

# grow



## Drone sowing of catch crops / Undersowing

### About

This case study features a 40+ farmer from the Münster district who, faced with uncertainties in pig farming (high investment costs, social pressure, and animal welfare concerns), sought a new source of income for his farm. Since 2023, he has been using drones to sow seeds on 5.6 hectares, either before harvesting to improve the soil or as undersowing to protect corn plants. The method reduces costs, avoids soil compaction, eliminates diesel use, and contributes to climate and environmental protection.



### The Challenge

The farmer faced several challenges when adopting drone technology for sowing:

- Technical expertise:** Operating drones effectively and handling light-germinating seeds requires specialist knowledge.
- Weather dependency:** Success depends heavily on post-sowing conditions, which can vary significantly.
- Field logistics:** Long journeys to fields and differing weather conditions complicated implementation.
- Crop issues:** Lack of soil cultivation led to poorer straw distribution, weed problems, and higher pressure from snails and mice.

This was important as farms face increasing economic and regulatory pressures, making resource-efficient, climate-friendly alternatives crucial for long-term sustainability.



## THE SOLUTION

To overcome these obstacles, the farmer:

- Trained as a drone pilot and sought private consultation for technical support.
  - Adopted drones to perform sowing more cost-effectively and flexibly compared to conventional services.
  - Leveraged drones' advantages: no soil compaction or crop damage, climate-neutral operation (no diesel), and the ability to sow 5–10 hectares within two hours.
- This innovative approach not only improved farming practices but also created a new income source while aligning with sustainability goals.

## IMPACT AND RESULTS

Drone sowing has delivered multiple benefits:

**-Agronomic effects:** More uniform sowing, improved soil fertility, erosion reduction, and permanent greening that suppresses weeds.

**Environmental benefits:** Climate-neutral (no diesel use), reduced herbicide reliance, and support for water protection areas.

**-Economic outcomes:** Costs of €35–55 per hectare, cheaper than many external services, with high flexibility and efficiency in sowing large areas.

**-Harvest stability:** While immediate yield increases are not measurable, harvests are more consistent and reliable over time.

The case shows that drone sowing is especially valuable for farms with limited staff or machinery, as large areas can be managed quickly and cost-effectively. Bringing seeds directly avoids leftovers and additional costs. Looking ahead, drone technology has strong potential as a sustainable, affordable, and scalable solution for crop establishment, particularly in environmentally sensitive areas.

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