

Met de steun van

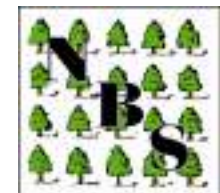


DEPARTEMENT  
LANDBOUW  
& VISSERIJ

**BIODIVERSITY FOR A TRANSITION TO A MORE  
SUSTAINABLE FRUIT GROWING**

**Paul Van Laer**

**Nationale Boomgaardenstichting v.z.w.**

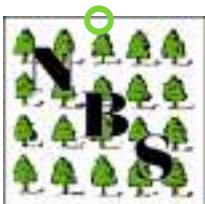


# NBS – NATIONALE BOOMGAARDENSTICHTING

— NONPROFIT ORGANIZATION

## Mission:

- Genetic conservation of our heritage of national and local fruit → Pomology in all its aspects.
- Traditional orchards: safeguard and replant ! → Landscape, natural environment and raising awareness for biodiversity.
- Pomological library, publications, study and research → education for hobbyist and professional.
- The use and artisanal processing of fruit in all its aspects. The use of fruit in all its forms.
- Services, advice and realizations concerning fruit, orchards, fruit processing, landscape maintenance, ...



# NBS GENE BANK FLANDERS FOR ORCHARD VARIETIES

- Collection of fruit varieties, mostly old Belgian and Flemish bred cultivars, regional races, local landraces and until now unnamed old cultivars. Since 1970 !
- The NBS collection consists of more than 3.500 accessions, mostly of apples, pears, plums, cherries, nuts, grapes, quinces and medlars.
- New introductions thanks to prospections, chance seedlings, breeding,...



# SAFEGUARD OF TRADITIONAL ORCHARDS



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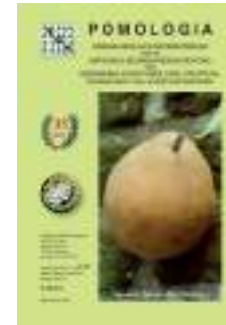


# SAFEGUARD OF TRADITIONAL ORCHARDS



# POMOLOGICAL STUDY, RESEARCH AND PUBLICATIONS

- **Pomologia** 4x /year, 52 pages each



- **Orchardvarieties for each region of Flanders**



- **Our Pomologists of the 19th century**



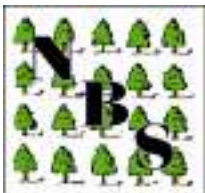
- **Educational brochures: grafting, production of grapes, the breeding of mason bees to pollinate blossom**





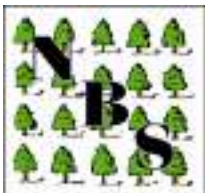
# EDUCATION

- Orchard planting and management (10 days course)
- Pruning, grafting, fruit determination...
- The fruit garden
- ...



# ARTISANAL FRUIT PROCESSING

- Juice, Sirop, Dried fruit, Jam, Fruitcakes...
- De Sappmobiel



# INFORMATION – ADVICE – AWARENESS - RESPONSIBILITY

- During our big events:
- - ‘de KERS’ (July) at Alden Biesen
- - ‘the National Fruit Exhibition’





# INFORMATION – ADVICE – AWARENESS - RESPONSABILITY

o - Europom !!

**19 & 20 October 2019  
at the castle of  
Alden Biesen  
in Bilzen**



19-20 oktober  
**Europom<sup>®</sup> 2019**  
10 tot 17 u.

Alden Biesen  
Kasteelstraat 6, 3740 Bilzen

- Expo van meer dan 1000 appel- en peervariëteiten uit meer dan 10 verschillende landen
- Proef- en verkoopstand van tientallen variëteiten
- Determinatie van uw vruchten
- Info- en adviesstand rond de boomgaard
- Verschillende fruitgerechten en -dranken
- Boeken, materialen, sappen en stropen
- De boomgaarden rond Alden Biesen verkennen met de Pomexpress

**GRATIS TOEGANG  
+GRATIS PARKING**

Nationaal Boomgaardensichting (NBS) vzw - 045 812 7011 (NL)  
Info: boomgaardensichting.be - www.boomgaardensichting.be

Europom Alden Biesen DEPARTEMENT LANDBOUW & VISSERIJ DEPARTEMENT ONDERNEMINGEN

# ACHIEVEMENTS

- Projects:

- The natural orchard
- The orchard as a school and artisan workshop
- Agroforestry with fruit trees

.....

