



Nederlandse Voedsel- en
Warenautoriteit
*Ministerie van Landbouw,
Natuur en Voedselkwaliteit*

The quarantine cookbook

Recipes for disaster

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EPPO Webinar on Communication

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Importance of plant health

REGULATION (EU) 2016/2031 OF THE EUROPEAN PARLIAMENT OF THE COUNCIL

of 26 October 2016

on protective measures against pests of plants, amending Regulations (EU) No 228/2013, (EU) No 652/2014 and (EU) No 1143/2014 of the European Parliament and of the Council and repealing Council Directives 69/464/EEC, 74/647/EEC, 93/85/EEC, 98/57/EC, 2000/29/EC, 2006/91/EC and 2007/33/EC

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

- (4) Plant health is very important for plant production, forests, natural and planted areas, natural ecosystems, ecosystem services and biodiversity in the Union. Plant health is threatened by species injurious to plants and plant products which now present a greater risk of being introduced into the Union territory owing to globalisation of trade and climate change. In order to fight that threat, it is necessary to adopt measures concerning the determination of the phytosanitary risks posed by those pests and the reduction of those risks to an acceptable level.



Euh... I am bored... what about you?





Who likes carrot cake?

**312 plant pests also
LOVE carrot cake!**





The recipe

- > 400 g carrots (grated)
- > 300 ml sunflower oil
- > 300 g self-rising flour
- > 250 g caster sugar
- > 125 g walnuts
- > 5 eggs
- > 2 teaspoons vanilla extract
- > 2 teaspoons cinnamon
- > Pinch of salt
- > 400 g cream cheese
- > 100 g butter
- > Walnuts for decoration
- > 150 g powdered sugar

1. Preheat the oven to 180°C. Beat the eggs, sunflower oil, sugar, and vanilla extract for a few minutes.
2. Sift in the self-rising flour, add salt and cinnamon, and mix with a wooden spoon.
3. Fold in the grated carrots and chopped walnuts.
4. Line the springform pan with baking paper, grease the edges, and lightly dust with flour.
5. Pour in the batter and bake for 60 minutes.
6. Let cool.

7. Mix cream cheese, butter, and powdered sugar until smooth and creamy.
8. Once the cake has cooled, slice it horizontally. Spread half of the frosting on the bottom layer, then place the top layer back on.
9. Cover the top with the remaining frosting and garnish with walnut halves.





Which plants were needed for this recipe?



