Animal nutrition and feeding technology models and services** based on the latest scientific data. The models allow customers to fine-tune their feeding strategies with high accuracy and predictability. The additional technical services from the company’s specialists span feed formulation and feeding programmes, covering everything from ingredient evaluation to feeding application.

• A broad variety of **laboratory services** that offer tools to improve the decision process when dealing with complex combinations of physiology, genetics, nutrition, health management and ingredient selection. Advanced techniques are used, related to feed analysis, forage analysis, microbiological assays, nutritional values, feed and food safety, NIR spectroscopy, microscopy, veterinarian diagnostics and other analyses.

• **Farm management tools** tailored to the customer’s unique situation so they can optimise production yields in flocks and herds. Animal diagnosis, rearing environmental control and biosecurity management are some of the areas covered. Technical support is offered by company specialists, who are continuously trained to the latest standards.
Trouw Nutrition aims to deliver high-quality products that are safe for animals and consumers of animal products. That’s why we developed Nutrace, our company-wide programme to safeguard feed-to-food quality. It ensures consistency throughout the production process, from raw materials to final feed solutions, using five standards:

• **Certified Quality & Safety** guarantees the consistent formulation and production of high-quality, reliable feeds. To support this, Trouw Nutrition has implemented international certifications at its plants including ISO, GMP and BRC, as well as internal systems and procedures.

• **Ingredient and Supplier Assessment & Management** ensures that healthy, safe and sustainable raw materials are used for the production of animal feeds. We only use approved feed ingredients and suppliers and any new suppliers are carefully evaluated before approval.

• **Monitoring & Control** ensures that our animal feeds are safe. All Trouw Nutrition companies follow a harmonised and comprehensive global monitoring programme that covers undesirable substances from raw materials to finished feeds. This standard also includes a rapid alert and follow-up system as well as an external notification procedure.

• **Risk Management** ensures an effective professional response should an emergency arise. It includes food safety and crisis management so that correct decisions are made to minimise risks and correctly handle undesirable situations.

• **Tracking & Tracing** ensures rapid, efficient information flow between Trouw Nutrition companies, our suppliers, customers and buyers. An electronic system precisely traces feed batches back to their raw materials. This provides accurate and accessible data about all ingredients, production processes and deliveries.
Feeding the Future is the mission of Trouw Nutrition. And we are committed to improving the sustainability of the agriculture sector. As an integral part of delivering sustainable feed solutions for our customers we are constantly striving to reduce our own environmental footprint.

This pledge is being delivered through a programme called SEA (Sustainable Economic Animal Nutrition), which encompasses our entire production process, from raw materials to nutritional solutions.

SEA takes account of long-term environmental considerations while making it possible for our customers to operate profitable businesses. The programme is also an important contributor to helping Trouw Nutrition develop nutritional solutions that address major sustainability issues within the agriculture industry.
Raw materials are a very important aspect of SEA, specifically the use of limited global resources. Trouw Nutrition works closely with all its suppliers to ensure sustainable and responsible sourcing. Also within this field, the company invests heavily in R&D and has made a commitment to reduce the use of antibiotics without compromising animal performance, animal health, feed-to-food safety and quality.

Our four focus areas in sustainability

- **Ingredients**: Creating a sustainable base for animal nutrition
- **Operations**: Reducing the environmental impact of our operations
- **Nutritional solutions**: Enabling the animal and farmer to perform best
- **Involving people in the Feeding the Future challenge**
Portfolio

Trouw Nutrition solutions are tailored to match the needs of each species.

Our portfolio is constantly updated based on the latest data from our global R&D centres, our worldwide network of universities, our research experts, and through regular field trials.

We ensure the latest solutions are always available, through each phase of an animal’s life.
Innovative solutions that boost swine productivity
Understanding the challenges facing swine farmers is at the heart of our philosophy on effective innovation. We know that next to improved performance and health, swine farmers value increased feed efficiency.

The insights we’ve gained into farmers’ needs and into their production environment have led to the development of a high quality range of products especially for swine herds. The focus has been on providing total solutions that cover all stages of life, from the vital weaning of suckling piglets to the special challenges faced by nursing sows.

Here is a typical example to illustrate the Trouw Nutrition approach at work.

**Challenge**
The feed intake of piglets can drop during the weaning period, leading to a poor growth-out phase. The challenge with suckling piglets is to form homogenous litters with healthy, active piglets that have uniform growth rates and low mortality. Ideally, the piglets should have an optimal feed intake during the entire production cycle.

**Advice**
We know that a drop in feed intake during the weaning period can often be traced back to the pre-weaning period and the sow herself. To achieve optimal milk production in the sow, combining an optimal feeding strategy with enhanced farm management is essential. If this is still not sufficient for all the piglets in the litter, additional liquid feed as well as dry feed in the farrowing pen should be offered. A supplementary feed like Milkiwean® helps piglets make a smooth transition from weaning to starter feed.

