

grow



Replacing Maize with Silphia – A Perennial Crop for Sustainability

About Silphia

On a 180-hectare farm in Bavaria, a 50-year-old farmer decided to move away from maize monocultures for biogas production. Since 2012, he has cultivated 80 hectares of *Silphium perfoliatum* (silphia), a perennial flowering plant, aiming to improve soil health, enhance biodiversity, and reduce input costs. Supported by peer networks and planning for farm succession with his nephew, the farmer has transformed part of his land into a more sustainable and resilient system.



The Challenge

Establishing silphia is not simple:

- It cannot be harvested in its first year, requiring patience and careful planning.
- High seed costs (~€1,750/ha) and technical sowing challenges demand specialist knowledge or external support.
- As a perennial, it ties up land long-term, potentially limiting crop rotation and food crop cultivation.



Despite these hurdles, silphia promises long-term ecological and economic benefits, including lower operating costs, reduced pesticide use, improved soil quality, and enhanced biodiversity. Its adoption also relies on political support and the development of alternative uses, such as paper fiber or peat substitutes.

THE SOLUTION

The farmer overcame these challenges with practical strategies:

-Using maize as an underseed in the first year to make productive use of the land.

Employing specialized sowing technology to minimize seed losses.

Collaborating with peers to share knowledge and experiences.

IMPACT AND RESULTS

Silphia has delivered measurable ecological and economic benefits over time:

-Lower operating costs: long-term running costs fall to 15–20% of conventional crops.

-No fertilizers, pesticides, or tillage needed after establishment.

-Improved soil quality: humus content increases by approximately 0.1% per year.

-Enhanced biodiversity: long flowering period supports bees, insects, and small wildlife.

-Carbon benefits: contributes to CO₂ binding (e.g., via Carbocert).

-Long-term profitability: reduced inputs and maintenance costs make the crop economically viable despite lower yields than maize.

Silphia has become more than just an energy crop: it represents a shift toward sustainable, climate-friendly farming, balancing productivity with ecological stewardship.

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