Daucus carota



Helianthus annuus



Beta vulgaris subsp. *vulgaris*



Vanilla planifolia



Zea mays



Triticum aestivum



Juglans regia

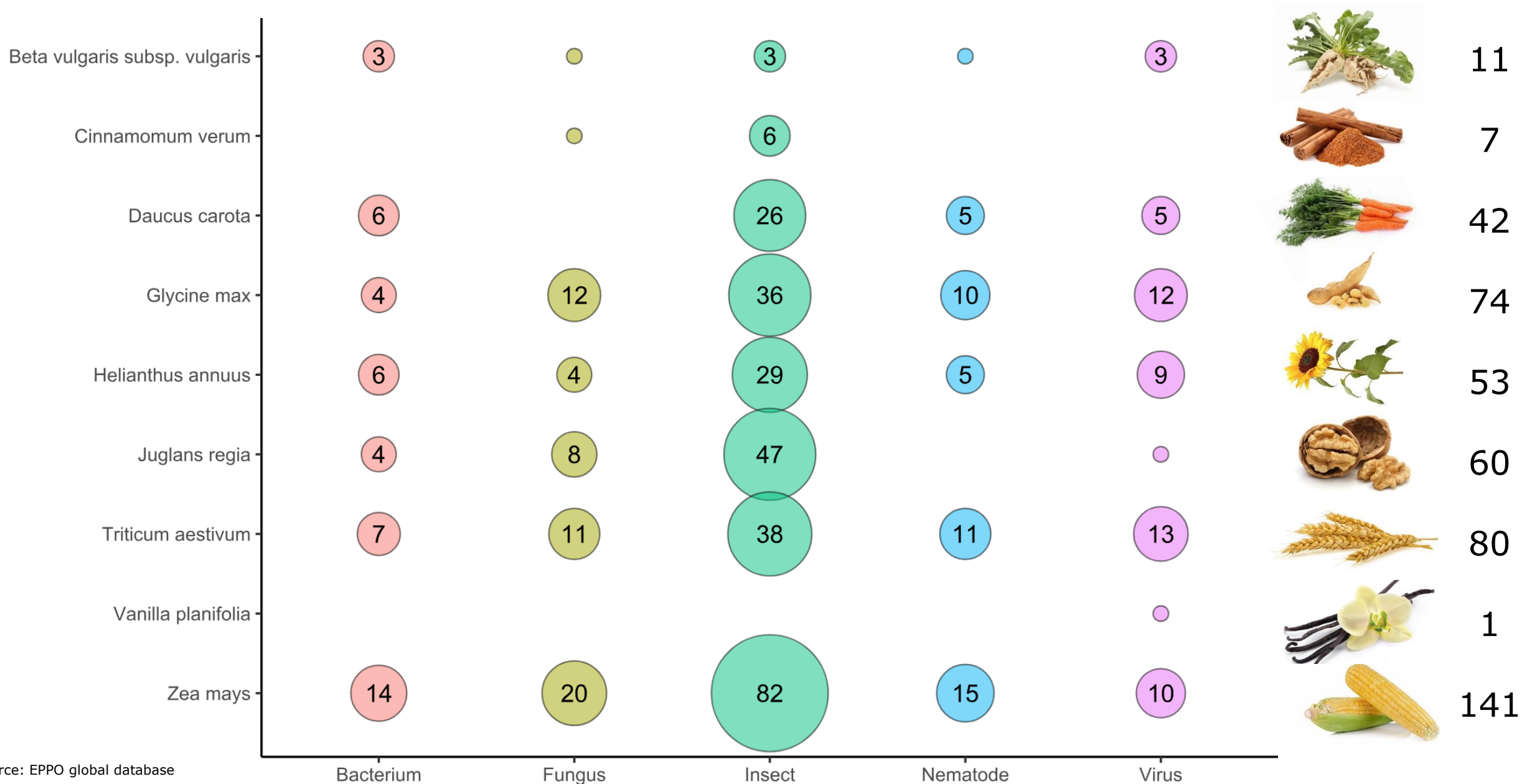


Cinnamomum verum



Glycine max

Associated pests



Regulated pests



11



4



7



42



20



74



25



53



18



60



20



80



14



1



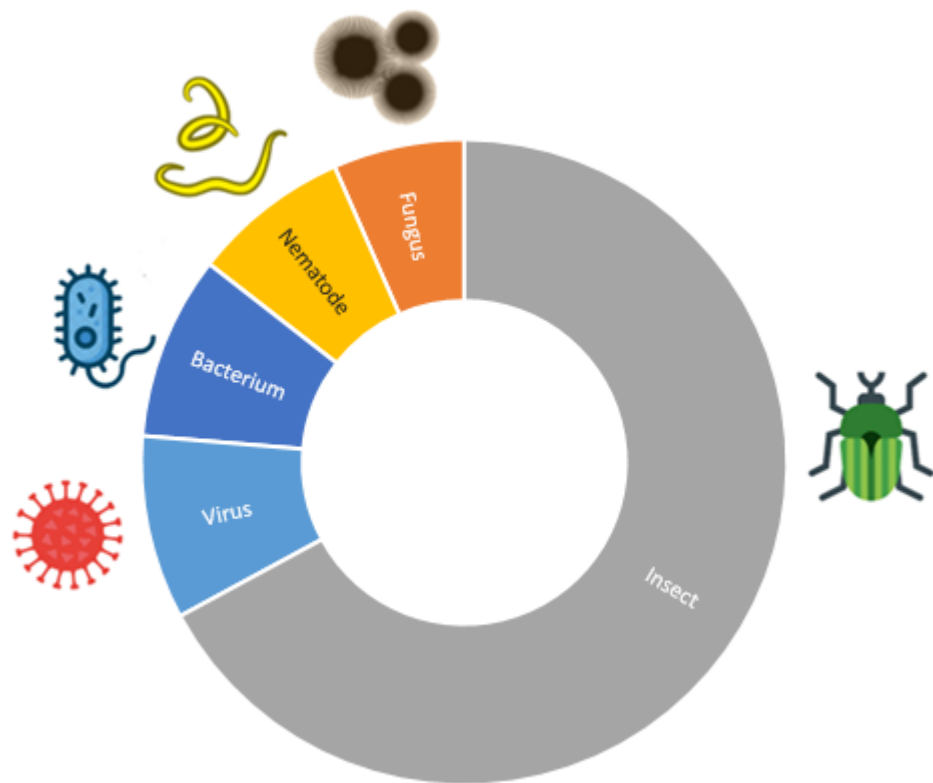
