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# Light spectrum modifications under photo-selective hail-nets

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CORE organic **DOMINO**



# Netting systems

- **Actions**: the use of plastic nets is expanding to protect plants and production from hailstorms, excessive solar radiation damage and flying pests
- **Improvements**: a) it is under study the possibility to reduce the wetting due to rain with a progressive increase of the mesh to drive water out of the canopy b) the use of photo-selective nets for higher photosynthesis and fruit quality, and growth control

# Emilia Romagna, Portomaggiore (FE): *Cherry* Van

Anticracking hail net system with  
pearl Iridium®





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- **Problems** with hail nets in fruit production: (a) influence on fruit production and quality, (b) physical limitation for trees under cover, (c) mechanical behavior of nets and structures. **d) Shadow effect and light quality.**



# Emilia Romagna, Faenza: nectarine “Romagna 3000”





- **Photo-selective nets? Color and transmittance**

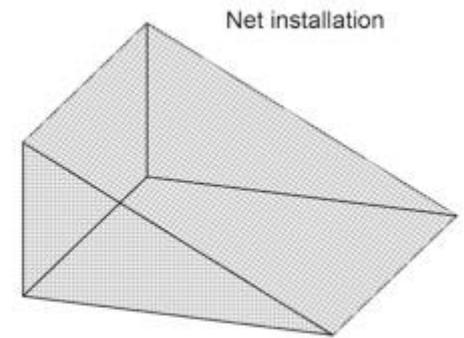
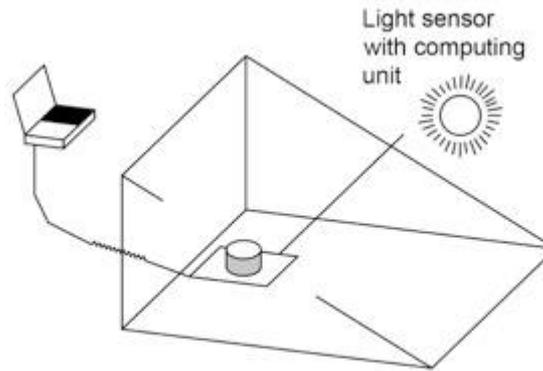
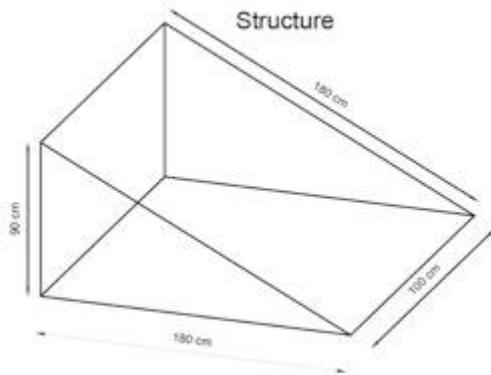
- Photo-selective hail nets were 2,4x4,8 mm mesh woven by 0,31 mm specific color wires, average 60 g/m<sup>2</sup>.
- A specific pigment is integrated in plastic master before wire production with a unique UV-additive mixture that does not influence net color.
- Considering number and caliber of wires, photo-selective nets have an intercepting surface of 19,4%.



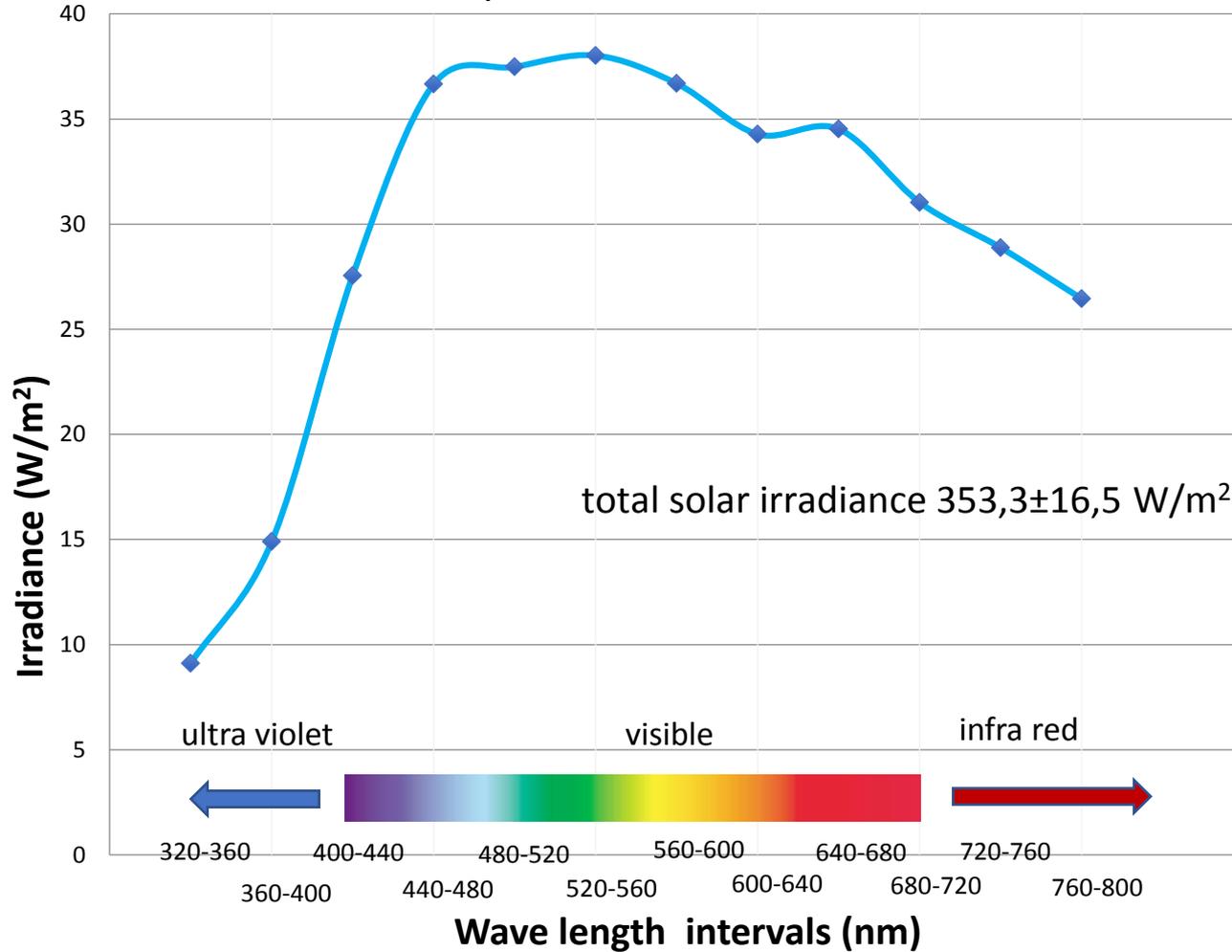
SpecWin Light, CAS 120 Spectrometer, Instrument System, (Konica Minolta group).

