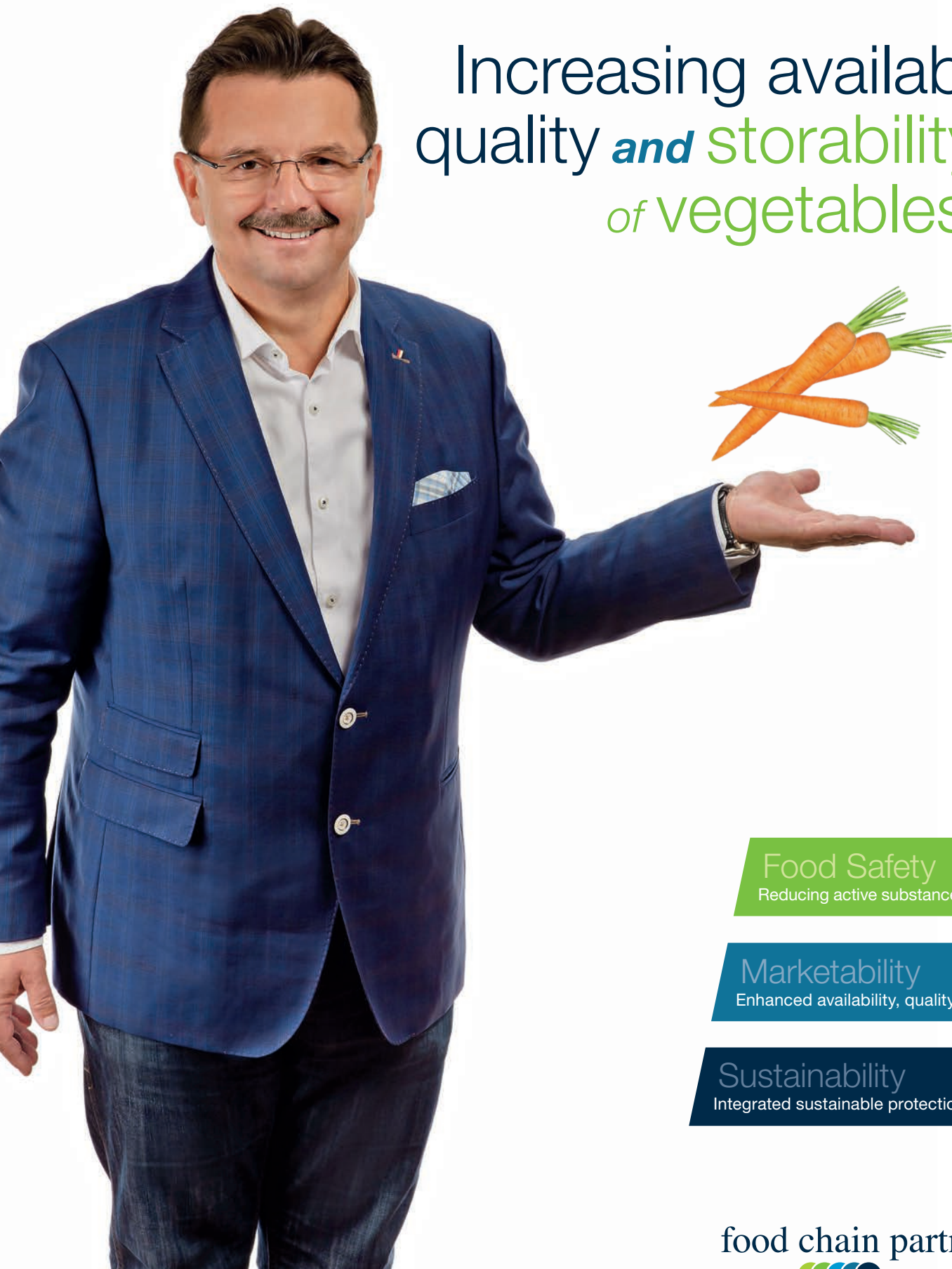




Increasing availability, quality *and* storability of vegetables



Food Safety

Reducing active substance residue levels

Marketability

Enhanced availability, quality and storability

Sustainability

Integrated sustainable protection strategy

food chain partnership



What was *the market situation?*

The Polfarm Group has been growing and distributing vegetables since 1989. Polfarm grows crops on around 2,000ha of land near Gdańsk and Puck in northern Poland. Around 500–600ha of the total acreage is devoted to growing vegetables. The main crop is carrots, which are grown on over 250ha, but in recent years other vegetables such as parsley, celeriac, beets, onions and leeks have also become important. The Polfarm Group cooperates with leading retail chains in the Polish market and abroad.