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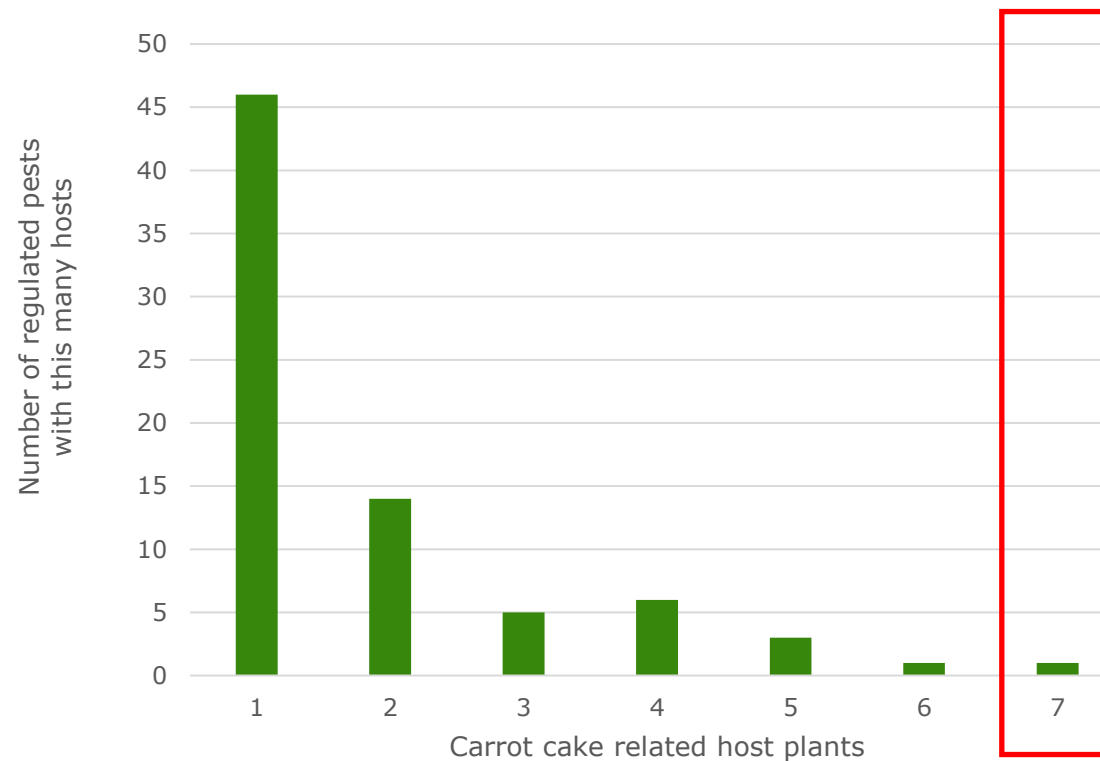
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76 different regulated species



Number of carrot cake related hosts per regulated species



Spotlight species

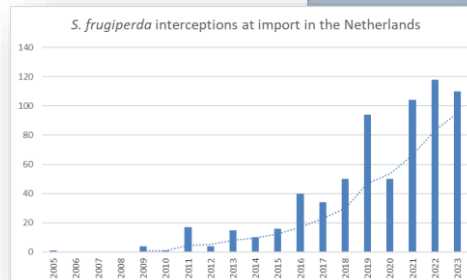
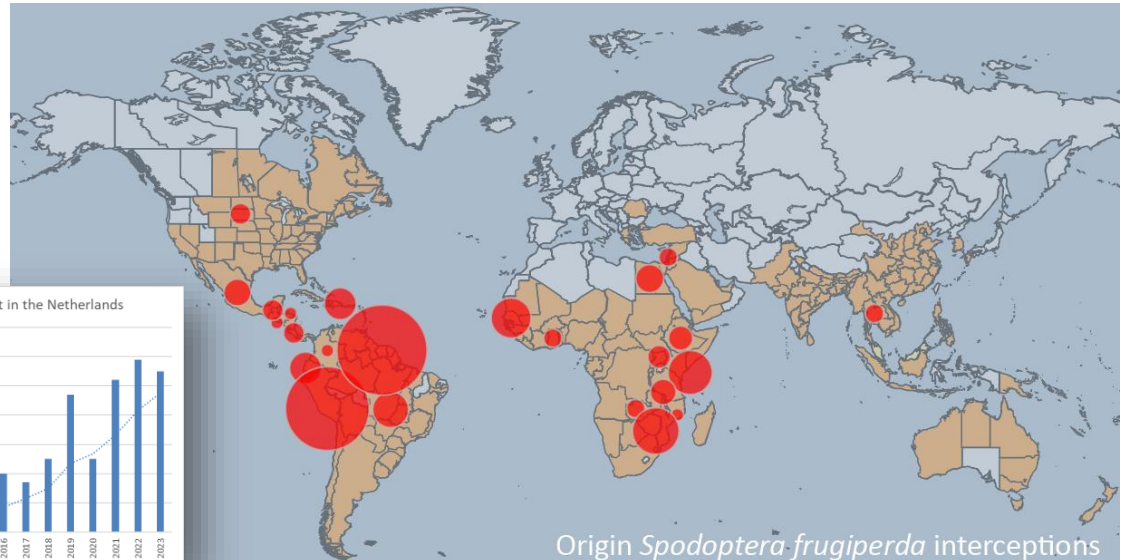
Spodoptera frugiperda
fall armyworm



