



Science For A Better Life

Ecological Revaluation of Lettuce – towards an **increase** in **sustainability**



food chain partnership



How it all started

Lettuce is one of Germany's favourite vegetables, and iceberg lettuce in particular enjoys wide popularity. It's inexpensive, keeps well and is easy to prepare. Iceberg lettuce even came in sixth place on the list of favourite vegetables in Germany in 2011. Raising awareness among consumers of what they eat calls for greater transparency in the value chain. Aspects like freshness, regionality, health and, increasingly, sustainability are increasingly important. In order to satisfy these demands, reliable, sustainable cultivation solutions for lettuce production need to be developed that protect lettuce from diseases and pests and help growers to produce responsibly. This can be done with help from the Bayer CropScience Food Chain Partnership Project, which addresses these problems and identifies solutions. With an area of 2500 hectares of iceberg lettuce under cultivation, Lower Saxony is the state with the largest production, and so is particularly suitable for the project.



What we aimed to achieve

The goal of the project is the production of high-quality lettuce with particular attention paid to aspects of sustainability. On the one hand, this includes optimization of crop protection programmes based on integrated crop protection. On the other hand, there is a specific focus on the ecological reevaluation of the areas under cultivation. It will be shown that measures to support biodiversity and protect bees in intensive cultivation can be established and meaningfully integrated into existing operations without the quality of the lettuce suffering.

Who is involved

BEHR AG is an internationally active family business, headed by Rudolf Behr in its fourth generation. Besides various types of lettuce, the company also produces varieties of cabbage for the German market. The company is one of Germany's biggest lettuce producers. BEHR AG's German lettuce production is located mainly at the Ohlendorf site near Hamburg. Aspects of economically efficient and sustainably innovative production receive equal attention in production. Environmentally-conscious use of natural resources is particularly emphasized. BEHR AG combines production, trade and consulting under one roof, through their subsidiaries.

Mecklenburger Ernte is the only fruit and vegetable producing organization in Mecklenburg-West Pomerania. 35 companies from various states are members, also including Behr Gemüse-Garten GmbH. Mecklenburger Ernte markets fish vegetables (sic) and processed fruit of companies, acts in

an advisory capacity and is committed to the

protection of consumers. Their focus is on market-directed production and environmentally friendly, sustainable production methods.

AMG Agrarmanagement GmbH is a specialized consulting firm for open land vegetable cultivation, and a member of BEHR AG. It operates as a service provider for the operations of the Mecklenburger Ernte producer organization and advises members of the producer organization regarding tillage, planting and harvesting of crops. Consistently high quality is ensured by regular monitoring in accordance with national and international standards. In addition to ecological and agricultural aspects, AMG Agrarmanagement GmbH also attends to the financial situation of the farms.

Bayer CropScience Deutschland GmbH is the German sales organization for Bayer CropScience, a leading pesticide manufacturer worldwide, whose strength is innovative products. These are the result of long years of intensive research, the goal of which has been to provide support for farmers in the sustainable production of food. Together with producers and marketers, Bayer CropScience in Food Chain Partnership Projects develops sustainable pesticide solutions for the benefit of all parties involved, and is also involved in the areas of bee health, biodiversity, water protection and protection of users.



The integrated crop solution

The integrated approach in lettuce production begins with the selection of site-adapted, disease-resistant lettuce varieties. Under the damage threshold principle, plant protection means that a certain level of disease is tolerated, which, however, contradicts the basic requirements of the food law (“the goods must be free of disease and pests”). On this basis, targeted use of plant protection measures is necessary in order to prevent disease and pests in the crop. Compliance with legally established residue limits and satisfaction of individual food retailing requirements are also of enormous importance in the marketing of lettuce.

Important elements of sustainability management for Bayer CropScience also include protection of the user when handling the product and environmental and water protection. The biggest problems with lettuce are caused by mildew and aphids.

Infested heads are unmarketable and mean a loss of revenue for the producer.

AMG Agrarmanagement GmbH and the team from Bayer CropScience jointly developed customized crop solutions that take into consideration all potential problems and still ensure compliance with all requirements for healthy, sustainable food. The particularly gentle insecticide Movento and the highly effective fungicides Calypso and Previcur Energy were applied. The lettuce crops were also ecologically revalued with flower strips. Many beneficial organisms settled there, which helped with biological pest control.



What we achieved

It was possible to obtain a number of important findings and positive results under the Food Chain Partnership Project with BEHR AG and Mecklenburger Ernte in the largest German lettuce growing area. Above all, it showed that the thoughtful integration of flower strips into the operational concept was successful and required little effort. It was clearly possible to increase the number of individuals and species of wild bees and other useful insects, which could be a valuable contribution to the conservation of biodiversity in this agricultural area. What was decisive was that the improvement measures did not lead to a higher occurrence of pests in the lettuce crop. The flower strips and the insects living in them were not affected by the pesticides in the neighbouring lettuce fields. The goal – production of high-quality lettuce by sustainable means – could be completely achieved. This underscores the specific impact and the suitability of Bayer CropScience products for sustainable production. With a training course on application technique and water protection, it was possible to provide an additional contribution for sustainable methods of management. Only the extensive involvement of all partners and the readiness to try different ways together made the success of the project possible.

Next steps

The results of the project highlight the positive effects of the policy pursued by the Food Chain Partnership. The operation is now armed with extensive know-how for the management of environmental improvement measures. The operation will also make use of the experience gained through experiments in the future. Beyond the project, the close collaboration will be used to obtain a more optimized application technology for a more targeted pesticide application. Through the acquisition of proven practical measures together with Bayer, BEHR AG remains a pioneer in the area of sustainable lettuce production, and sets a clear path for future sustainable agriculture.



left:

Belinda Giesen-Druse
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right:

Dr. Georg Mevenkamp
Director
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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. Bayer CropScience has the global experience and cutting-edge expertise to create a successful partnership at every level.



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