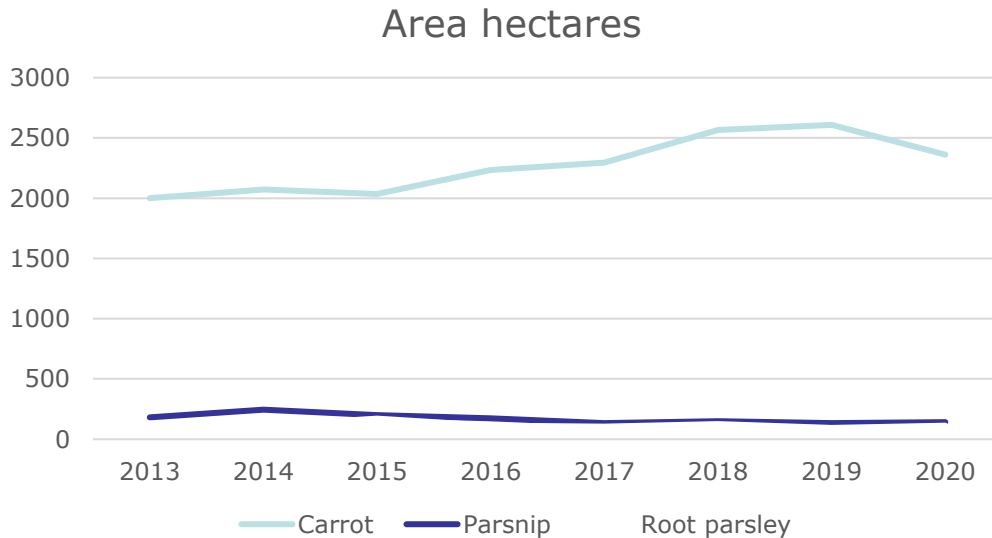


## Covid19

- Problems with workers from out of Denmark
- Eastern Europeans with Vaccine skepticism
- Covid19 in a big carrot farm in Denmark, production reduced in a period

## Area



Hectare	2020	Organic in 2020
<b>Carrot</b>	2361	44%
<b>Parsnip</b>	140	75%
<b>Root parsley</b>	113	54%

## Non-organic seeds

- OrganicXSeeds – OP varieties
- Normal procedure is to send an application for use of non treated nonorganic seeds
  - Good arguments
- Not enough in 2021...

## WHY?

- EU goal that we use 100 % organic seeds in 2030. In Denmark they are strict about giving dispensations in all vegetable crops.

## Weather

- March: Dry and good conditions for sowing of early carrots
- April/May: Cold, resulted in slow growth
- May: Extremely wet, challenge with sowing of autumn- and winter carrots
- June: Warm and dry, good growth and need of irrigation
- July: Wet, good growth
- August: Began wet, but very dry in the end and need of irrigation late
- Sept/Oct.: Dry, good conditions for straw covering
- December: Frost, but no damage

## Weed control

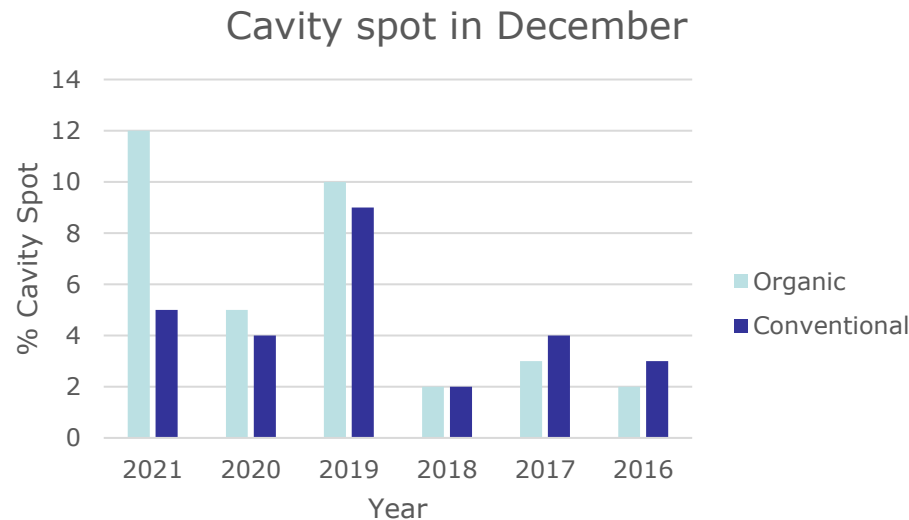
- Late germination of weed because of cold spring
- Good control in most places

