

Nelson

SEED DEVELOPMENT®

Presentation



Torsten Nilsson

Managing Dir. Nelson Seed Development

Owner of Nelson Garden, The leading Seed and Garden company in the Nordic countries for hobby gardeners

33 million Euro in turnover

Started in 1933 by Torsten Nilsson's father

Managing director Nelson Garden 1978 - 2013



Nelson Seed Development AB is a company within the Nelson Garden Group.



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The Kamprad Family Foundation is part-owner through their investment company Entreprenörinvest Sverige AB. Ingvar Kamprad is the founder of IKEA.



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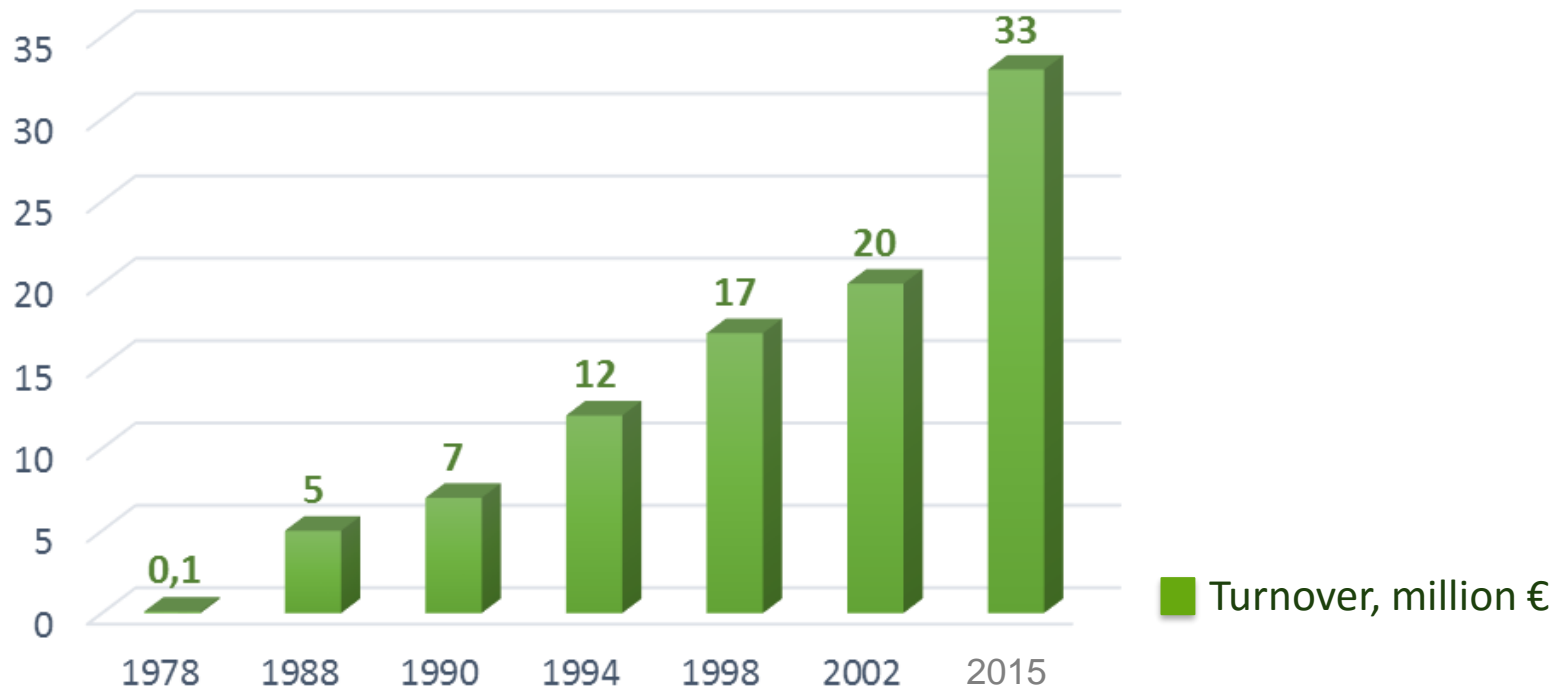


European
Commission

Horizon 2020
European Union funding
for Research & Innovation



Nelson Garden Group, *development*



**An innovation which can
make a big, big difference
for the home garden seed
market and grower**



Competitive profile

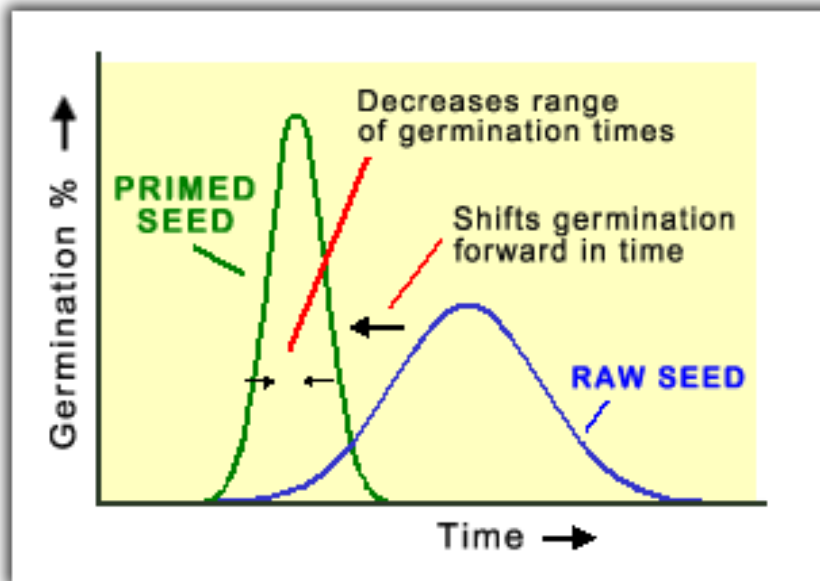
I will tell you about vitalisation, a new unique method of priming

- Vitalisation has all the benefits of traditional priming but none of its negative effects.



