Practical Experiences with self moving test bench

Supro fruit 2017

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Experiences with self moving test bench

May 2015

- First demo
- Comparison of 10 orchard sprayers
New Method

- Self moving test bench
  - Measuring spray technology
  - Fast method
  - Mobile deployment
Service for growers: Adjustment of orchard sprayers

• November 2015
  – Presented at Fructura Fair Hasselt (B)
  – Award “most innovative exhibitor”
• Januari 2016 start service
  – At pcfruit
  – On-site adjustments
• April 2017
  – 160 sprayers adjusted
Example new machine
Before

After
Personal approach
Type of adjustments

- Air stream adjustments
  - Position flaps top, bottom, middle
  - No clean air assist system
- Position of nozzles
  - Adaptions by farmers/dealers are a risk
  - Damages to nozzle holders
- Nozzle sizes
- Crop height

- Additional tests reducing fan speed
  - Fuel consumption, noise, wear and tear
Test bench
ligneous small fruit and vineyards
Most common problems

- Extra nozzle
  - Outside the airflow
- Nozzles too close to each other
  - Overlap
- Nozzles directed outside the airflow
- Nozzles too close to the end of the airflow
- Deflectors incorrectly adjusted
- Too high fan speed
- Dirty fan or air duct
Most common problems

Nozzles directed outside the airflow

Original

Nozzles directed towards to the airflow
Most common problems

Nozzles placed too short to the end of the airflow

- Original
- Nozzles 6 en 8 closed
Most Common problems

Deflectors not adjusted

Left

- Original
- Deflector on top 60°
- + airflow slide at the bottom is closed

Right

- Original
- Deflector on top 50°
- + airflow slide at the bottom is closed
Most common problems

Too high fan speed

Fan speed
420

Fan speed
540
Most common problems
**Conclusions**

- Better spraying pattern = more efficient usage of PPP’s
- Less loss to the soil and less spray drift
  - Better protection of water courses
  - Future plant protection products
- Fuel saving by lower fan speed

- Moving test bench
  - Measuring spray technology
  - Fast method
  - Mobile deployment
Conclusions

• Adjustments to orchard sprayers are necessary
  – 160 machines adjusted – 1 machine / 1 side OK

• Growers like the personal approach
  – Training on how their machine functions in their orchard

• Growers are willing to pay for adjustments
  – 20 ha apple / pear -> cost < 0,5% of the yearly PPP cost
  – Possibility to reduce the amount of PPP’s
  – Advantages of reduced fan speed