



**Dutch fruit industry is thriving again!!**  
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# **Apple and pear cultivation in the Netherlands**

Last 25 years.....

Apple of 18,000 ha -> 6,300 ha

Pear from 5.000 ha -> 11.000 ha

Number of growers from about 1500 to 900

A total of roughly 15,000 workers employed in and around the pip fruit production.



# Consumption and cultivation in balance?

NL produces 200 million kg for the fresh market and 50 milj kg for the processing industry.

Apple consumption is 200 million kg fresh and 150 milj kg processed  
-> Including processed fruit, the Netherlands is an importing country!!

Pear consumption in the Netherlands is 60 milj kg.  
Production is 375 million kg. For pears, we rely heavily on export.

-> 80% of Dutch pears are destined for export!



# Apple and pear cultivation in the Netherlands

## Varieties

Elstar	2500 ha =	Conference	8000 ha =
Jonagold	1000 ha ↓	Doyenne duComice	1000 ha =
Wellant	200 ha ↑	Beurre Alexandre Lucas	800 ha =
<i>Junami</i>	150 ha ↓	<i>Sweet Sensation</i>	250 ha =
<i>Kanzi</i>	300 ha ↓	Gieser Wildeman	200 ha =
<i>Magic Star/Sprank</i>	100 ha ↑	<i>Xenia</i>	300 ha ↑
Boskoop	400 ha =	<i>Migo</i>	200 ha =
Golden	400 ha =	<i>Grafin Gepa</i>	100 ha ↑
Delcorf	300 ha ↓		

Apples: *Morgana, Evelina/Supernova, WURTwining, Tessa, Sunspark*

Pears: *Red Conference*



# Now and in the near future.....

- Number of farms decreases, but average farm size increases
  - Increasing number of farms above 25 ha, an increasing number in 50-100 ha range. Trading companies or investors are heavier involved in culture
  - Number of growers in next 10 years from 900 -> 500
    - *Approximately 200 growers with short lines to consumers, 300 growers for larger-scale cultivation focused on domestic retail*
    - *More successors, but finding good farm managers etc is difficult*

Acreage will decrease 10-15% due to stopping farms

## Now and in the near future.....

- Recent EU reports express expectation that fruit consumption will rise sharply
- Apples: Dutch retail is stimulating much heavier to buy local
  - *Less room for imported fruits*
  - *Albert Heijn is making big steps in this*
  - *Traders and retailers are starting to make stronger connections with growers*
  - *The battle for the better growers is started*
- Pears: Decreasing production in South European countries + increasing consumption of Conference in Germany and East European countries
- Apples and pears : positive role of new varieties

# Now and in the near future.....

- **Game changers:**

- In Holland nowadays whole fruit sector is cooperating within 'Fruit Vooruit'
  - More structured plan on positioning the sector, but also discussions about innovation, future pest management (toolbox) etc
    - *Within Fruit Vooruit also discussions on the research agenda, like on sustainable pest management, smart farming etc.*
  - Further steps on sustainability (programs like Planet Proof of Albert Heijn better for Nature and Farmer program)
    - *Albert Heijn stimulates sustainability by paying growers within this program 5-6 eurocents/kg extra (as bonus at the end of the year)*



- Sharing messages, small films etc with increasing group of consumers



# Beter voor Natuur & Boer



“Samenwerken aan een duurzame toekomst met aandacht voor biodiversiteit, bodem en klimaat. Met als basis een eerlijk verdienmodel voor iedereen.”



“Als wij goed voor  
de natuur zorgen, zorgt de  
natuur goed voor ons!”



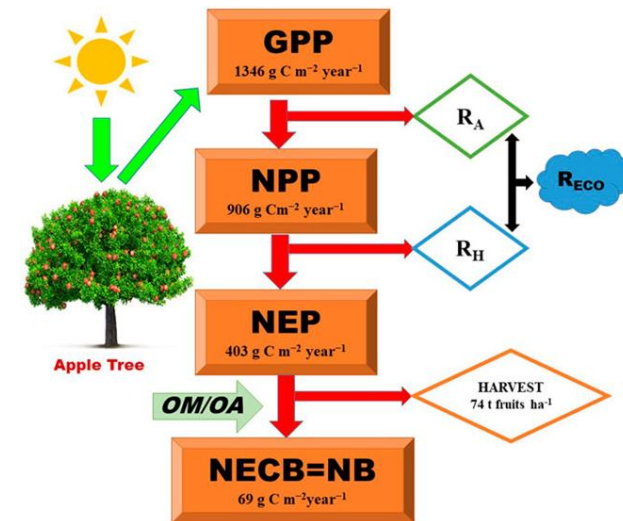


# Communication is a key factor: story telling !

- Apple consumption is at a level of an apple a week instead of an apple a day
  - Apples are a strong preventive medicine
- Orchards have a positive carbon footprint
  - CO<sub>2</sub> positive until the farm gate
  - When packing and storing is done with energy from renewable sources than from cradle to mouth could be carbon neutral
  - Orchards built over the years more organic matter in the soil (= extra carbon reserve)
- Orchards are the home for a broad range of biodiversity

It is important to keep a vital local fruit industry

We have a very good story to tell!!!





