

SoildiverAgro project

Adoption of new management practices to increase crop production and quality



THE WHAT AND WHY

Influence of environmental conditions on the presence of *Phytophthora infestans* in the environment of potato crop

Galicia is one of the main potato producing areas in Spain. One of the pathogens that causes the greatest economic losses in this crop is the oomycete *Phytophthora infestans*, responsible for late blight. To propose sustainable control measures, it is necessary to know the influence of climate on its development. This was one of the objectives set in A Limia (Lusitanian area) for two years, 2021 and 2022. For this purpose, the amount of *Phytophthora infestans* sporangia present in the environment during both growing seasons was measured and related to the meteorological variables measured with an autonomous weather station located in the potato field.

Environmental conditions were slightly different between the two years. During the 2021 growing season, the average temperature was 17.5°C while in 2022, it was 18.9°C.

Considering the number of days when any of the hours exceeded 30°C, in 2021 it was 18 days while in 2022 it was 47 days. The average relative humidity of the crop cycle in 2021 was 80.3% and in 2022 it dropped to 78.9%. Considering the number of days when the relative humidity fell below 50% at any time, there were 66 in 2021 and 82 in 2022. The average number of sporangia recorded in the 2021 growing season was 595.5 sporangia compared to 17.5 sporangia in 2022.

Considering a daily risk concentration of 10 sporangia or more, the number of days in 2021 with this concentration was 18 days compared to 1 day in 2022. In both years these risk days mostly occurred at the end of June. Therefore, the life cycle of *Phytophthora infestans* may be affected by high temperatures and dry conditions.



1. Symptomatology of late blight in a potato leaf and sporangia.



2. Volumetric air sampler.



3. Autonomous weather station.

KEYWORDS

Late blight, potato, meteorological variables, sporangia, daily risk concentration.

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