



TWF/42/25

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**INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS**  
GENEVA

**TECHNICAL WORKING PARTY FOR FRUIT CROPS**

**Forty-Second Session**  
**Hiroshima, Japan**  
**November 14 to 18, 2011**

EXPERIENCE WITH NEW TYPES AND SPECIES

*Document prepared by an expert from New Zealand*

1. At its forty-seventh session, held in Geneva from April 4 to 6, 2011, the Technical Committee (TC) agreed to request the Office of the Union to invite experts to submit written reports to the Office of the Union in advance of the Technical Working Party (TWP) sessions in order that a document containing those reports could be prepared by the Office of the Union. The TC noted that TWP experts would be invited to make a brief oral summary of their written report at the session and would also be encouraged to make reports under the agenda item "Experiences with new types and species", as appropriate.
2. The TC also noted that TWP experts would have an opportunity to raise questions concerning matters of interest (see document TC/47/26 "Report on the Conclusions", paragraphs 9 and 10).
3. With regard to experiences with new types and species in New Zealand, the Annex to this document contains a presentation on the DUS testing of *Pyrus* hybrids.

[Annex follows]

## TESTING VARIETIES OF *PYRUS* HYBRIDS

Plant Variety Rights Office  
Intellectual Property Office of New Zealand  
Ministry of Economic Development



## The first varieties for testing

- In 1998, applications were made for two hybrid varieties:
- 'PremP36' (Crispie) and 'PremP45' (Maxie)
- The hybrids arose from interspecific crosses between *Pyrus communis* and *Pyrus pyrifolia*
- EUROPEAN X JAPANESE PEARS



PremP36 (Crispie)



PremP45 (Maxie)

## A NEW SPECIES?

- The cross had already been recognised as *Pyrus Xlecontei*
- Two American varieties existed 'Kieffer' and 'LeConte'
- The NZ varieties would be the first to be DUS tested.

## A TEST GUIDELINE

- A UPOV test guideline existed for:  
European Pear (*Pyrus communis*) TG/15/3 2000  
and for  
Japanese Pear (*Pyrus pyrifolia*) TG/149/2 1994

The above guidelines formed the basis of testing, but should they be used separately or combined?

## COMPARING THE TWO GUIDELINES

### Japanese Pear TG/149/2

- 76 characters
- Consisting of:
  - 2 tree
  - 15 one year old shoot and branch
  - 3 young shoot
  - 8 leaf
  - 12 flower, petal, anther
  - 35 fruit
  - 1 disease resistance

### European Pear TG/15/2

- 65 characters
- Consisting of:
  - 3 tree
  - 7 one year old shoot
  - 3 young shoot
  - 9 leaf blade
  - 3 petiole
  - 11 flower
  - 29 fruit

## OUR APPROACH

- The two varieties were assessed according to which species characters they most resembled
  - Both varieties generally resembled *Pyrus communis* based on fruit shape and colouration.
  - 'PremP45' overall expressed greater *P. pyrifolia* similarities than 'PremP36'
- Characteristics from TG *Pyrus pyrifolia* would be used as needed.

The European Pear guideline was selected for use

## Did the European Pear TG adequately describe the varieties?

- 92% of characters satisfactorily described the morphology of the two hybrid varieties
- For the remaining characters, the Japanese Pear TG was referred to e.g. size of bud support, number of fruiting spurs, flower bud size, internal fruit characters
- Some variety characteristics were not readily described by either TG e.g. sepal characters on the fruit, immature fruit colouration

## The range of expression in a character

- The basis of a UPOV description is the use of example varieties for reference points
- Applying a TG for one species to a variety that is only a portion of that species may impact on the range of expression
- Due to the relatively few Pear hybrids tested, experience is very limited

## Some conclusions

- For hybrids with a TG covering each parent separately, a single TG or a combination should be used. This approach is supported in TPG/13
- The existing European pear TG can be used to describe *P. communis* x *P. pyrifolia* hybrid varieties
- There are relatively few characters from either TG that will not provide adequate description
- The question of example varieties and range of expression will become a greater issue as the number of varieties increases

## Recent Developments

- We now have a third pear species *Pyrus xbretschneideri* The Chinese Pear
- Application has recently been made for 'PremP109'
- *Pyrus pyrifolia* x *P. xbretschneideri*
- Japanese x Chinese Pears
- Testing has not yet begun



'PremP109'

### Characteristics that generally differ from European Pear in Hybrid

#### Varieties

- Tree: habit more upright
- Tree: branching reduced
- Leaf: form and size larger and more rounded
- Fruit: size larger
- Fruit: shape more variable, intermediate shapes between circular and pyriform

Experience to date indicates that the European Pear TG could form the basis of a *Pyrus* fruit TG



'PremP109'