## Insects and pests

- Turnip moth (*Agrotis segetum*)
  - A bit less than normal, later at the threshold than 2020
  - Not a lot of damage in the products now
- Carrots flies
  - More and earlier at some places
  - Problem to identify if small flies is small carrot flies or just flies
- Aphids not a big problem, a lot of ladybirds in the organic fields
- Mice, big problem in the winter 2019-2020, but not this year

## Disease control

- Healthy leaves in the autumn
- No big problems with Alternaria or Powdery Mildew
  - Use of Sodium Bicarbonate in organic (3 kg/ha every week from risk of mildew)
- Acrothecium
  - Bigger problem in strawed covered carrots (small spots in December)
- Cavity Spot
  - Next year experiment with calcium products e.g. Albina "The vegetable grower oct 2021"
  - Other ideas?

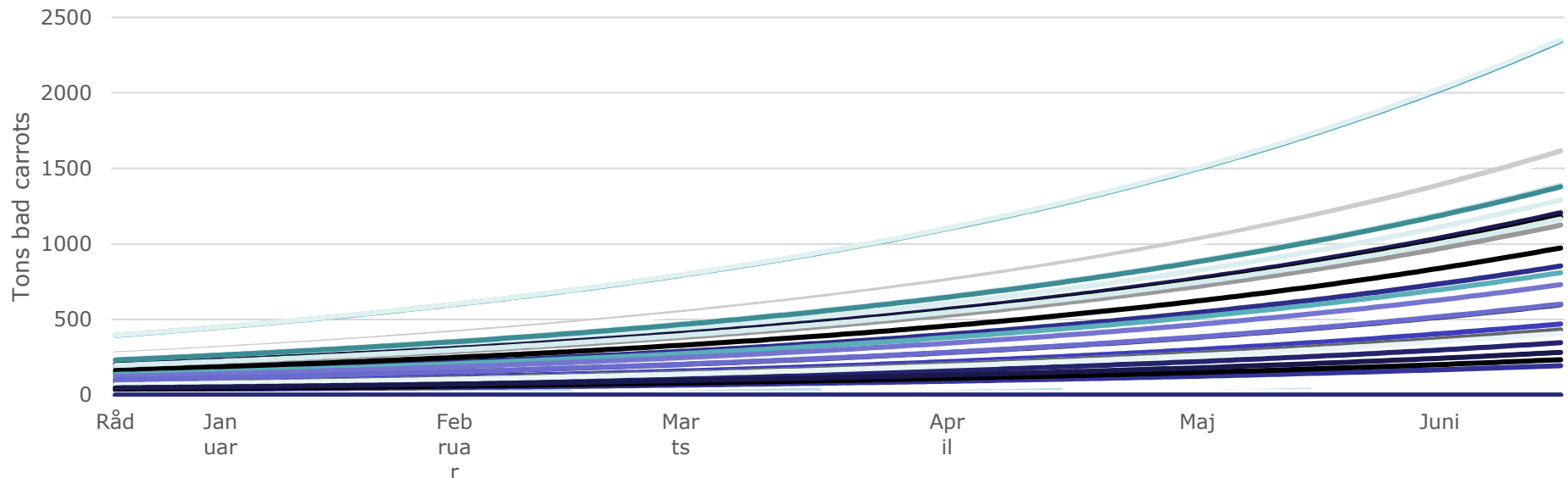


## Yield and market

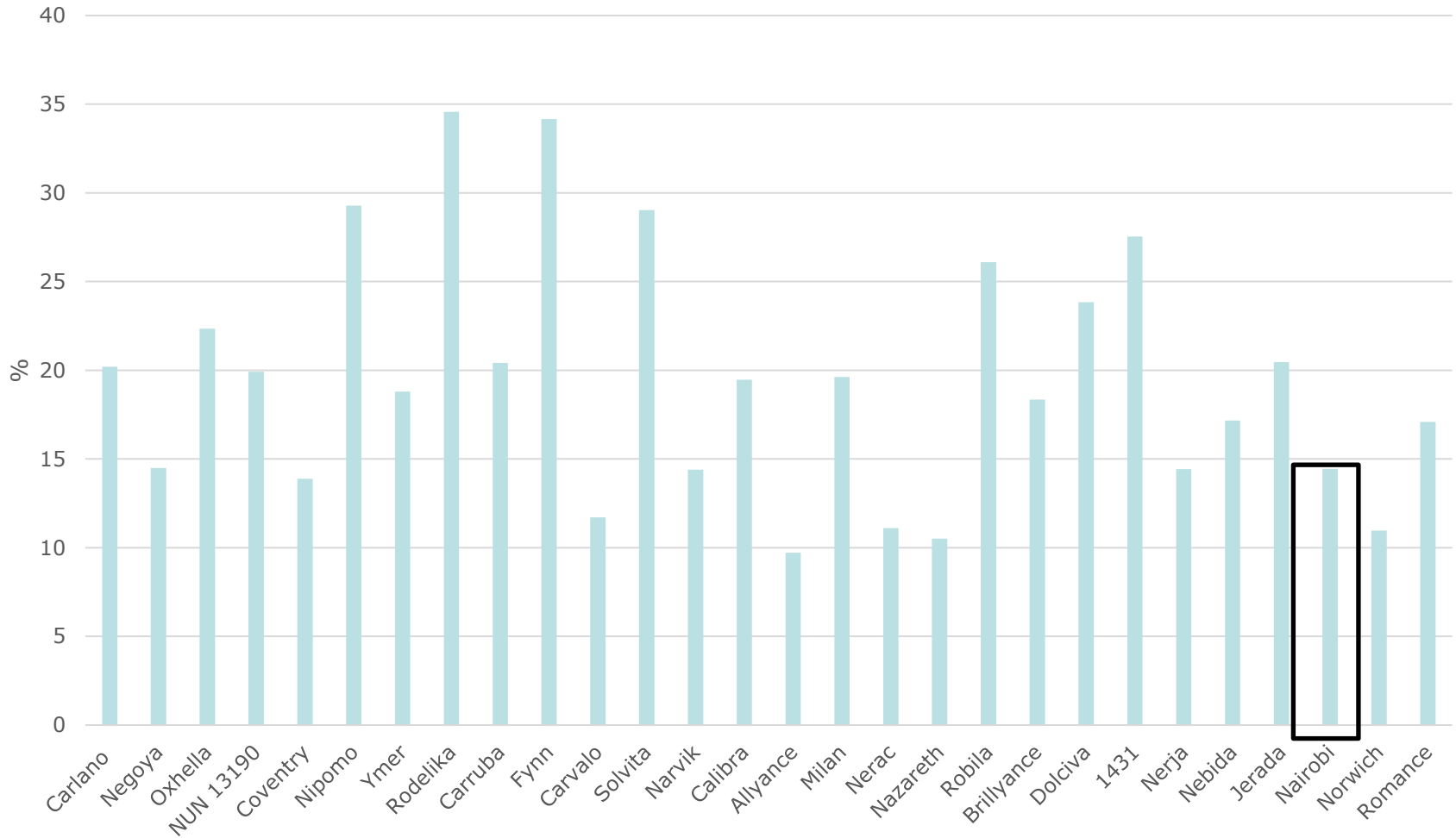
### Summer

- High yields because of good growing conditions in summer
- A lot of big/overripe carrots because of too many summer carrots in all European stocks
- Many carrots in strawed fields

