To bee or not to bee

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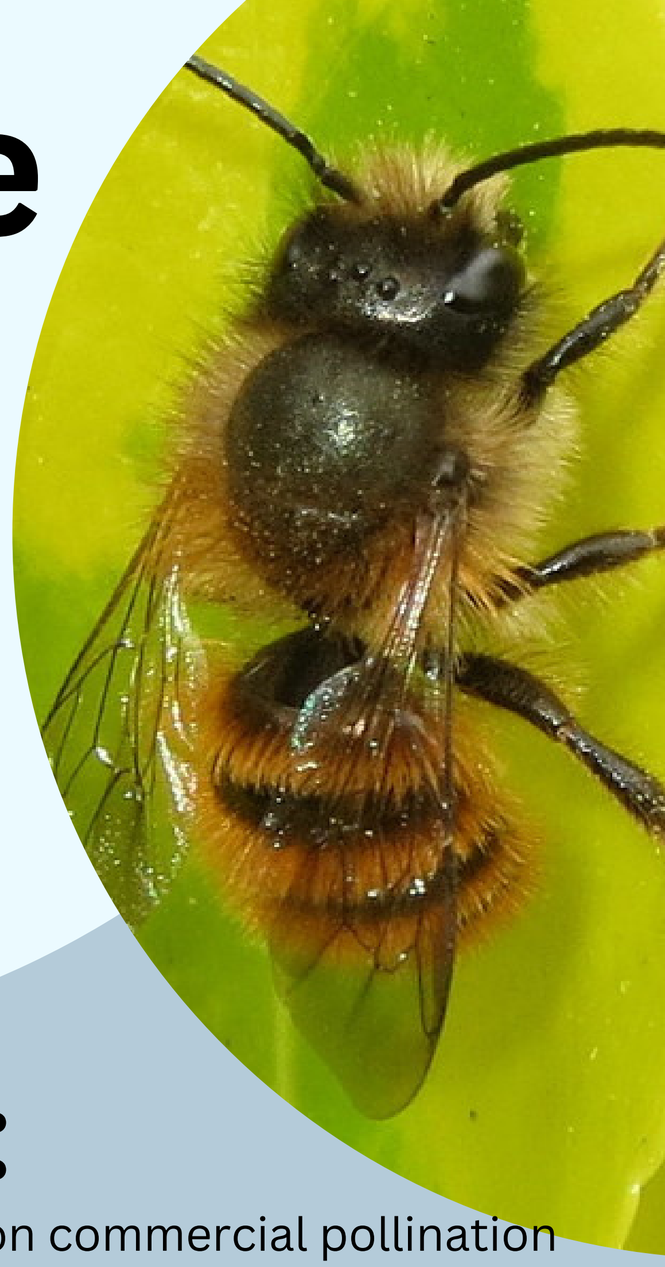

Problem:

Food production relies on commercial pollination where pollinators are reared and kept at artifically high levels. Growers then buy or rent pollinaotrs and artifically introduce them to an area that requires pollination

Current commerical pollinators are becoming expensive and their supply unreliable.

Solution?

A new pollinator species for commercial use

The presence of solitary bees improves pollination even when honeybees are present, therefore red mason bees are investigated for commercial pollination of soft and top fruit.

Red mason bee

Osmia bicornis, the red mason bee is used on a commerical scale in mainland Europe for orchard polliantion.

Red mason bees have small dispersal distances, prefer tree pollen and do not sting.

We know very little about red mason bee basic biology and the potential harm artifcially high, or translocated populations could cause.

Questions:

To assess is red mason bees are sutible for commerical use, four key areas need to be better understood:

Track how populations of red mason bees disperse to nesting sites though orchards using RFID chips

Use traditional pathology to indentify diseases affecting red mason bees and look at the most common diseases when red mason bees exist at high concentrations

Use microsatalites to compare bees from across the UK and mainland europe to understand if populations of red mason bees are genetically different to each other

Identify immune associated genes within the red mason bee genome in order to understand their evoluntionary investiment to diseases

A pollen mite found on a red mason bee cocoon

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