

The incidence of extreme weather events on Veneto region agriculture in the period 1978-2003

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This study about the incidence of calamitous events on agriculture in the period 1978-2003 has been realised collecting the documents relative to the national compensations paid to Veneto Region during the **26 years**. The calamitous events and the atmospheric adversities compensated by the Ministry of Agricultural and Forestall policies are: **hail, winter frost, persistent rainfalls, drought, snow excess, sirocco wind, alluvial rainfalls, earthquakes, tornados, spring and autumn frost, violent winds, sea storms**. The **most frequent compensated event** has been hail with a percentage of 75%, followed by tornados, alluvial rainfalls, winter and spring frost with respectively 13, 5.8 and 3.2 percent. Only the 1.6 % of the compensated events have been drought events. In this period the **59.7 percentage of the compensated municipalities** have been damaged from hail, the 9.2 % from draught and the 7.5% from snow excess. As we can notice the draught event that resulted not so frequent, only 1.6 % of the total, is in fact a territorially very extended event. In 26 years, 358 hail events have been compensated in 3423 municipalities. it means that on average the **territorial incidence** of each hail event has injured 9.6 municipalities and each drought event 66.1 municipalities. **The territorial distribution** of the hail events has given the chance to spot the municipalities that are more subjected to this adversity. **The calendar distribution** of the compensated hail events for the more subjected municipalities, has given the chance to identify that the third decade of July and the third decade of august have been the more affected from hail events. The **future developments** of this work will focus on the increase of the territorial scale from the municipal level to the “site level”; this analysis will give the chance to study in a more accurate way the “territorial” incidence of the atmospheric adverse events, and correlate their synoptic behaviour and calendar to the phenology phases, and to the damage level of agriculture productions. In addition, as shown in this paper, meteorological radars are capable of detecting precipitating systems and estimate probabilities for the occurrence of hail. Their areal and temporal coverage, on the scales of 1km and 5minutes, therefore allow, for example, for a monitoring and nowcasting of an ongoing severe thunderstorm. In conclusion this study wants also to support the elaboration and calculation of insurance policies.