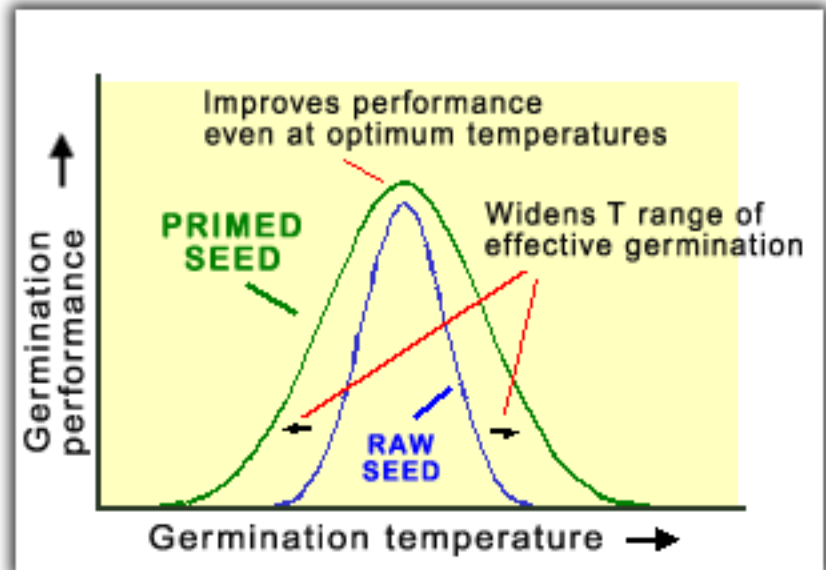
Effects

- ✿ Faster and more uniform germination
- ✿ Increased germination capacity



Effects

- ✿ Stress tolerance: Germination possible under a wider range of conditions (cold/warm, dry/wet)
- ✿ More vigorous seedlings
- ✿ Break seed dormancy



The good use

 **Much quicker and safer establishment**



The good use

- ✿ Much quicker and safer establishment
- ✿ **More vigorous seedlings**



The good use

- ✿ Much quicker and safer establishment
- ✿ More vigorous seedlings
- ✿ **Stronger weed competition**

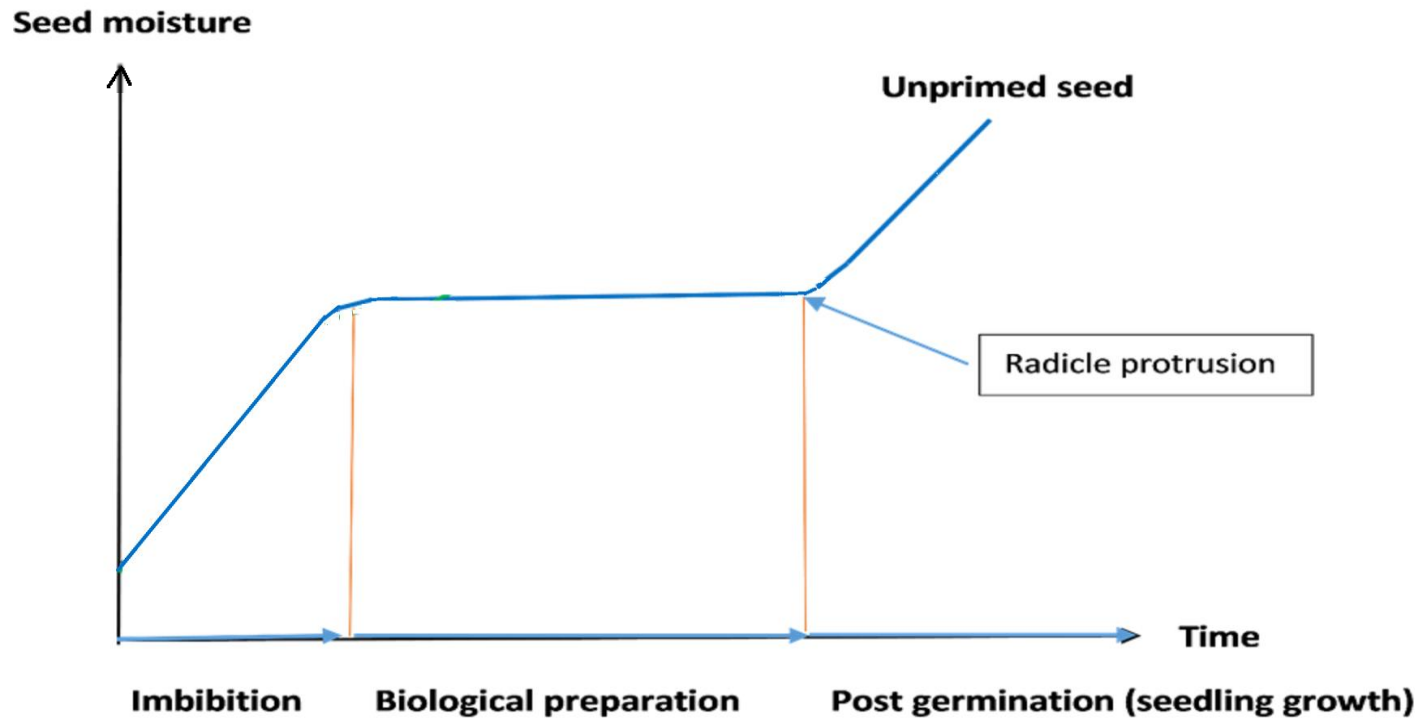


The good use

- ✿ Much quicker and safer establishment
- ✿ More vigorous seedlings
- ✿ Stronger weed competition
- ✿ **Earlier and larger harvest**