## Now and in the near future.....new developments

- Smart sprayers (camera techniques), only spraying when the sprayer sees tree volume
- Smart farming (camera techniques to assess growth, flowering etc)
  - For example task cards for ATS sprays
- Hybrid systems in weed control
- Geneva rootstocks in apples
- Two leader systems in apples
- New varieties in apples and pears

All these developments are demonstrated on our experimental farm:





# Now and in the near future.....threats

- Limitations in crop protection
  - Regulations stronger than in other countries from central zone
  - Strong checks on illegal pesticide use
  - In 2030 virtual no drift and no residues, in 2035 complete ban on chemical pesticides
- Labour costs and finding motivated labour
- Climate change is a threat, but stronger for other countries. Climbing level of the sea might be a major problem.



# About economics .....

- Farm land in Holland has exploded in price over the last 5 years.
  - On average farm land is now at € 80. 000 - 90.000,- per hectare. It peaks at € 175. 000,- in the polder area
  - It gives lots of farmers a strong financial basis, but doesn't give them more room for loans etc. It is regarded more like a secured position after retiring.
  - New orchards generally take an investment of € 10,- per tree. Including construction, soil preparation, planting etc.
    - For club varieties it might go up to 15 euro per tree
    - For V systems pears it goes up to 15 euro per tree as well.
    - With 3.000 – 4.000 trees per hectare it takes € 30.000 – 60.000,- per hectare
    - Modern drip irrigation takes another € 6.000 – 7.000,-



# Establishment costs

- From the moment of planting it takes for apples 3 years and for pears up to 5 years before the crop will be high enough to cover the costs.
  - In these first years one adds this yearly loss to the investment
  - In the end apples often take € 50.000 - 60.000,- investment, pears even € 70.000,- to 80.000,- per hectare. These are the establishment costs
  - These figures apply for orchards with proper early productions, for example:

	apples	pears
yr 2	6 kg	4 kg
yr 3	9 kg	7 kg
yr 4	12 kg	10 kg
yr 5	15 kg	13 kg

- Lower productions or more extensive orchards that take longer to establish proper productions will result in higher establishment costs.



# Establishment costs

- Generally we count with 5000 euro depreciation per year
  - Apples 11-12 yrs of 5.000 euro/ha/yr
  - Pears 15-16 yrs of 5.000 euro/ha/yr
- Investment in an apple orchard is 'earned' back after 14-15 yrs, pears after 21-22 yrs. Life cycle of apples is often 15-17 yrs, for pears it is up to 45-50 yrs
- The effect of the depreciation in your cost price strongly depends on the production level
  - 30 tonnes -> 16,7 eurocent
  - 40 tonnes -> 12,5 eurocent
  - 50 tonnes -> 10,0 eurocent



# Other costs



- Pruning generally takes 100 hours per hectare (Jonagold 60, Elstar 100, pears 125)
  - Mechanical pruning could save considerably labour, but easily leads to more biennial bearing, more handthinning, less quality -> not a good solution. Only tops are pruned mechanically
  - Counted with part skilled + part unskilled labour, than pruning takes € 2.500 euro/ha/yr
- Handthinning often takes 60-100 hours (Elstar, Conference). This takes € 2.000,-/ha/yr
- Spraying, making the orchard checks etc will take 40 hours per hectare per year. We count the farm manager at 40 euro/hr, so this takes € 1.600,-/ha/yr
- Harvest is done with 125 (Elstar) – 200 (Conference) kg per hour. Including staff + harvesting equipment, it takes 9 cent per kg for Conference and 14-15 cent for Elstar. Generally one could say that harvest takes € 6.000,-/ha/yr





# Other costs



- Machinery park, shed for the machines etc -> for maintenance + depreciation machinepark we count € 3.000,-/ha/yr (production equipment)
- Memberships, accountant etc € 1.250,-/ha/yr
- Hail insurance € 1.250,-/ha/yr
- Nutrition, crop protection etc € 2.200,-/ha/yr
- Land use € 1.500,-/ha/yr

