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BestCrop

Boosting photosynthESis
To deliver novel CROPs for
the circular bioeconomy

For Farmers

www.bestcrop.eu

Introduction

BEST-CROP is an alliance of European plant breeding companies, straw processing companies and academic plant scientists aiming to utilise advances in our understanding of photosynthesis to improve barley yield and to exploit variability in barley straw quality and composition.

BEST-CROP is developing **Next Generation barley Plants (NGPs)** to replace current varieties with fully renewable alternatives.

Challenges

Farmers face numerous challenges, from the impacts of **climate change to soil degradation** and **biodiversity loss**.

Increasingly **unpredictable weather patterns** and extreme events such as floods and droughts disrupt growing seasons, reduce water availability, promote weed growth, and worsen pest and fungal problems, ultimately reducing crop yields.

Soil erosion worsens these problems by encroaching on farmland, while decreased biodiversity disrupts crop pollination. At the same time, farmers are under increasing pressure to save water and reduce agricultural inputs.

With **global population** projected to soar to 9.8 billion by 2050,1 the agricultural sector faces heightened demands to satisfy escalating needs for food, feed, and bioenergy.

1 https://www.un.org/en/desa/world-population-projected-reach-98-billion-2050-and-112-billion-2100

Objectives

BEST-CROP focuses on **barley**, a crucial global crop for which the EU is the leading producer, yielding nearly 55 million tons of grain annually.

Our goals are to:

- Provide **highly productive** barley breeding lines.
- Increase **above-ground total biomass** production by 15-20% without altering the harvest index.

BEST-CROP will also advance the circular bioeconomy by:

- **Tailoring barley straw** for efficient conversion into high-value bio-based compounds.
- **Replacing products** from highly polluting industries.
- Turning straw waste into a **valuable raw material**.

BEST-CROP operates in accordance with current **EU legislation** regarding genetically engineered crops.