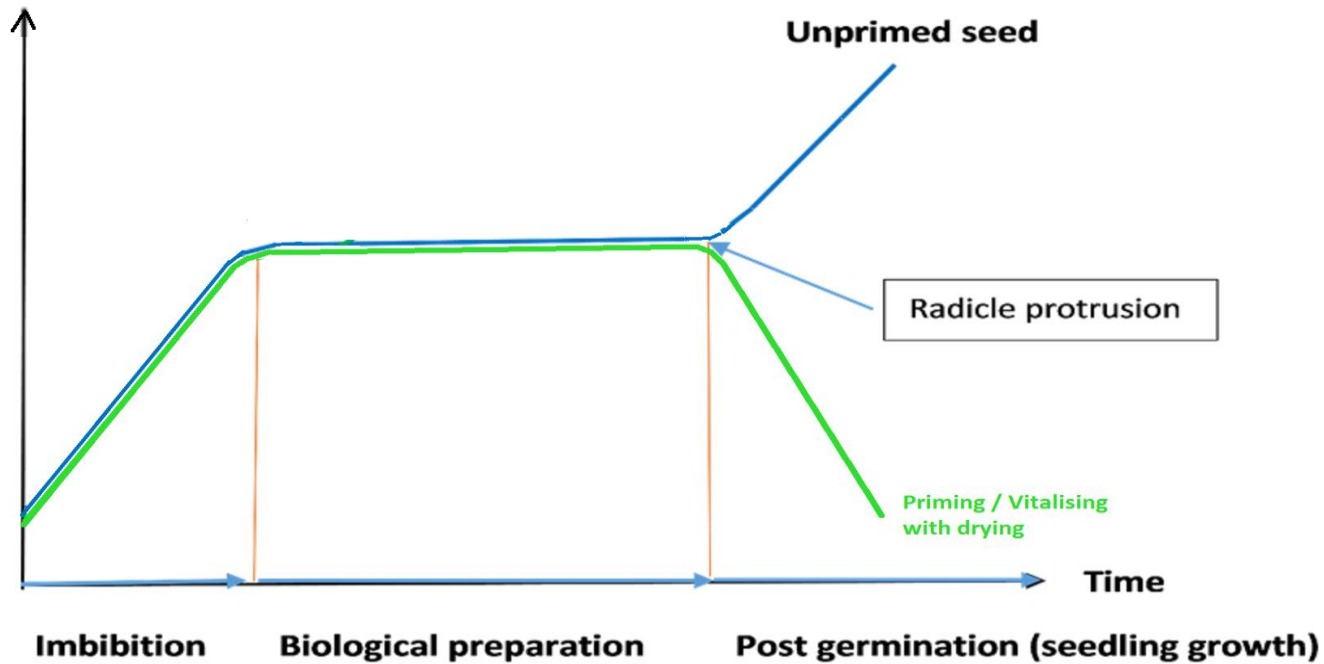


Germination process for unprimed seeds

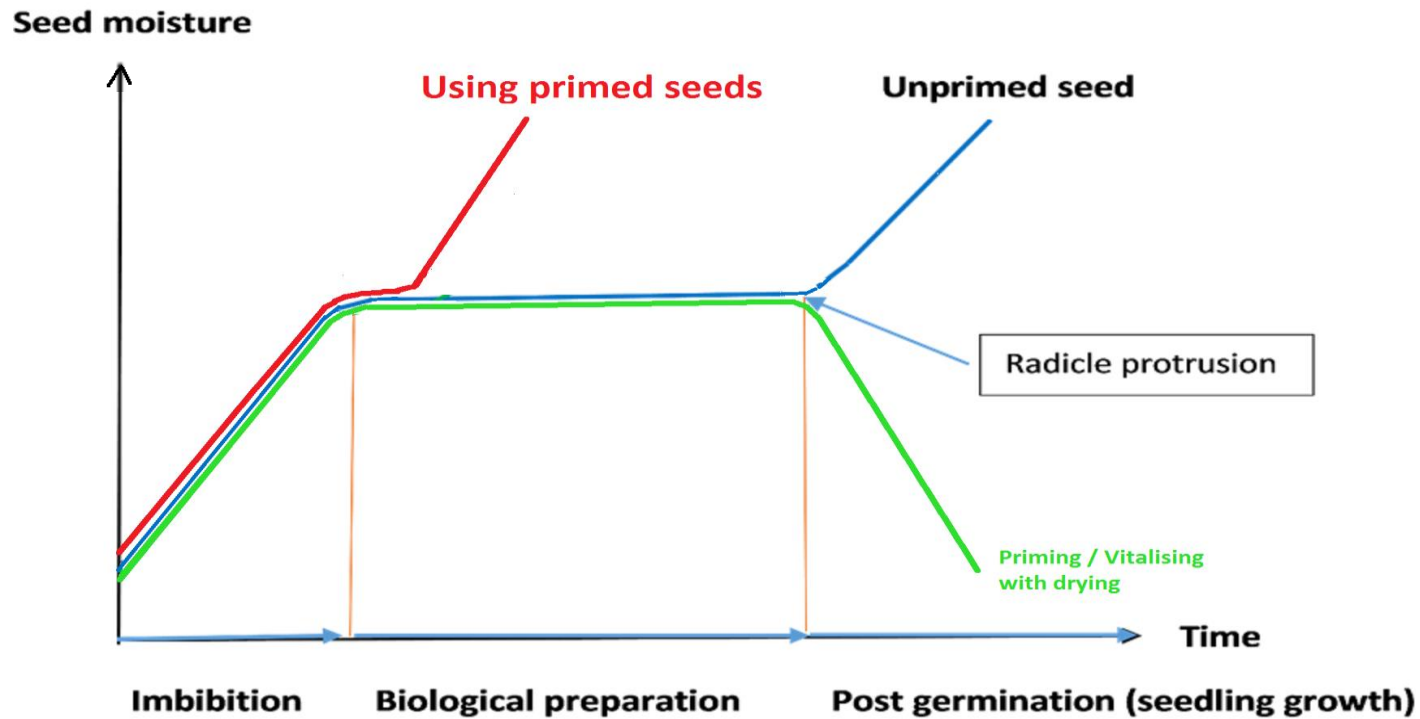


Process of priming / vitalisation

Seed moisture



Germination process for primed / vitalised seeds



The product

OPTIGROW[®]