- Orchard Plantings: the yearly production and planting of > 5000 full standard fruittrees and a few thousands of bush trees, spindels, ... In cooperation with NBSW – a company in the social economy



FOCUS FOR THE NEAR FUTURE:  
**DIVERSITY FOR SUSTAINABLE FRUIT  
GROWING**

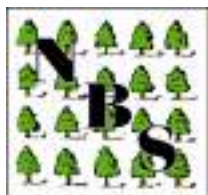
- A super controlled fruit growing with the focus on maximalisation of production, quality and effectiveness:



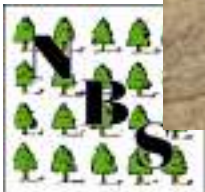


# MODERN FRUIT GROWER = CONTROL FREAK

PROTECTION AGAINST HAIL, FROST, RAIN, DISEASES  
FERTIGATION, OVER-FERTILIZATION...



# MODERN FRUIT ORCHARD = CLEAN LABORATORY: STANDARDISATION OF GROWING, PREVENTIVE CONTROL OF PESTS AND DISEASES



# MODERN FRUIT GROWING RESULTS

- In a **MONOCULTURE** (Conference, a few apple cultivars with >80 % of Golden Delicious genes)
- And a **Dramatic Loss of Biodiversity** in the orchard environment!
- The continuous fight against pests and diseases, that can hardly be found in an ecological orchard  
→ Resistances





# CONVENTIONAL → IPM → BIO → ZERO FYTO



# IPM – INTEGRATED PEST MANAGEMENT

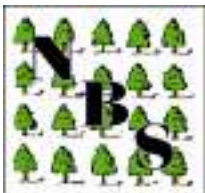
- Larvae and adult of the Anthocorus as the main predator of the pear psylla





# IPM – GEÏNTEGREERDE GEWASBESCHERMING

- Typhlodromus predatory mites: main predator for red spider mites and rustmites



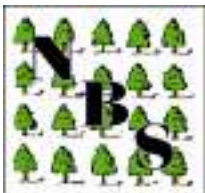


# A TRADITIONAL, ECOLOGICALLY MANAGED ORCHARD = A BALANCED ECOSYSTEM

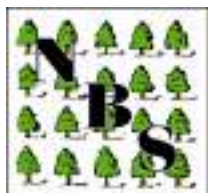
Experiences in orchard and also more intensive grown collection parcels - ZERO-INPUT

(= no pesticides and no anorganic fertilizers)

- Much more biodiversity in and around the orchard
- Attackers and their predators are present in the orchard, but mostly don't develop to a real pest → **a natural balance.**
- Ex: in full standard orchards red spider mite, rustmite, psylla, woolly aphids... (the main pest of the professional orchards) can hardly be found !!



# DIVERSITY IS THE KEYWORD



# 'DIVERSITY' IS THE KEYWORD

Diversity on individual fruit farms has many aspects:

- **Biodiversity** for an ecological balance
- **Genetical diversity** stimulates the biodiversity
- **Diversity in the crops** stimulates the biodiversity and makes the farms less economically vulnerable.



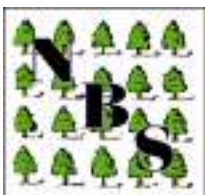


# FULL STANDARD FRUITTREE ORCHARDS

MORE ECOLOGICAL BALANCE IN OLDER TREES, YOUNGER ORCHARDS NEED MORE ATTENTION TO ATTRACT BIODIVERSITY



# BIODIVERSITY ON AND IN THE SOIL AND THE TREE





# MORE ECOLOGICAL 'LAYERS' STIMULATE THE ECOLOGICAL BALANCE



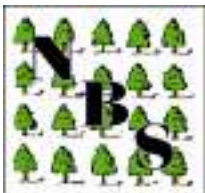


## GENETICAL DIVERSITY

- The more genetical diversity in an orchard, the more biodiverse the environment will become.



- Less monoculture will stimulate the ecological balance and will prevent specialism in the population of the pests and diseases..



# EVERY VARIETY WILL OFFER POSSIBILITIES

- Our lessons for the future?
  - Genetical diversity in the fruit landscape is very important to avoid specialism in the pests and diseases.
  - New crosses: input of “old genes” to create more robust varieties.



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# EVERY VARIETY WILL OFFER DIFFERENT POSSIBILITIES

- Varieties from the traditional orchards:
  - Were not all grown as table fruit (some for their storability or shelf life, others for their early ripening season).
  - Other norms for quality
  - Some varieties for specific processing or application purposes: sirop, juice, dried fruit, baking...



**Important !! : early 20th century they were grown in orchards with 'zero-input' → so they could resist enough the pests & diseases to keep their health, vitality and productivity.**







SOMETHING IS BREWING IN THE FRUIT CULTURE...  
NEW TRACKS  
NEW CHALLENGES!

- Many thanks for your attention!
- Remarks or new inspirations:

- Paul Van Laer,
- Nationale Boomgaardenstichting
- [paul@boomgaardenstichting.be](mailto:paul@boomgaardenstichting.be)