Profile

Nocturnal moth. Larvae can feed on more than 80 different plant species. A female lays up to ~1,500 eggs. Life cycle lasts about 30 days at 25°C. Originally from the Americas, but has recently spread to Africa, Asia, and Europe, with international trade and transport playing a major role in its global spread, causing billions in crop damage worldwide.

Quarantine Cookbook



Origin *Spodoptera frugiperda* interceptions

NPPO-NL: 2005-2023

The quarantine cookbook recipes for disaster



Plants needed

Direct Plant Sources:

1. Carrots (*Daucus carota*) – For grated carrots
2. Sunflower (*Helianthus annuus*) – For sunflower oil
3. Wheat (*Triticum aestivum*) – For self-rising flour
4. Sugar beet (*Beta vulgaris*) or **Sugarcane** (*Saccharum officinarum*) – For caster sugar and powdered sugar
5. Walnut tree (*Juglans regia*) – For walnuts
6. Vanilla orchid (*Vanilla planifolia*) – For vanilla extract
7. Cinnamon tree (*Cinnamomum verum* or *Cinnamomum cassia*) – For cinnamon

Plants Needed to Feed Animals (Indirect Sources):

8. Maize/Corn (*Zea mays*) – Major feed crop for chickens (eggs) and dairy cows (cream cheese, butter)
9. Soybean (*Glycine max*) – Common protein source for livestock feed (chickens, dairy cows)
10. Alfalfa (*Medicago sativa*) – Important forage crop for dairy cows (milk for cream cheese and butter)
11. Grass species (e.g., *Lolium perenne* - Perennial ryegrass) – Used for pasture grazing by dairy cows

The plant species involved in producing the ingredients for your recipe are all susceptible to various pests that can affect their growth and yield. Carrots, for example, are often plagued by the carrot fly and aphids, which target their roots and leaves. Sunflowers are vulnerable to pests like the sunflower moth and beetle, which damage the flowers and seeds. Wheat, a key crop for flour, is frequently impacted by the Hessian fly and wheat aphids, which can stunt growth and reduce yields. Sugar beets and sugarcane, used for producing sugar, face threats from root aphids and borers, which can damage the plants and reduce sugar content.

Walnuts, harvested for their edible nuts, are at risk from pests like the walnut husk fly and codling moth, which infect the fruit and nuts. Vanilla orchids, essential for producing vanilla extract, are susceptible to mealybugs and thrips that can harm the plant's roots and flowers. The cinnamon tree, grown for its aromatic bark, faces threats from scale insects and bark borers, which can damage the tree's structure and reduce bark production.



Associated plant pathogens and pests

Plant Species	Carrot	Sunflower	Wheat	Sugar Beet	Walnut	Vanilla	Cinnamon	Maize	Soybean	Alfalfa	Grass
Carrot fly	3										
Carrot aphid	5										
Sunflower moth		4									
Sunflower beetle		12									
Wheat aphid			4								
Wheat Hessian fly			11								
Sugar beet root aphid				2							
Sugarcane borer				15							
Walnut husk fly					14						
Vanilla mealybug						13					
Vanilla thrips						10					
Cinnamon scale							16				
Maize codling moth								17			
Soybean pest									18		
Alfalfa pest										19	
Grass pest											20

Spotlight species

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Carrot cake

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Can we make this happen?



Thank you for your attention