Development of rot in the spring



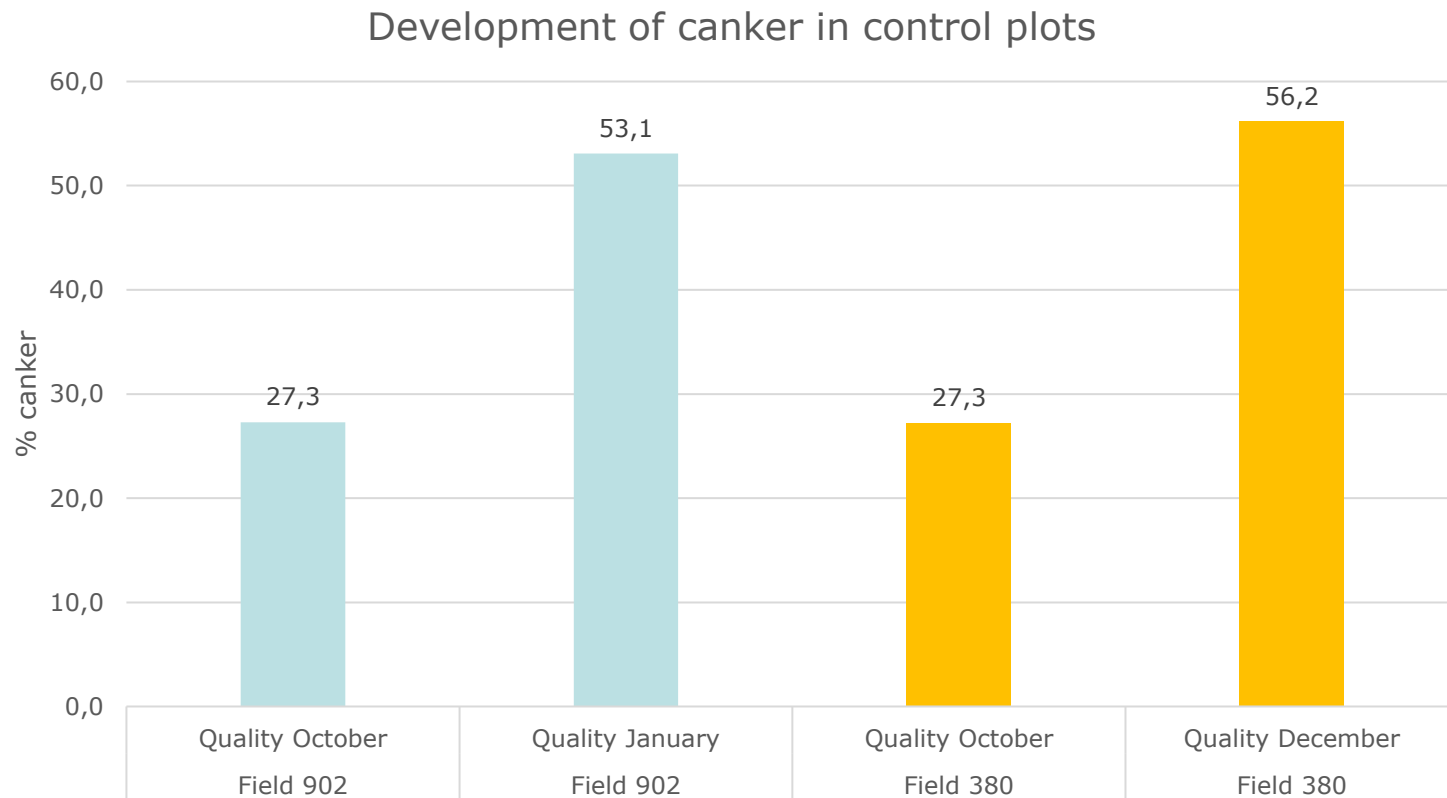
Cavity spot in different varieties, data from november 2021



