Use of permanent sprinklers for pesticide applications in Quebec orchards 2010-2011

Vincent Philion
Bernard Panneton
Marlène Piché
Gérald Chouinard
Peter van Emmerik
Karl Schloffer
Marc Trapman
Rationale

- Drift of pesticide is major concern
- Reduced spraying costs (automation or speed?)
- Reduced soil compaction (wet springs)
- Proper timing of « reduced risk » products
Historical perspective

- 1950’s
  - South Tyrol
  - Frost & scab

- 1960’s
  - 10,000 acres in use!

- 1980’s = Ohio
- 1990’s = Austria
- 1998 = Cornell
- 2005 = Netherlands
- 2010 = Quebec (recycling)
- 2011 = Denmark
- 2012 = France
- 2012 = USA
Netherland system

- 5 yrs full operation
- 3 ha pears
- Semi auto
The current project

- 0.8 acre in 2010 & 2011 (3285 m²)
- McIntosh on M9 (12’ x 4’) (2004)
- Standard sprayer vs reduced drift vs Sprinklers
- 4 replications (CRBD)
- Straight comparison 2010 + 2011
Spray coverage

- Vinyl disks
- Separate colours per treatment
- Three treatments in plot
- Sample and Analysis
Disk Layout

- 1 disk per leaf side
- 5 positions
- 3 rows per plot
- 3 trees per row
Upper side of leaf coverage

BAD : Anti drift/  C : conventionnal / G : Srinklers
Under side of leaf coverage

BAD : Anti drift/ C : conventionnal / G : Sinklers
2010 = Easy year for pests

- No scab in plot!
- Tarnished, curculio, sawfly, maggot, codling moth, mites…
2011 = Heavy scab year

• Shoot scab incidence in July = 14% in every plot
• Detailed analysis on every pest = not completed
• Looking good!
What’s next…

• Organic program 2012
• Plans to expand?