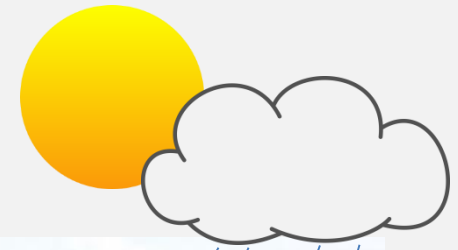


# Protecting organic fruit trees from direct rain and sun

## Sustainable pest management and maintenance of fruit yield



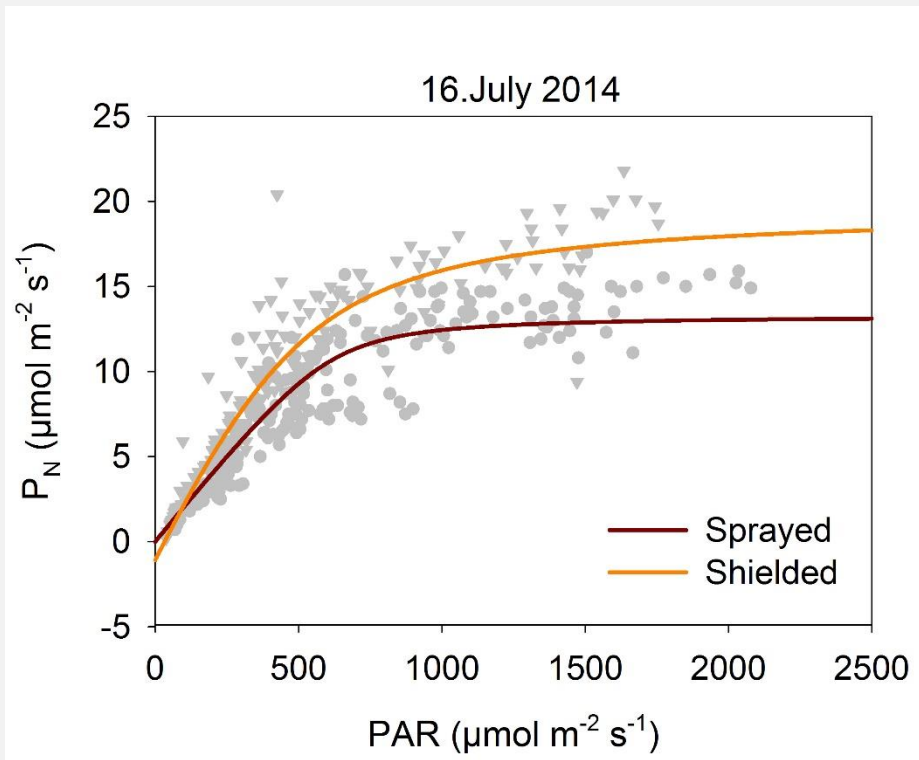
- Fruit trees grown in orchards are highly nursed to maintain a specific growth structure for optimal yield and maintenance
- Maintenance includes heavy spraying protocols to avoid fungal diseases both in conventional and organic orchards

### Hypothesis

- By shielding the trees it will be possible to reduce leaf and fruit wetness and thereby limit fungal infections, maintenance will also be lowered
- However, rain shields may affect the photosynthetic yield due to reductions in light intensity

