



## Influence of Climate Change on Damages to Crops Produced by Hail Events at Spanish Peninsular Region

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Climate, often the most critical factor for the sustainability of agricultural systems, dictates which crops will grow in a region. Specific weather events, such as hail, will affect yield or quality of crops depending on the affected species, the temperatures reached and the timing of phenology. Predicting the occurrence of hailstorms is one of the most complicated tasks in weather forecasting because of the small area of land that is usually affected, and because of the short time hail events last.

The importance of the study is related to the insurance of the different crops, since the damages are perceived as increasing during the last years, and consequently the amount of the economical compensations to crop producers. Under these conditions the State Agricultural Insurance Body of the Ministry of Environment and Rural and Marine Affairs were interested to know the extent of the new changing conditions to analyze the viability of the actual system and the potential future changes.

The results demonstrate trend variability on damage risk to different crops produced by hail events at the Spanish peninsula. Meanwhile in some provinces show a negative trend in others are positive. However, all of them present several oscillations that question these trends.

The research evaluated also the average minimum temperatures in summer for 405 weather stations over the peninsular region of Spain since 1981 until 2007, time in which crop insurance data can be verified. This study doesn't confirm the results obtained in France that relate hail damage registered with the average minimum temperatures.