

Impact of bruchid beetle on the agronomic value of faba bean seeds

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1. Introduction

The broad bean bruchid beetle (*Bruchus rufimanus*) is a pest of faba bean (*Vicia faba*). The beetle larvae consume only the inside of faba bean seeds during all the larval development. Then they leave a characteristic round hole when exiting the seed (fig. 1).

For the European market a batch of seed can't be sold for human consumption over 1-3% of damaged seeds, and 10% damage for animal feeding.

The Irish faba bean production increased greatly since 2015. In 2016 Teagasc reported the first damaged seeds by the bruchid beetle in Ireland. The damage caused by bruchid beetles have continued to increase and expand in Ireland. One goal of our research is to assess the damage level and observe the expansion of the population across the country.

2. Pest & Damage level in Ireland in 2023

In 2023, 15 sites have been assessed for bruchid beetle damages (fig 2):

- All sites had damage caused by the bruchid beetle
- 2 sites obtained higher percentage of damages than the threshold allowed by the European market
- Important differences were observed between neighbour sites

From the same sample the number of natural enemies (larval parasitoid) have been calculated (fig 3):

- The population is highly developed in 1 site in Carlow
- 3 sites don't show any trace of bruchid beetle's parasitoid

3. Next step

This experiment will be repeated in 2024 (sampling in process) and 2025.

A genetic study started in 2023 to characterise the population in Ireland UK and a number of European countries.

Figure 1: damaged seeds and the broad bean bruchid beetle



Figure 2: Proportion of damaged seeds in samples collected after harvest in 2023

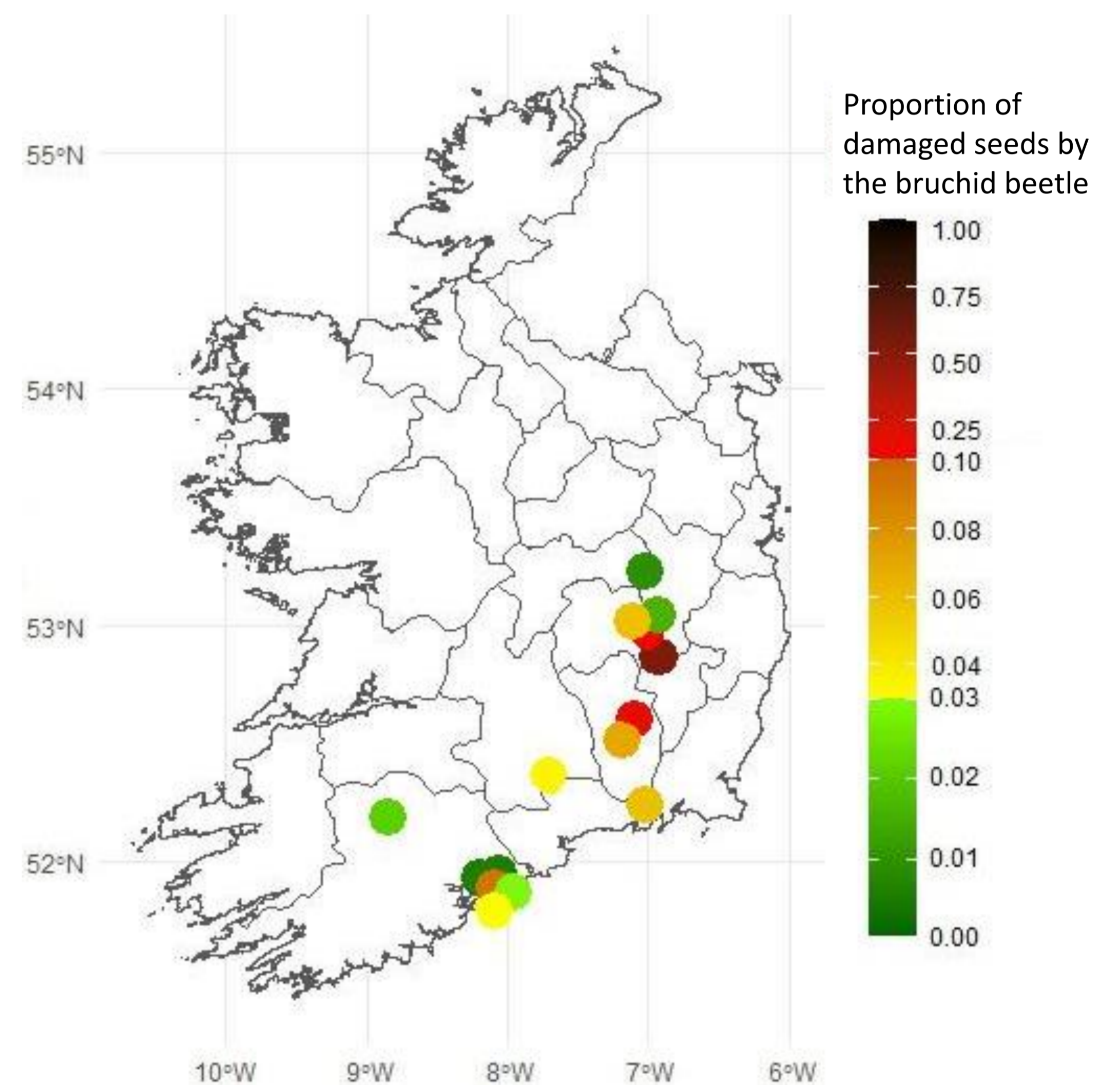


Figure 3: Proportion of parasitoid of bruchid beetle in sample collected after harvest 2023

