

# BOOSTING COMMON BUNT MANAGEMENT IN EUROPE

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## Introduction

Common bunt, caused by the fungi *Tilletia caries* and *T. foetida*, is a disease in wheat and related cereals. Starting from just a few spores on the seed, the disease can develop in the crop and considerably reduce grain yield and especially quality. The disease is mainly seed-borne, although it can also persist in soils. Techniques that allow the management of common bunt in organic farming - including sound crop management, observation, seed analyses and seed treatments - are well identified [1]. However, when these are not put into practice, occurrences of common bunt still regularly devastate organic wheat crops. This work followed two objectives: Firstly, collecting techniques already available for bunt management and developing appropriate formats to disseminate them. Secondly, exploring new approaches to bunt management, ranging from novel seed treatments to more holistic approaches to plant health.



## Results

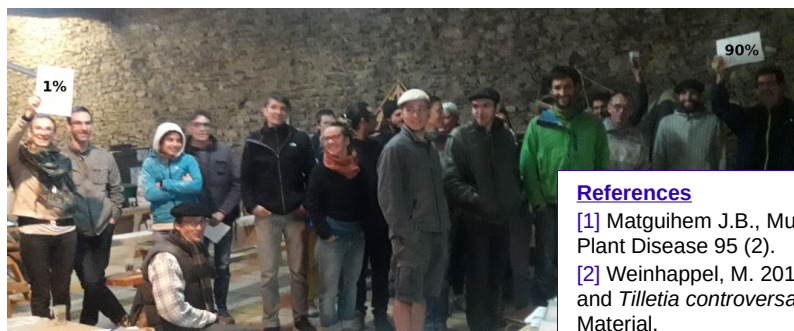
An overview of techniques available for bunt management in organic systems was compiled and communicated, in particular via dedicated websites in French and English [3], and a document in Hungarian.

A comparison of bunt requirements for certified seeds in EU Member States has identified a potential for exchanging on experiences with different bunt norms, as well as a need for transparency when wheat seed is shipped across Member States.

Vinegar seed treatments were officially experimented for the 1<sup>st</sup> time in Austria, as well as Hungary and Romania.

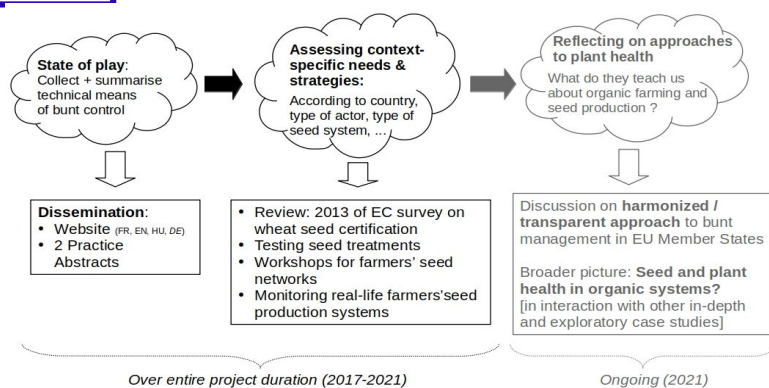
Brush cleaning has been experimented in France and disseminated in France, for farmers' cultivars at risk of being lost because of bunt, in particular.

Methodology for participatory workshops on bunt management were shared between Denmark, Italy and France.



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## Materials & Methods



As a first step, techniques and strategies used for bunt management in organic systems were collected across Europe. The bunt requirements implemented for certified seeds in different EU Member States were compared, based on a previous inquiry [2]. Transdisciplinary exchange of knowledge and know-how was favored both among LIVESEED project partners and with practitioners beyond the consortium through workshops and seminars in Denmark, France and Italy (8 events, each with 8-50 participants).

Field trials were conducted in Austria, Denmark, France, Denmark and Romania to test and fine-tune a range of seed treatments and sanitation methods, including compound-based (vinegar), biologicals (CERALL®) and physical treatments (seed washing, brushing).

## Discussion

The experimentation and dissemination of techniques for bunt management in organic systems have been facilitated by this exchange between European researchers. Knowledge on bunt and its management has been made widely available, not in the objective of uniformising management approaches, but to enable practitioners to find the best combination of techniques according to their situation and context.

Topics have been identified for future research & development:

Exchanging experiences with different bunt requirements in EU Member States as a first step toward more transparency on the topic

Evaluating the effect of seed treatments on seed vigour

A (long-term) monitoring of bunt on farmers' seeds has been initiated in France.

## Conclusions :

LIVESEED has facilitated the **transdisciplinary exchange of knowledge and experience at European level** at several scales (ranging from local to European) and thereby enabled: The sharing of concrete tools, both for bunt management and for bunt research

Getting inspired from other approaches, such as bunt requirements of various countries

Identifying future topics for research & development.

## References

- [1] Matguihem J.B., Murphy K.M., Jones S.S. (2011). Control of Common Bunt in Organic Wheat. *Plant Disease* 95 (2).
- [2] Weinhappel, M. 2018. Survey on EU Member States standards for *Tilletia caries*, *Tilletia foetida* and *Tilletia controversa*. Based on a survey of the Standing Committee Plant Reproductive Material.
- [3] ITAB (2020): Website on common bunt management in English, available at <http://itab.asso.fr/activites/gc-eng-carie-gestion.php>