VITALISED TO MAKE A DIFFERENCE

Registered trademark worldwide for
the product that you can use



OPTIGROW[®] *Effective for most species*

- ✿ Patented for all kind of seeds
- ✿ Tested at nearly 90 species and over 200 varieties
- ✿ Vegetables, field crops, forestry, Forage and Ornamental species (flower seeds)

PhD Tongyun Shen
R & D Manager



OPTIGROW[®] *Competitive profile*

Can be used for organic seeds – without any chemicals

Advantages of Vitalising

- ✘ Low cost
- ✘ Fast process (only some days)
- ✘ No chemicals added
- ✘ **Excellent storability**

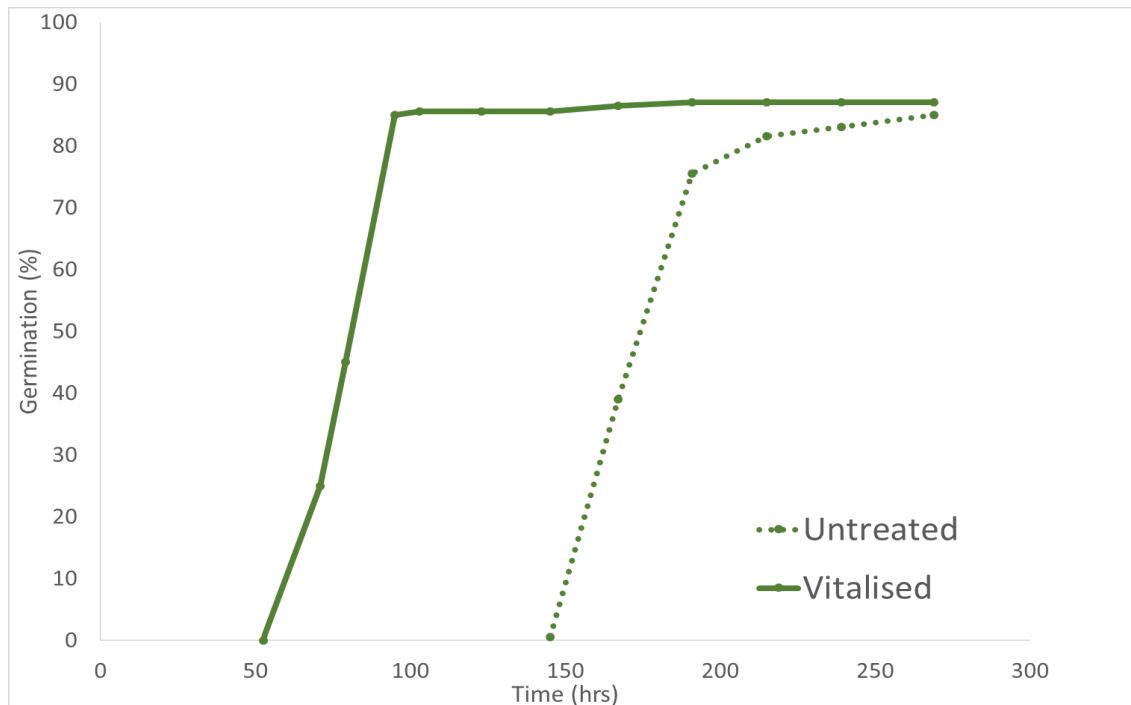
Traditional priming

- ✘ Unfavorable price level
- ✘ Time-consuming process (1-5 weeks)
- ✘ Negative impact on storability



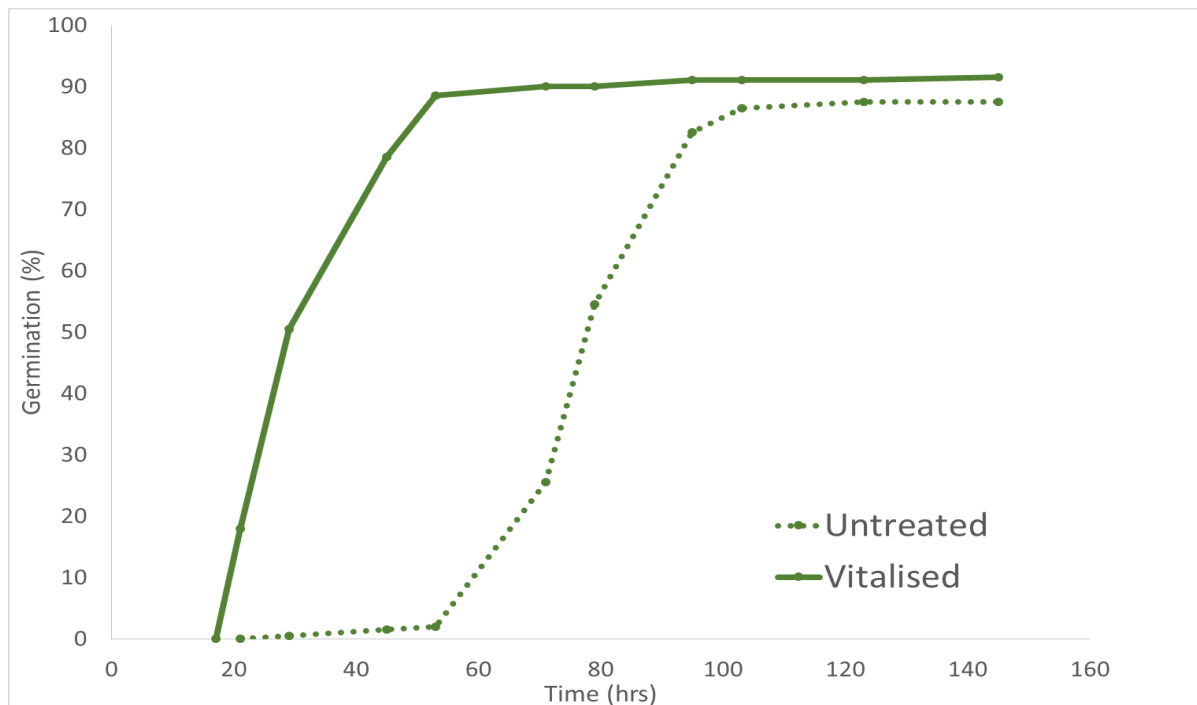
OPTIGROW[®] Vitalisation effect in sweet pepper

