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Mental modelling of European farmers' decision making processes regarding Integrated Weed Management

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Integrated Weed Management (IWM) typically involves complex risk management decisions. It comprises preventive and control measures that require decisions on crop choice and sequence, cover cropping, fertilisation, cultivation type and frequency. IWM can therefore not be considered a set of weed control tactics alone, it is a complex system approach in which many different risks and benefits need to be considered. Many farmers have not embraced IWM practices despite proven to mitigate weed problems and increasing the sustainability of weed management.
Within the project IWMPRAISE, we defined a framework for IWM applicable in several cropping systems. Five different classes or pillars are distinguished for integrated weed management, which are important to make an informed decision on what tactics to combine into a weed management strategy that manages weed populations at a time scale covering the current growth season.
Weed management experts from the Netherlands, Denmark, UK, France, Slovenia, Italy and Spain were interviewed to add expert based knowledge to the IWM framework. Furthermore, farmers from all above countries were interviewed to identify the farmer's knowledge, thinking and decision process regarding IWM strategies and tactics covering different cropping systems. Analyses of the differences between expert's and farmer's thinking about IWM and the differences in knowledge and use of IWM strategies and tactics between the different cropping systems will be presented, together with the IWM framework. Knowledge on farmers' thinking and decision–making processes can be used to guide research activities tailored to the farmers' needs. The research is carried out in the IWMPRAISE EU H2020 project.