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KEY-WORDS:  
MODEL · DURUM WHEAT · YIELD ·  
PROTEIN · LOSSES · PARAMETRIC  
INSURANCE

## PROJECT TITLE

### Development of a prediction model for durum wheat yield and yield losses

## PROFILE

I am a second-year executive PhD student in Crop Science specialized in Modelling of Crop Physiology, and employee in Horta S.r.l.

## AFFILIATION

Department of Sustainable Crop Production (DI.PRO.VE.S.)  
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## LANGUAGES



Mother language



Level B2

## HOW TO REACH ME

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## Steps of the research

- Development of a prototype mechanistic model for the prediction crop yield and crop losses in durum wheat with an explicit set of model parameters (parameterization).
- DSS (Decision Support System), granoduro.net, implementation with prediction yield model.
- Ad hoc field trials in the Horta's experimental centres at Foggia and Ravenna to collect data on the stress components that are not properly addressed in the historical dataset.
- Model testing by using the historical and ad hoc dataset, and possible re-parameterisation of the model.

## Main Results

Development and validation of a model for the prediction yield, protein content, and yield losses in durum wheat to be used as an oracle for parametric insurance.

## Research Contribution

This research will evaluate the possible use of the model as a reliable tool for parametric insurance. As part of the Ploutos project, parametric insurance will be used by Barilla to improve multi-annual cultivation contracts to farmers and the model will distinguish which part of possible yield losses is caused by the unmanageable events.

## Collaborations

Ploutos project – SIP 2

Barilla S.p.a.

REVO Insurance S.p.A.

Con.Cer. - Organization of cereal producers

## Why should you care?

Unfavorable weather conditions, such as water stress and heat waves, can reduce durum wheat production and have large economic consequences on farmers. Protecting farmers by taking out insurance can reduce these issues.