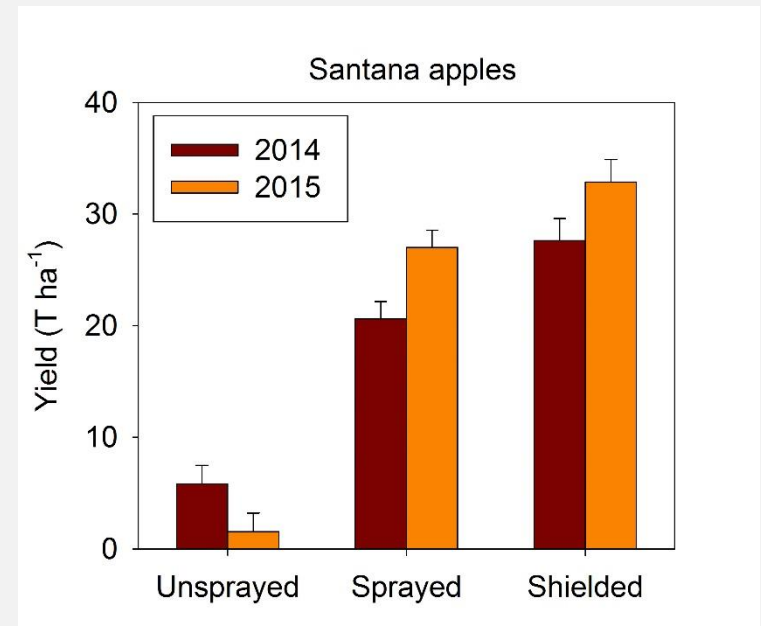


# Photosynthesis and yield of shielded apples (2012-2015)

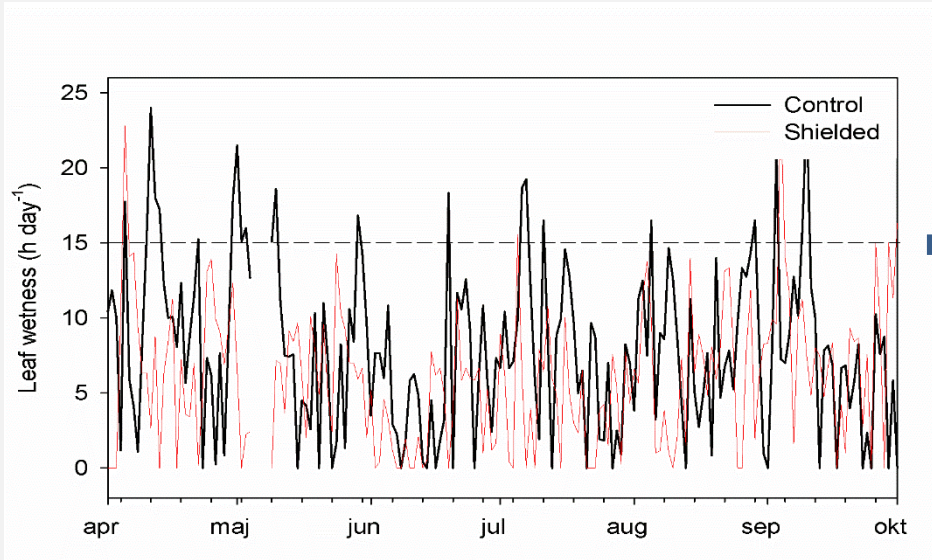


Unsprayed 3.4 t/ha\*    Shielded 44.6 t/ha    Sprayed 38.1 t/ha

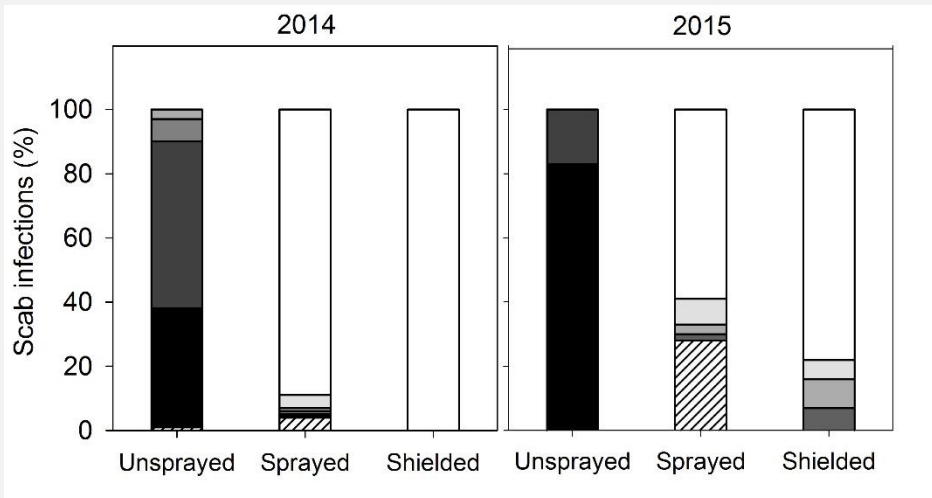
- The rain shields protect the photosynthetic apparatus from high solar irradiance
- Midday depression is avoided
- Yield is maintained/increased in apples



# Leaf wetness and scab infections in apple (2014-2015)



15 hours of leaf wetness in warm temperatures is ideal conditions for scab infection caused by the fungus *Venturia inaequalis*



'Elstar'



'Rubens'



Unsprayed

Shield

Sprayed



# Perspectives for shielded production of organic fruit in orchards and Green Cities

- The concept of urban farming is not new
- We could think of shielded corridors/ city halls and roads with fruit trees
- Challenges
  - Pollination/windfall fruit/air pollution/labour intensive harvesting
  - Cost of implementing orchards in the city orchards or free fruit for picking
  - Cost of Space and logistics
  - Will people eat the fruit or just leave it