## Fungi that causes Canker in Denmark

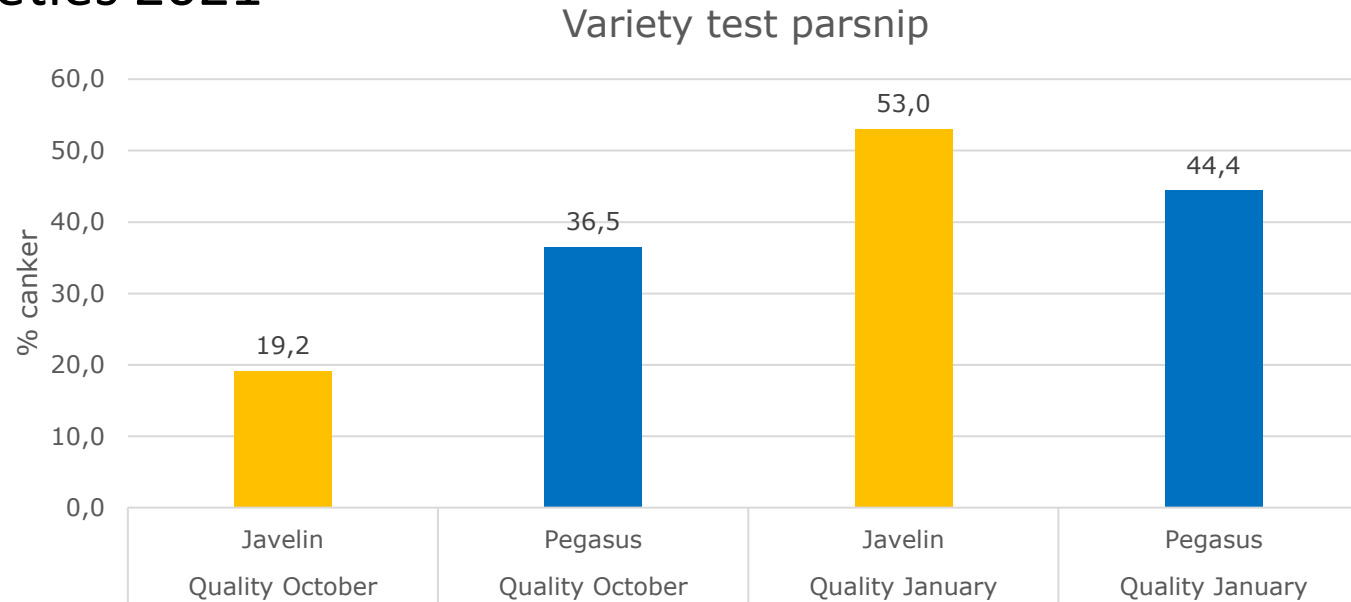
- *Itersonilia* spp. and *Cylindrocarpon* in Denmark

## Development of canker





## Varieties 2021



## Seed test

- Penicillium 2 % in 5 tested samples. Total 13 different seed lots
- No *Itersonilia* spp. or *Cylindrocarpon*

## "Biological agents"

Biological agent	1. dosage	2. dosage
Proradix	5 g. pr. ha.	10 g. pr. ha.
Trianum	50 g. pr. ha.	100 g. pr. ha.
Floragro	50 ml. pr. ha.	100 ml. pr. ha.
Trianum+ Floragro	25 g. + 25 ml. pr ha	50 g. + 50 ml. pr ha