**Approach**
The Trouw Nutrition integrated approach combines products, services and models. Our special mixed products offer a combination of vitamins and minerals for use in compound feeds, so that feed companies can offer complete products to farmers. An appealing and palatable pre-weaning feed encourages piglets to eat, stimulating intake during the first weeks after weaning. Using Selko® feed additives in the piglet feeds also supports development of the gastro-intestinal tract. Our services and models help optimise the farm management aspect, starting with the feeding strategy for sows and then fine-tuning a special weaning programme for the piglets.

This result is lower mortality with more piglets being weaned, more uniform litters, better feed conversion rates and fewer fattening days.
Supporting robust health and performance of ruminants
In the face of growing world demand for dairy products it may be comforting to know that the genetic potential of cows to produce higher quantities of milk increases year after year. However, this places an enormous challenge on the metabolic system of the cow, not to mention its overall health.

A critical phase for ruminants is the transition from the dry cow period to lactation. Problems during this period often cause disease and sub-optimal production. Trouw Nutrition offers a range of products and services that can help the farmer to manage this transition in the best possible way.

Here is a typical example of how to manage the transition effectively.

**Challenge**
Milk fever is still a problem on many farms. In an average herd, for every cow with clinical milk fever there are 5 cows with so-called sub-clinical milk fever. These animals don’t show the usual signs of milk fever but still have a low blood calcium level that reduces their immunity, cuts dry matter intake, and results in a poor start to lactation.

**Advice**
Several aspects of dry cow management need to be addressed to ensure the correct body condition score (BCS) at calving and the right amount of minerals during the dry cow period.

Sufficient magnesium is particularly important, to avoid low blood calcium levels. It’s also crucial to reduce the amount of calcium fed during the dry cow period. This will ‘train’ the metabolic system of the cow to utilise calcium from the diet to the maximum level once milk production starts.

**Approach**
Trouw Nutrition provides nutritional services to optimise the diet. Our latest solution, Calfix, binds calcium selectively and is fed during those last two weeks of the dry cow period. It is removed from the diet immediately after calving so that the amount of calcium in the feed goes up again. The cow can now utilise calcium much more efficiently. This can be followed up with Farm-O-San Reviva, a post-calving drink containing high amounts of calcium that has been shown to increase blood calcium levels after calving.
With a worldwide growing demand for proteins, consumption of products such as eggs and chicken meat is on the increase. However, most producers are experiencing downward pressure on egg & poultry prices, while feed costs continue to rise. This imbalance is hurting poultry businesses.

At Trouw Nutrition we have focused our innovation in this sector on finding new ways of achieving feeding efficiency and enhanced performance (FCR, uniformity, bodyweight). Our aim is to help restore the balance between feed costs, technical performance and economic performance (reducing the impact of falling prices).

Here is a typical example of how to address this requirement.

Challenge
Poultry farmers and broiler integrators with their own feed mills are constantly on the lookout for ways to increase efficiency and performance, while reducing production costs. Most of them want to optimise the technical results of their poultry operation such as litter quality and animal welfare on an on-going basis.

Advice
It starts with looking at the entire production chain, from feed mill to slaughter house, and first analysing the feed. We investigate what type of structural components are offered in the current broiler feeds and – using data from our worldwide research programme – pinpoint the optimum quality and quantity to use. Structural components are the ones that stimulate gizzard development and absorption of nutrients, leading to improved FCR.

Approach
Finely ground feed tends to result in reduced nutrient absorption by the animal. Coarse feed, however, stimulates gizzard development and function, leading to higher nutrient absorption and resulting in improved performance and lower feed costs. One approach, then, is to replace grains with more effective and economic alternatives in the broiler diets, and implement this in the feed formulation systems. The altered diet should result in an improved feed conversion rate and an overall reduction of the feed costs – restoring the balance both technically and economically, as well as increasing the customer’s profitability.
A global leader in animal nutrition, Trouw Nutrition is also a very local player. We have over 3,000 capable people serving customers in more than 90 countries around the world. And we make it our business to understand the true challenges facing farmers and integrators in the food industry. Together, through innovation and collaboration, we can succeed in our mission of feeding the future – with sustainable nutritional solutions.
## Products

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<tr>
<th>Feed additives</th>
<th>Premix</th>
<th>Farm Minerals</th>
<th>Concentrate</th>
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<tbody>
<tr>
<td>Selko</td>
<td>Trouw</td>
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Trouw Nutrition | Creating more value together
Trouw Nutrition, a Nutreco company is part of the Nutreco family. Trouw Nutrition professionals work closely together with all Nutreco companies and R&D centres. Trouw Nutrition has been supporting farmers, integrators and the feed industry around the world for over 80 years.

www.trouwnutrition.com