

## CZECH REPUBLIC

### Farm's performance, restructuring & modernisation

#### Location

Zlín

#### Programming period

2014 – 2020

#### Priority

P2 – Competitiveness

#### Measure

M04- Investments in physical assets

#### Funding (EUR)

Total budget 22 933 332

EAFRD 541 869

National/Regional 552 816

Private 3 171 981

Other 18 666 666

#### Project duration

2018 – 2020

#### Project promoter

Farma Bezdínek s.r.o.

#### Contact

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#### Website

[www.farmabezidinek.cz/en](http://www.farmabezidinek.cz/en)

The largest, hi-tech hydroponic greenhouse for growing vegetables in the Czech Republic used Rural Development Programme (RDP) support to upgrade its pesticide-free production capacity.

### Summary

The Bezdínek Farm is an agricultural holding dedicated to mixed farming, i.e. crop and animal production. It operates the largest hi-tech hydroponic greenhouse for year-round vegetable growing in the Czech Republic. The farm used RDP support to extend the areas of its orchards by approximately 0.6 ha.



The farm used Rural Development Programme (RDP) support to extend the areas of its orchards by approximately 0.6 ha. In addition to the purchase of new machinery to better manage the orchard, a support structure with an anti-hail system was set up to protect future harvests against adverse weather conditions. The farm also modernised the greenhouses by purchasing grow lights and harvesting and growing technology.

### Results

The investment allowed the farm to increase its winter production. The state-of-the-art harvesting and growing technology has resulted in a major change in the system of harvesting and the performance of growing operations of the farm.

The farm is the first greenhouse in the country that has implemented the certified Pesticide Residue Free vegetable production system.

The farm has already achieved 0 % pesticides residue in the vegetables it produces and has reduced nutrient loss to 0 % by recycling and reusing the excess water from irrigation.

### Lessons & Recommendations

- ❑ The Bezdínek farm shows that hi-tech farming technologies can be introduced in deprived areas, such as former coal-mining regions, to produce healthy food, all year round, for the local market and create new jobs.
- ❑ The farm owners believe that certified, pesticide-free vegetables will become a popular choice with consumers in the Czech Republic and that this method of production will be an example of best practice and an inspiration for other countries, growers and producer organisations in the European Union (EU).

## Context

The Bezdínek Farm is an agricultural holding dedicated to mixed farming, i.e. crop and animal production. It operates the largest hi-tech hydroponic greenhouse for year-round vegetable growing in the Czech Republic and also manages over 100 bee colonies. The owners are keenly aware of the social and environmental responsibility that farming has to move away from synthetic pesticides use in order to protect pollinators.

The farm is located in the Karviná district. This area has been heavily impacted by the phasing out of coal mining and consistently reports the highest unemployment rates in the Czech Republic. The farm provides almost 200 year-round jobs for local inhabitants. The majority of these workers belong to the most vulnerable groups in the labour market: mainly women with low literacy levels and minimum qualifications.

The investor and owner of Farma Bezdínek has also established the officially recognised producer organisations OVOZELA (SK), Čerstvě utrženo (CZ) and Dobré družstvo (CZ), bringing together local fruit and vegetable growers.

In an effort to achieve its vision of growing quality fresh fruit, the area of the farm's orchard was extended by creating a smaller plum orchard of approximately 0.6 ha, where they installed an orchard supporting structure with an anti-hail system to protect future harvests against adverse weather conditions. Additionally, new terrain appropriate machinery was purchased (a narrow tractor). The farm has also modernised its greenhouses with grow lights and harvesting and growing technology.

## Objectives

The overarching objective of this project was to enable the farm to best cater for the needs of its customers, by improving the quality of the products it sells to the market.

The farm believes that by bringing high-quality products to market it will:

- help increase the consumption of healthy fresh vegetables;
- contribute to improvements in public health in the area;
- support local employment in a problem region; and
- inspire professionals as well as the general public.

## Activities

The development plan involved the construction of a hi-tech hydroponic greenhouse for growing vegetables all year round. The construction took place in two phases, in 2018 (Stage 1 – 5.5 ha) and in 2019 (Stage 2 – 6.0 ha).

The greenhouse construction was followed by the Pesticide Residue-Free certification of the vegetable production technology, which took place in 2019. The certified vegetables from Farma Bezdínek meet the legislative requirements for organic or baby food in terms of the pesticide content.

The greenhouse is fitted with the best available climate control technologies. The climate computer can control sunlight intensity and heat consumption by using screens, temperature as well as air humidity and circulation. It can also measure the CO<sub>2</sub> levels with the aim of minimising energy and water consumption per unit of production by using advanced algorithms.

The plants are grown in organic substrate, composted at the end of the growing season. The plants are watered by rainwater from greenhouse roofs that is collected in water basins. This drain irrigation water is recycled and reused.

An anti-hail system was installed, to protect the future harvest against adverse weather conditions, and a mulcher and narrow tractor was purchased.

Grow lights and harvesting and growing equipment for the hi-tech greenhouse with a cultivation area of 11.5 ha were purchased to modernise the greenhouses.



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## Main results

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The farm is the first greenhouse in the country to implement the certified Pesticide Residue Free vegetable production system.

The farm has already achieved 0 % pesticides residue in the vegetables it produces and has reduced nutrient loss to 0 % by recycling and reusing the excess water from irrigation.

The farm's approach has inspired other vegetable growers. Three other farms have been certified for Pesticides Residue Free vegetable production in the Czech Republic and Slovakia according to the [ZERYA standards](#).

Events including conferences and workshops (also in the framework of the National Rural Network) are held on the farm. The farm has a demonstration greenhouse and a public visitor centre with the aim of educating visitors about healthy eating and residue-free farming.

### Key lessons

The Bezdínek farm shows that hi-tech farming technologies can be introduced in deprived areas, such as former coal-mining regions, to produce healthy food, all year round, for the local market and create new jobs.

The farm owners believe that certified, pesticide-free vegetables will become a popular choice with consumers in the Czech Republic and that this method of production will be an example of best practice and an inspiration for other countries, growers and producer organisations in the EU. The ZERYA standard and other standards for pesticides-residue-free food production are available to all EU farmers.



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#### Additional sources of information

<https://facebook.com/bezdinek/>

[www.instagram.com/farmabezdinek/](http://www.instagram.com/farmabezdinek/)