The market is now demanding more in terms of vegetable availability and quality. Year-round availability – not just during the growing season but also in winter and spring – is more and more of a must. For that reason, the Polfarm Group is investing in improving its storage, washing and packing facilities, e.g. in a hydro-cooling system as cooling improves the durability of vegetables. The Polfarm Group was also the first to use ozonized water to wash vegetables, as it enhances their microbiological cleanliness and keeps them fresh longer.



POLAND



Challenges:

- Lowering disease pressure
- Improving vegetable quality after storage
- Reducing the residue levels of crop protection products



Solutions:

- Longer crop rotation and a decision-supporting system in crop protection
- New plant protection technologies, including innovative chemical solutions and biological products
- New technology for washing and storing vegetables



Benefits:

- Higher yields from vegetable crops
- Improved quality of vegetables supplied to trade partners
- Stable, profitable business based on long-term partnerships

“Cooperation with such a demanding customer is both a great challenge and an obligation. After several years of working together, I now know it has been well worthwhile. Most importantly, we are continuing to intensify our cooperation, always looking for even better solutions.”

Radosław Suchorzewski, Bayer



What were *the challenges?*

With the intensity of vegetable production increasing, particularly for root vegetables, crop rotation was shortened. But the problems of controlling fungal diseases, and particularly Sclerotinia, had gotten worse. This resulted in in-field plant infestation as well as lower quality and quantity after storage.

At the same time, market requirements and customer expectations were rising, particularly with regard to the

residue levels of active substances from crop protection products in the vegetables supplied to retail outlets.

For these reasons, a new growth and crop protection technology was needed – one that would limit losses and improve the quality and safety of vegetables delivered to trade partners.

What was *the solution?*

The increasing market requirements necessitated a more differentiated crop rotation schedule involving cereals, potatoes, horse beans and bulb vegetables. This has enabled a crop rotation cycle of at least five years. However, a key component of this strategy is a sustainable protection program against diseases and pests, which includes state-of-the-art conventional products, e.g. Luna® Experience, as well as biological products, e.g. Contans® WG and Serenade® ASO.

An important element in this sustainable growth and protection strategy is the use of monitoring and decision-support systems to precisely set the timing and number of crop protection treatments. The decision-support system includes a weather station and specialized software for determining the optimum dates for fungicide treatments. Last but not least, both sticky and pheromone traps are being used to control pests.

“The introduction of integrated protection technology has allowed us to limit the residue levels of crop protection products in the finished produce.”

Paweł Gulczyński, Polfarm





What did *we achieve?*

The switch to a more sustainable production technology made a reduction in disease pressure possible, as well as an improvement in the quality and safety of the vegetables delivered to trade partners. The protection technology, which involved the use of decision-support systems and state-of-the-art crop protection solutions from Bayer, proved more effective than the previous technology. There was also a reduction in the number of treatments with conventional crop protection products and the introduction of biological products proved extremely effective, especially in Sclerotinia control.

As a natural consequence of the introduction of integrated crop protection technology, there has been a reduction in active substance residue levels in the vegetables. This has enabled Polfarm to comply with the increasingly strict requirements of the retail chain trade partners.

Summarizing the key achievements:

- Reduction in storage losses of 20–30 %
- Increase in the trade crop share by 20 metric tons per hectare
- Sale of produce to large multinational purchasing organizations made possible by integrated production technology and residue limitation

About Food Chain Partnership

Consumers are becoming increasingly conscious of the need for healthy nutrition. Food Chain Partnerships help to supply consumers with high-quality fresh produce, which forms the basis of a healthy diet. But such partnerships can only succeed if they involve every player in the food chain – from the farmer and processor to the exporter or importer and retailer. The Crop Science Division of Bayer has the global experience and cutting-edge expertise to create a successful partnership at every level.



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