# Total costs Netherlands

• Depreciation orchards	€ 5.000,- /ha/yr
• Spraying, orchard checks etc	€ 1.600,- /ha/yr
• Pruning	€ 2.500,- /ha/yr
• Handthinning	€ 2.000,- /ha/yr
• Harvest	€ 6.000,- /ha/yr
• Production equipment (machines etc)	€ 3.000,- /ha/yr
• Memberships, accountant etc	€ 1.250,- /ha/yr
• Hail insurance/hail nets	€ 1.250,- /ha/yr
• Nutrition, crop protection etc	€ 2.200,-/ha/yr
• Land use	€ 1.500,-/ha/yr
<b>Total</b>	<b>€ 26.300,- /ha/yr</b>





# Production costs

- With 50 tonnes production, the production costs are 53 eurocent per kg
  - When it is 80% class 1 and 20% industry (10 cents per kg), then the class one already should make 64 eurocent.
- Could one grow cheaper?
  - Labour reduction often leads in a poorer quality -> not a good idea
  - Growers that maintain their orchards longer (pears!!) at some stage don't have their depreciation anymore -> reduces cost price with 10 eurocent!!
  - Higher productions !
  - Longer life cycle of machinery parc can make 3 eurocents/kg
  - Reducing other costs often have a minor impact

# Total costs



versus



- Depreciation orchards
- Spraying, orchard checks etc
- Pruning
- Handthinning
- Harvest
- Production equipment
- Memberships, accountant etc
- Hail insurance/hail nets
- Nutrition, crop protection etc
- Land use

€ 5.000,- /ha/yr

€ 1.600,- /ha/yr

€ 2.500,- /ha/yr

€ 2.000,- /ha/yr

€ 6.000,- /ha/yr

€ 3.000,- /ha/yr

€ 1.250,- /ha/yr

€ 1.250,- /ha/yr

€ 2.200,-/ha/yr

€ 1.500,-/ha/yr

€ 26.300,- /ha/yr

€ 5.000,- /ha/yr

€ 1.600,- /ha/yr

€ 2.500,- /ha/yr

€ 2.000,- /ha/yr

€ 4.500,- /ha/yr

€ 3.000,- /ha/yr

€ 1.250,- /ha/yr

€ 1.250,- /ha/yr

€ 1.800,- /ha/yr

€ 1.000,- /ha/yr

€ 24.000,- /ha/yr

Total





# Production costs Danish growers

- Production costs € 24.000,- /ha/yr
- With an average production of 40 tonnes one needs on average 60 eurocents per kg over the whole production.
  - Quite often this production is + of – 10%, so production costs lay between 55 and 65 eurocent per kg.
  - Growers do need at least these prices to have an healthy economy on their farm.
    - With only 25-30% local production, this should be possible.
      - Very low pesticide use as many products are not allowed in DK. This should be rewarded
      - As discussed orchards are beneficial in many ways.
      - Due to climate change, Danish fruitculture gets a better climate for growing apples and pears, but will be more prone to spring frosts
    - This goal needs to be set very urgently as the number of successors is extremely low and many growers are above 55-60
    - Experience shows that 4-5 years of healthy prices make fruit farming attractive again

# Production costs Danish growers

- Production costs organic farming are 20% higher, so will be € 29.000,- /ha/yr
- With an average production of 30 tonnes one needs on average 98 eurocents per kg over the whole production.
  - *Quite often this production is + of – 10%, so production costs for organic lay between 90 and 110 eurocent per kg.*
  - *Don't look too much to the higher prices of organic. Start making the whole supply chain aware of the need to make on average 60 euro cents for conventional fruits. That is 95% of the industry!. With prices of 40-45 eurocents/kg we are looking at the last generation of fruit culture in Denmark!!*



# Solutions

- Work towards a system that the whole chain talks with each other
- The system at the moment is built heavily on selling fruits per piece instead of per kg. One forces growers into producing small fruits
  - Keep in mind that a consumer that takes a 65 mm fruit eats 130 grams of fruit per consumption moment, where a consumer that takes a 72 mm fruit eats 160 grams per consumption moment. It is better to go for slightly bigger fruits (and reward them with better prices). This stimulates fruit consumption strongly
- Make local for local much stronger.
  - In Holland it was also said that customers don't mind where the fruits came from. Nowadays this is considered not to be true. Dutch customers favour Dutch fruits.
- Work on better quality (renewal of orchards) and make strategic choices in varieties (good balance between the existing main stream varieties and room for new varieties)



# Solutions

- Don't fall into the trap of saving costs
  - *Working longer with poor quality orchards/varieties*
  - *Reducing labour*
- The only solution is in changing the industry. This only is useful when growers change as well.
  - *Quality is a key factor in making Danish consumers addicted to Danish fruits!!*





Thank you for your attention!

