Ragweed to become more widespread in Northern Europe as the climate changes

February 28 2014, by Alex Peel

The highly allergenic plant ragweed is set to become more widespread throughout Northern Europe as the climate changes, according to a new study.

Its authors say that, if farming practices in Britain were to change in response to a warming climate, the weed could even become established in the UK.

'It's an on-going invasion event,' says Dr Jon Storkey from Rothamsted Research, who led the study. 'As the climate warms, we expect the physical limits of the invasion to extend northwards and take in parts of the UK and Denmark.'

'But the way we use the land is also important,' he adds. 'Ragweed needs

open ground and lots of regular soil disturbance in the spring or summer to establish itself.'

'At the moment large areas of appropriate habitat for ragweed don't exist in the UK. But if, as a response to climate change, we started to grow more sunflower and maize, then it could open the door for ragweed here.'

'We're not facing an imminent risk, but we're on a watching brief.'

Ragweed is a viscously allergenic plant that can affect even those who have never suffered from hay fever before. The young and elderly are particularly vulnerable.

It flowers in late summer, and so can extend the hay fever season into August and September wherever it takes hold.

Native to the Americas, it has spread rapidly throughout Europe since the 1950s. It is already established in the French Rhône valley, Austria, Hungary and Croatia, where it is causing significant health problems.

The team used a computer model to predict how the ragweed invasion could spread as the climate warms. The model simulates the daily growth of the plant in different weather conditions.

It predicted that, under the warmer conditions of the future, the plant will be able to survive to maturity in increasingly northerly locations across Europe, such as the UK and Denmark. In the south, its spread is likely to be halted by the stresses of drought in Spain and southern Italy.

Ragweed populations have recently been established in the North of France and there have been reports of the plant in the UK. But Storkey says these are likely to be contained to isolated populations along

transport routes like railways and motorways unless farming practices change.

As more carbon dioxide is introduced to the atmosphere, there are additional concerns that ragweed's pollen could become even more potent. Establishing this link will be the subject of further research by the team.

More information: Jonathan Storkey, Pierre Stratonovitch, Daniel S. Chapman, Francesco Vidotto, Mikhail A Semenov, 'A Process-Based Approach to Predicting the Effect of Climate Change on the Distribution of an Invasive Allergenic Plant in Europe,' *PLOS ONE*, 2014

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