

# TO WHAT EXTENT DOES AGRONOMY help to manage risks?



*Jean-Charles Deswarte: "Accepting known minor risks to prevent an unknown major risk over the whole farm."*

Cereal management is a well-known subject now, but external factors, such as climate change or market variability are upsetting the apple cart. Jean-Charles Deswarte, a plant ecophysiologicalist at Arvalis, looks at a few ways of mitigating this issue.

## **Perspectives Agricoles: Should we review the cropping season's traditional timetable?**

**Jean-Charles Deswarte:** Usually, the aim is to find the best possible phenology in order to avoid the most common sources of stress, such as cold weather at the stem elongation stage or dehydration when cereal grain is filling. Chaotic climate change is disrupting this type of cropping system, where sensitive phases are synchronised over the whole enterprise. When adverse weather conditions occur, they have significant consequences, as was the case during the winter of 2012 for north-eastern France, or in May-June 2016. At the same time, plant health issues are increasing, with greater pressure from pests and weeds, in a regulatory context that is reducing the number of mitigating solutions available. The idea would therefore be to adjust sowing practices, either to desynchronise the crops on the farm and avoid the risk of large scale impact from the weather, or to limit the pressure on plants at the beginning of the cropping season.

## **P. A.: How would this change cropping techniques?**

**J-C. D.:** Historically, sowing strategies have been designed to make the different growth stages of a particular crop converge towards an "ideal" phenology for "average" weather conditions. But now, unpredictable weather patterns sometimes lead farmers to diversify phenologies, in order to spread risks; this can mean having to depart from historical practices, and, for example, growing earlier wheat varieties than the current ones in some parcels, and significantly later ones in others. Of course, this means that the former may be at risk at the end of winter, and the latter at the end of the season, but it avoids having the entire block facing the same risk. This change in practices can produce crop opportunities: by delaying the sowing date of winter cereals, it is possible to reduce pressure from bioaggressors, and therefore counterbalance the drop in yield potential. Modifying the cropping season (harvest and sowing) can also create intercropping opportunities, such as catch crops or crops with agronomic benefits.

**P. A.: Can this solution be implemented on any farm?**

**J-C. D.:** It depends on the farm's, or even each field's particular set of circumstances and the difficulties encountered (level of weediness, exposure to BYDV, proportion of winter crops in the rotation, etc.). Diversification can be implemented for a particular crop, or between different crops. To be successful, crop operation strategies and the range of crop earliness must change gradually. It is currently difficult to describe those changes concretely, because of the increasing unpredictability of climatic risks. The idea is to introduce a statistical and economic approach, and no longer a purely physiological one, to guarantee long-term rather than annual performance. Given that agricultural markets are also increasingly fluctuating, it is important to establish a risk diversification strategy, based on the answer to the following question: how can my farm cope with a significant loss of revenue?

The cropping system can be modified little by little. The decision process must also encompass wider considerations, involving the whole production area or a given cooperative, for example, and include factors such as the technical support available to farmers, the markets that should be developed, etc.