Germination speed and capacity



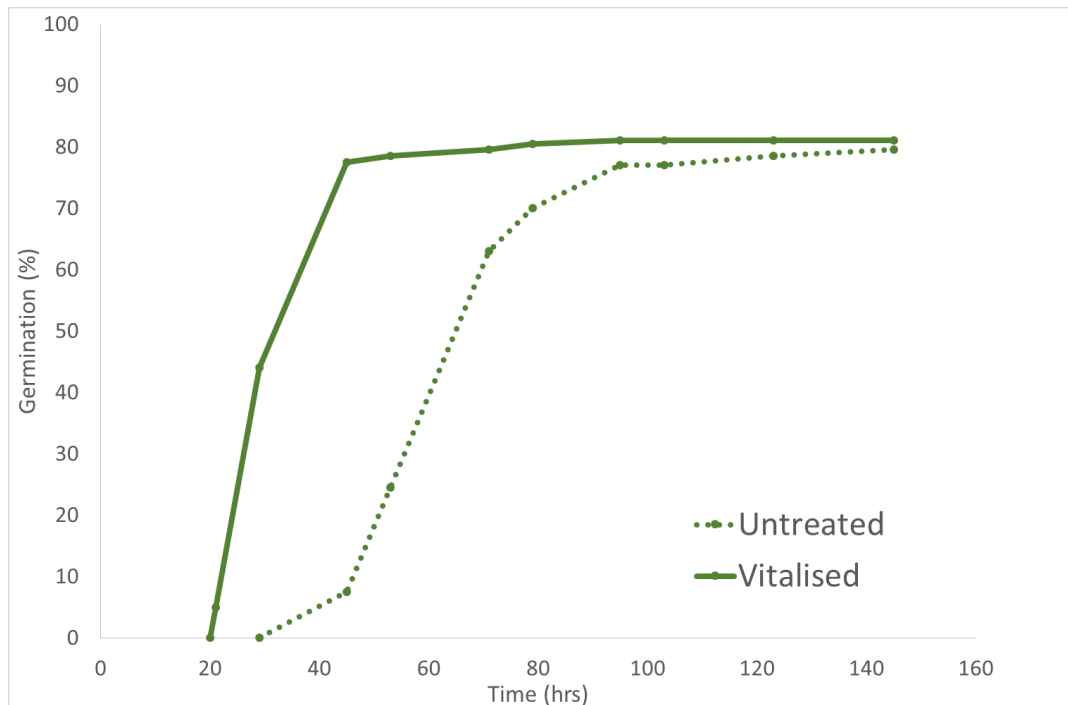
OPTIGROW[®] Vitalisation effect in tomato

Germination speed and capacity



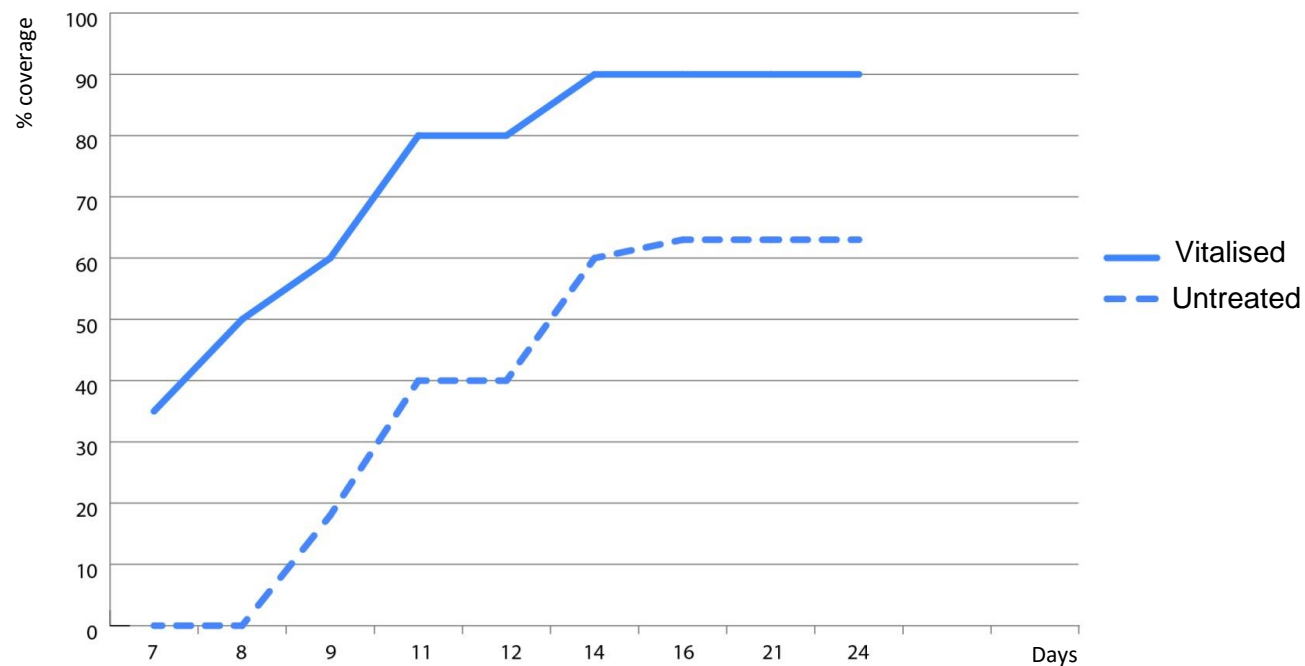
OPTIGROW[®] Vitalisation effect in carrot

