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Climate risks on potato yield in Europe

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The yield of potatoes is affected by water and temperature during the growing season. We study the impact of a suite of climate variables on potato yield at country level. More than ten climate variables related to the growth of potato are considered, including the seasonal rainfall and temperature, but also extreme conditions at different averaging periods from daily to monthly. A Bayesian hierarchical model is developed to jointly consider the risk of heat stress, cold stress, wet and drought. Future climate risks are investigated through the projection of future climate data. This study contributes to assess the risks of present and future climate risks on potatoes yield, especially the risks of extreme events, which could be used to guide better sourcing strategy and ensure food security in the future.