# Crop phenology using satellite and sensor imagery, weather data and modelling methods

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Agricultural production is largely determined by weather conditions during the crop growing season. An important aspect of crop yield and production estimation concerns crop growth development. The occurrence of meteorological events such as frosts, droughts, waterlogging or heat stress during the crop life cycle or during certain phenological stages helps explain yield variability of arable crops.

Current data driven models have predominantly concentrated on dealing with the relation between meteorological data and crop development. A lot of data are available on the input side to include soil and weather, but very few on the output side: phenology at the field scale. A new era of satellite remote sensing and sensor technology has already offered a paradigm shift towards data rich environments with unprecedented possibilities to monitor crop development at higher spatial, temporal and spectral resolutions. Combining modelling and statistical analysis with monitoring from remote sensing presents new opportunities to understand crop phenology as a basis for further developments in the agriculture and bio-economy sector.

Examples of arable crop phenology assessment will be drawn from different Flemish, Belgian and European projects.

References

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