Germination speed and capacity



OPTIGROW[®] *Field coverage*

Kentucky bluegrass, poa pratensis



OPTIGROW[®] Harvest control Ruccola



Harvest



61 %



OPTIGROW[®] Harvest control Spinach



Harvest



153 %



OPTIGROW[®] Harvest control Parsley



Harvest



180 %



OPTIGROW[®] Improved field establishment and harvest

Timothy - early



CONTROL

OPTIGROW[®]

Timothy - following



CONTROL

OPTIGROW[®]

Harvest



189 %

Spring wheat - early



CONTROL

OPTIGROW[®]

Spring wheat - following



CONTROL

OPTIGROW[®]

Harvest

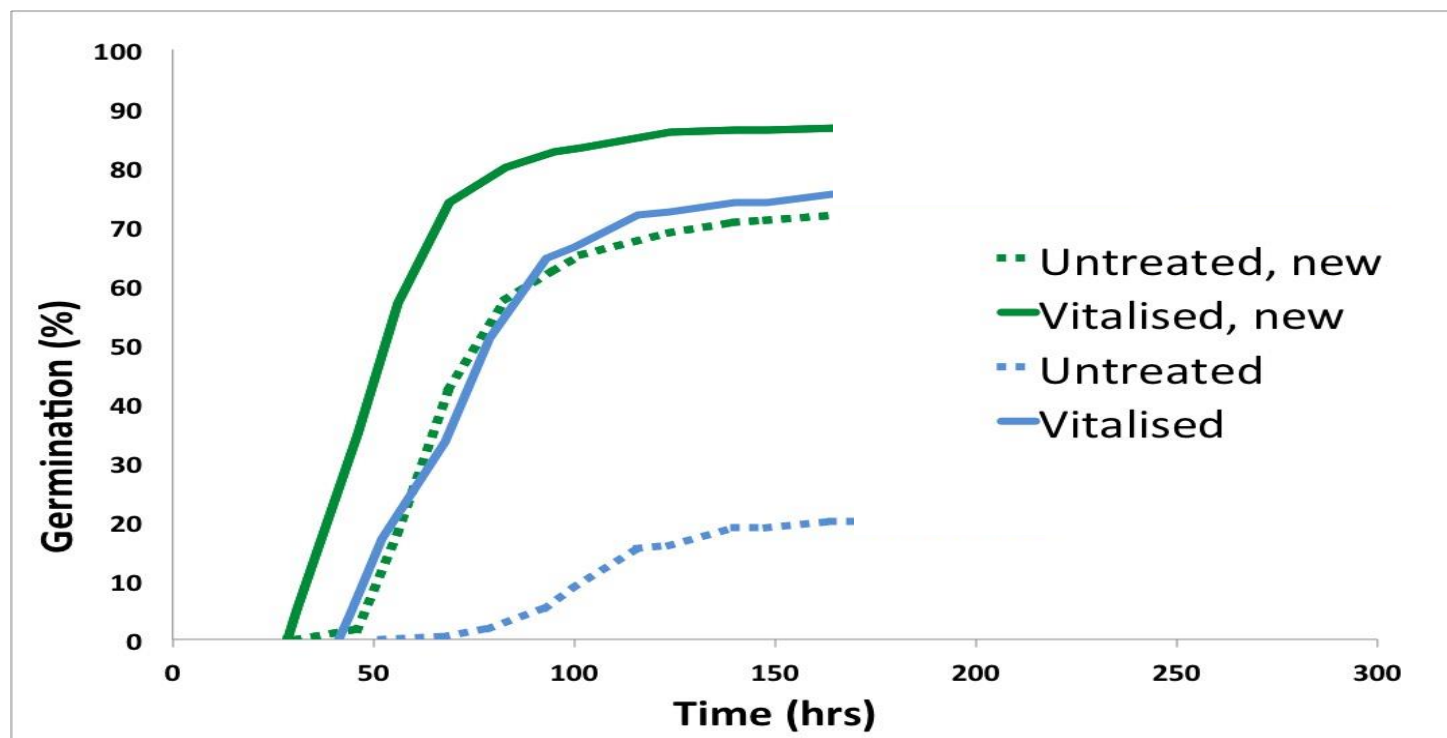


18,8 %



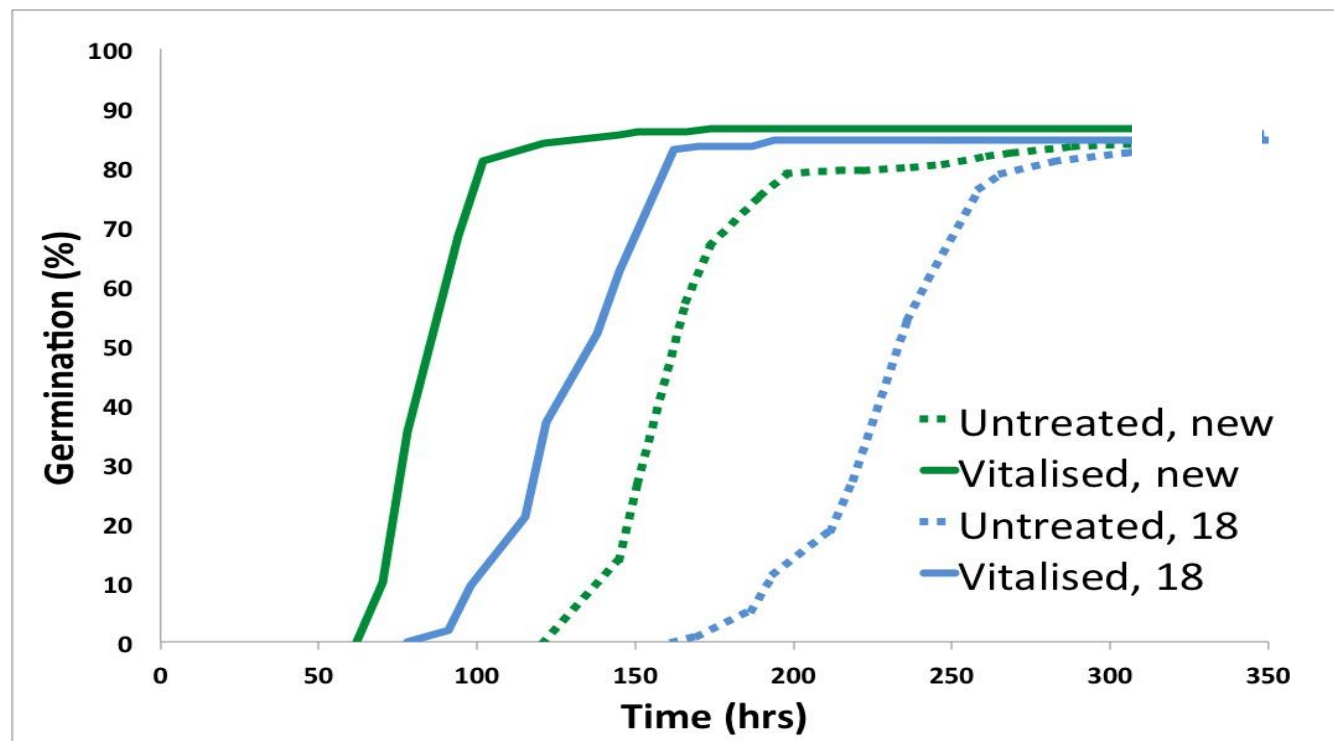
OPTIGROW[®] Shelf-life results for onion

Germination speed and capacity after 24 months in room temperature



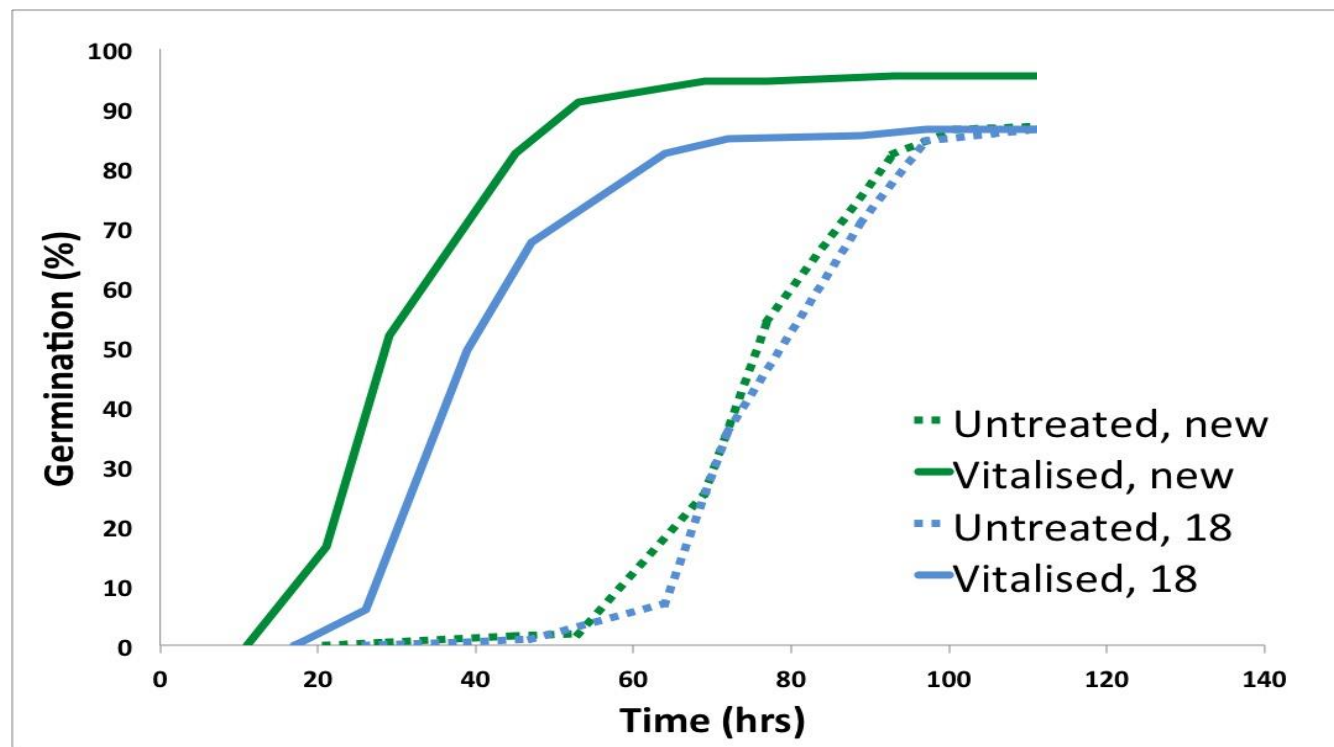
OPTIGROW[®] Shelf-life results for sweet pepper

Germination speed and capacity after 18 months in room temperature



OPTIGROW® Shelf-life results for tomato

Germination speed and capacity after 18 months in room temperature



OPTIGROW[®] Shelf-life.

