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Healthy Animals, Healthy People, Healthy Planet

by Johann-Caspar Gammelin

Nutrition is one of the most important factors influencing the preservation of the natural foundations of life. In our search for effective solutions, we should proceed on a scientific basis rather than being driven by seemingly plausible opinions

We want more, we're producing more, we're becoming more: The inhabitants of emerging nations are increasing their consumption, industrialized nations are intensifying their economic activities, and the world's population is growing. On the face of it, these are not bad developments. They testify to prosperity

and to people's pursuit of a good life. However, in past decades we have neglected an important consideration—possibly because in the past it was not as urgent as it is today: We will be able to live well only if we treat our planet well. And this is where we urgently need to do more.

In order to have a good life we also need to have healthy nutrition. But will we be able to provide almost ten billion people with healthy and sustainable nutrition in 2050? I'm convinced that we can do it. What's more, we have to do it! Globally operating companies like Evonik have a responsibility. It's not only a matter of key financial indicators; we have an obligation to help find solutions for global challenges. We're doing that with everything we've got, through technology and the know-how of our employees.

EXPLORING NEW FORMS OF FOOD PRODUCTION

By focusing on the opportunities offered by this technology, we are promoting a good life for the world's present population and for future generations. We envision this as the goal of our work. We have the courage to forge ahead with innovations, and we have the financial means to implement them. We must explore new approaches to the production and consumption of food. That's because concealed behind them is a significant lever for improving sustainability.

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Food production and the animal husbandry that is associated with it are contributing to climate change. Meanwhile, people in many countries have unhealthy or inadequate diets or have lost a sense of proportion. Today the consequences of an unhealthy diet, which include overweight, are even more dramatic than those of malnutrition. Incremental improvements of the system will no longer be enough. We need a fundamental change of course in how we produce and consume food.

These connections are also clearly emphasized in the most recent reports published by scientists and governmental organizations. All of these experts agree that there are close interrelationships between nutrition, health, and sustainability. Health-conscious nutrition and sustainable food production are the keys to a good future on earth.

Our approach to these issues is not helped by dogmas or hasty conclusions. Only scientific findings provide us with the foundation of facts that we need in order to make good decisions. Are these findings always clear-cut? Of course not. That's already obvious in the debate concerning the most effective method of food production. Is organic food production always good? In scientific terms, things are not that simple. Many standards for organically produced food dictate rules for the composition of animal feed that would lead to more resource consumption and significantly greater emissions of greenhouse gases and nitrates than the animal feed produced by conventional farming.

That also applies to modern meat replacement products. Many people already regard them as a source of salvation that will sustainably cover our demand for proteins. However, their environmental footprint is often worse than that of protein derived from fish, poultry or eggs. For example, if we add specific amino acids to animal feed, chick-

ens, pigs, cattle, dairy cows, and fish can metabolize their feed more effectively. The available nutrients can then be adapted to the animals' actual needs.

As a result, the animals require less feed, and the resources that would otherwise be needed for the cultivation of soybeans or other fodder crops are conserved. In 2018, the use of our amino acids in animal feed conserved a net total of about 62 million tons of CO₂ equivalents. That amount roughly corresponds to the total greenhouse gas emissions of Portugal.

When animals require less feed because they are metabolizing their feed more effectively, much less arable land is needed. In the Amazon region last summer, gigantic areas of this valuable ecosystem went up in flames because of the slash-and-burn method of clearing land—mainly for the cultivation of soybeans that are used to produce animal feed. The consequences for biodiversity are obvious. The global use of our concepts for animal nutrition can significantly reduce these consequences.

In addition, a forward-looking approach to animal nutrition leads to a much more efficient use of nitrogen. The overuse of nitrogen places a severe burden on our environment. Nitrates in groundwater, lakes that have passed the tipping point past which they cannot sustain life, and the algal blooms in coastal waters are clear signs of that. Moreover, microorganisms in the soil use excess nitrogen to generate greenhouse gases. Every reduction of nitrogen helps to relieve pressure on the environment.

WEEKLY MARKETS ALONE ARE NOT ENOUGH

All of these examples show that when the issue is how we are to produce healthy food in the future, we should not be focusing on what we believe in or what makes us feel

good. We need to proceed scientifically, precisely calculate the environmental footprint of foods and their production systems, and then make well-informed decisions. The question of how we can live in healthy and sustainable ways does not have simple answers such as sending consumers to the weekly market or to the nearest farm. The answer is far more complex.

At Evonik, through our decades of work we have gained such deep insights into the interrelationships in the production of animal proteins and into modern animal husbandry, and we have acquired so much know-how about animal and nutrition physiology, that today we are able to offer holistic solutions. The future of animal farming now bears the name of Precision Livestock Farming.

In the future we will utilize far more digital and connected technologies in agriculture, and we will use them to collect and analyze data in order to make production systems more efficient and effective. Healthy human nutrition begins with healthy animal nutrition. With the help of probiotics, we are making an important contribution in this area. We are convinced that antibiotics should not be used prophylactically to promote animal growth in animal farming. They should only be employed therapeutically in cases of illness. By applying state-of-the-art, non-invasive diagnostic methods we can also continuously monitor the state of the animals' health and adapt the composition of their feed accordingly.

All of these developments make me optimistic. If we resolutely tackle negative developments while focusing on scientific facts in the process and utilizing technological innovations boldly and consistently, we will be able to feed even ten billion people in 2050 without any further overexploitation of natural resources. —