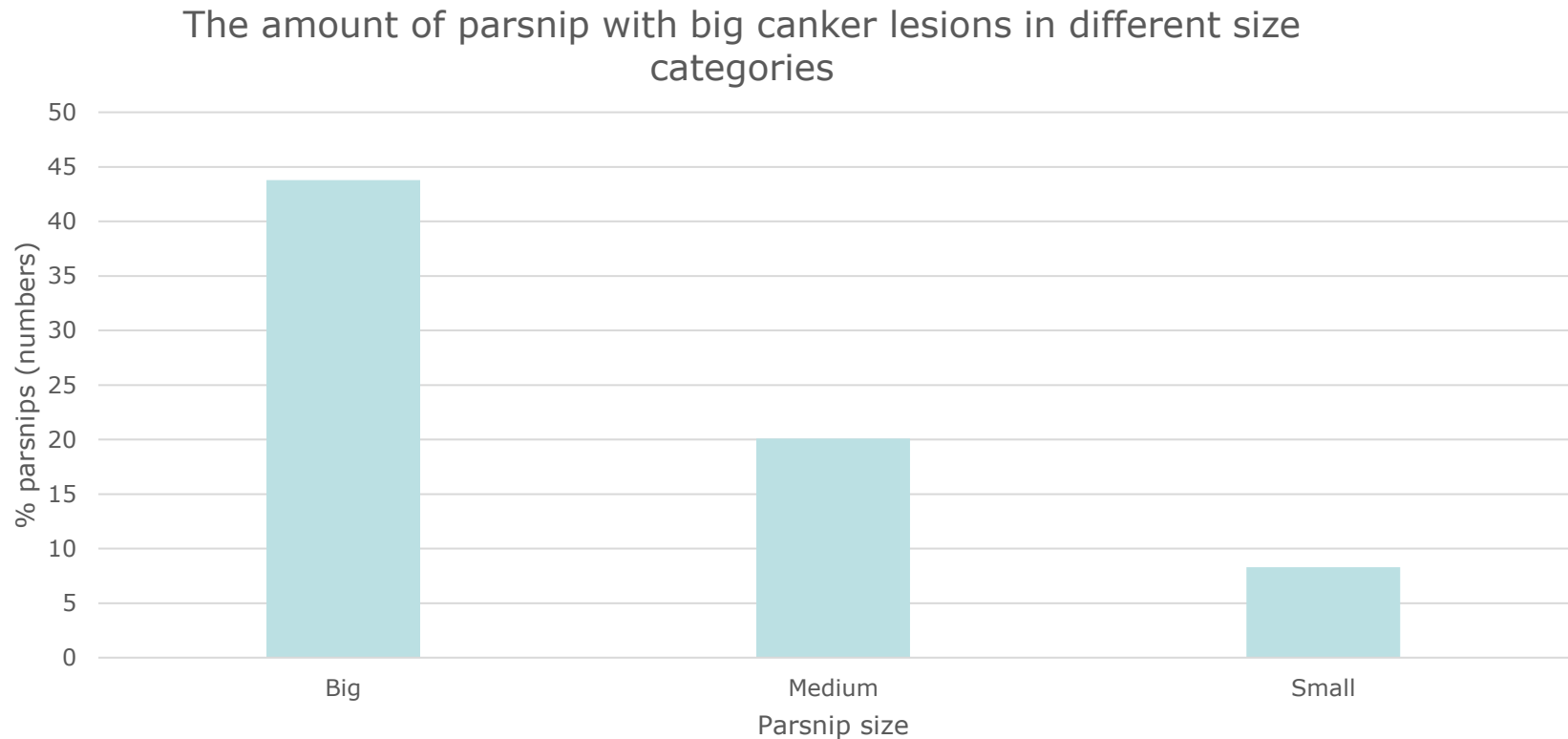
- Sprayed on the seed when sowing
- No effect, no better than control plots

## Fertilizer

- Basic 70 kg N per hectare + extra 10. July
- No effect of extra fertilizer from 0 – 50 kg N per hectare

## Parsnip size and canker lesion

- 30 plots sorted
- Bigger parsnips gets bigger canker lesions





## Growth model from day degrees

- 4 mio seeds per hectare, 220 seeds per meter row
  - More seeds;
    - More missing plants when harvesting
    - More plants with sand scratch and deformed
- About 1400 day degrees, but not enough repetitions
  - Temperature in 10 cm depth from basic temperature at 5 °C

## Foliage trimming of snack carrots

- The more cutting of, the more is the carrots growth stopped
- No more alternaria, cavity spot or mildew - very nice regrowth of the foliage
- No difference in taste
- More experiment next year with early trimming

## Inner/Outer line ratio

- This year 15 % more seeds in outer line contra inner line
- Not even in size in the lines
- More difference between the lines have to be testet in 2022

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Thank you for listening