Outstanding results compared to competitors

Test for storage potential by controlled deterioration, performed by one of Nelson Seed's customers

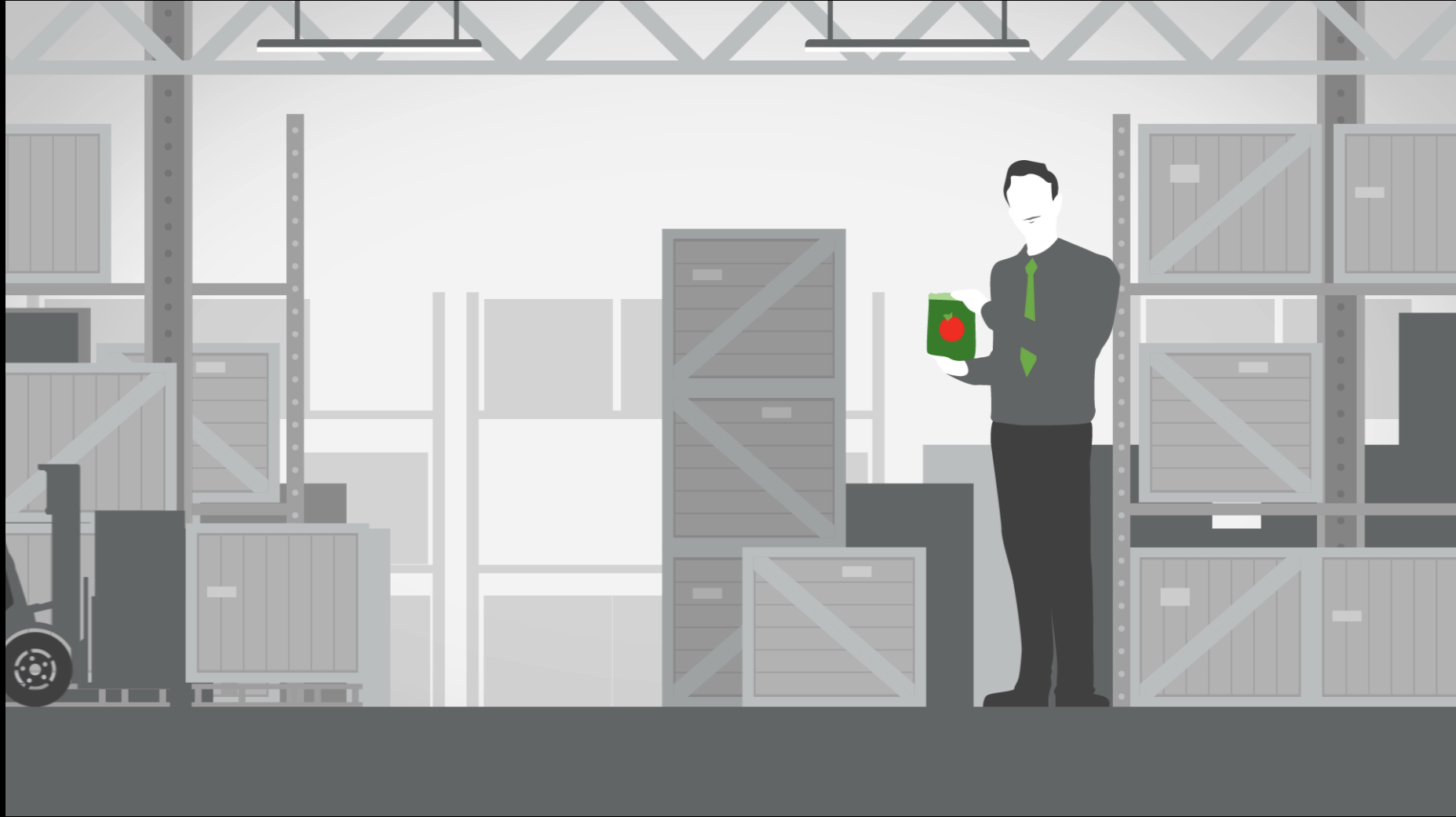
| | Carrot | | Tomato | | Onion | | Pepper | |
|--------------|--------|-------|--------|-------|-------|-------|--------|-------|
| | 1st | Final | 1st | Final | 1st | Final | 1st | Final |
| Untreated | 40% | 83% | 40% | 58% | 73% | 86% | 10% | 56% |
| Vitalisation | 42% | 81% | 63% | 72% | 74% | 88% | 32% | 43% |
| Primed | 24% | 39% | 1% | 1% | 14% | 18% | 1% | 3% |



Business – options

- ✿ Initial test vitalisation on your own seed
- ✿ Vitalisation by sending seeds to Nelsons facilities in Sweden
- ✿ In-house vitalisation in seed companies own site, buy or lease the equipment





World introduction for the hobby garden sector

- ✿ Will be available in some steps
- ✿ Introduction to the market for the season 2018
- ✿ By a few companies around the world



Summary

- ✿ Largest step for home garden since intro of F-1 hybrids
- ✿ Outstanding, unique seed quality
- ✿ Environmentally friendly process without chemical
- ✿ Economic growing and profitable business
- ✿ New logistic, time- and cost advantages

