# Dataset Generation Based on Agronomic Simulation Models

## Provider service

ARVALIS

## Link to content

https://agrifoodtef.eu/catalogue-of-services/dataset-generation-based-agronomic-simulation-models

## Type of Sector

Arable farming

## Accepted type of products

Design / Documentation

## Type of service

Provision of datasets

## Description

Our Agronomic Model-Based Dataset Generation service provides agricultural data derived from our internally developed agronomic models, designed and validated by our experts using experimental data. By simulating real-world agricultural conditions, we generate key insights such as growth stage dates for cereals, biomass production, nitrogen requirements, and carbon sequestration, offering highly reliable datasets to support crop modelling, soil analysis, climate impact assessment, and precision agriculture.

## How can the service help you

Companies developing AI-driven solutions for agriculture can integrate our datasets into their AI models for better prediction and optimisation. Moreover, one key benefit of our service is the ability to reduce reliance on field trials by providing reliable model-generated datasets without the time, cost, and constraints associated with extensive field testing.

## How the service will be delivered

Customisation options are available; however, certain limitations and specifications should be considered regarding the solution to be tested. The service relies on the input data provided, and the models are parameterised and validated within the French context, meaning the simulated data are most relevant in this setting. Additionally, depending on the agronomic model used and the type of data being simulated, the required input data may vary. This service is available on cereals, potatoes, forage, and flax.

## Service customisation

Our service is delivered either through a dedicated API for seamless integration into existing systems or in standard formats such as CSV, JSON, or database-ready formats for easy data processing and analysis. The execution time depends on the delivery method: with the API, it can be executed simultaneously, while for other formats, processing typically takes between 2 to 7 days. To generate data using agronomic simulation models, we could require specific input data, including cultivar, soil type, and sowing date, for example. These parameters are essential for accurate simulations and ensuring the relevance of the generated data.