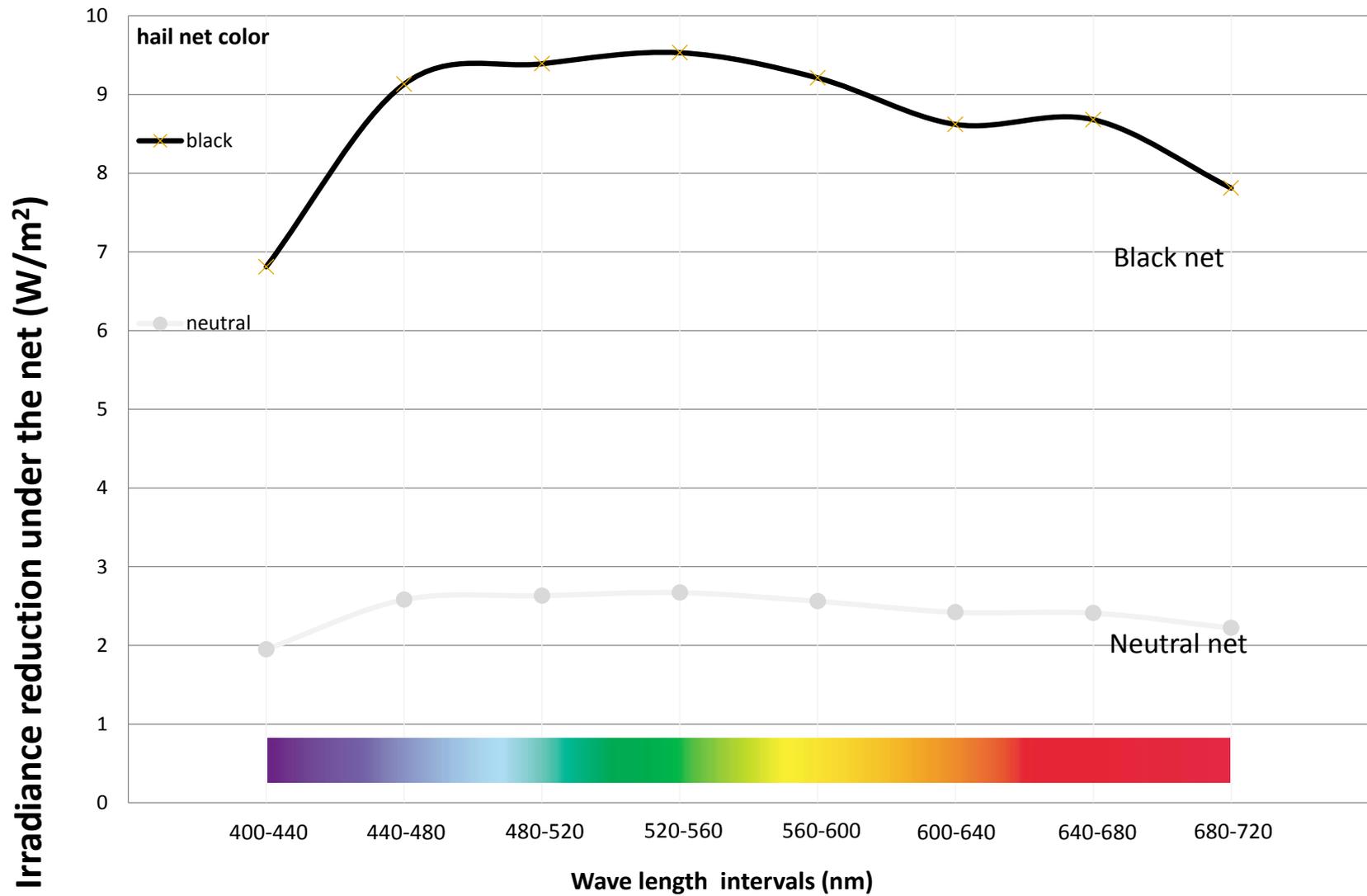


Laboratory test setup for LEDs

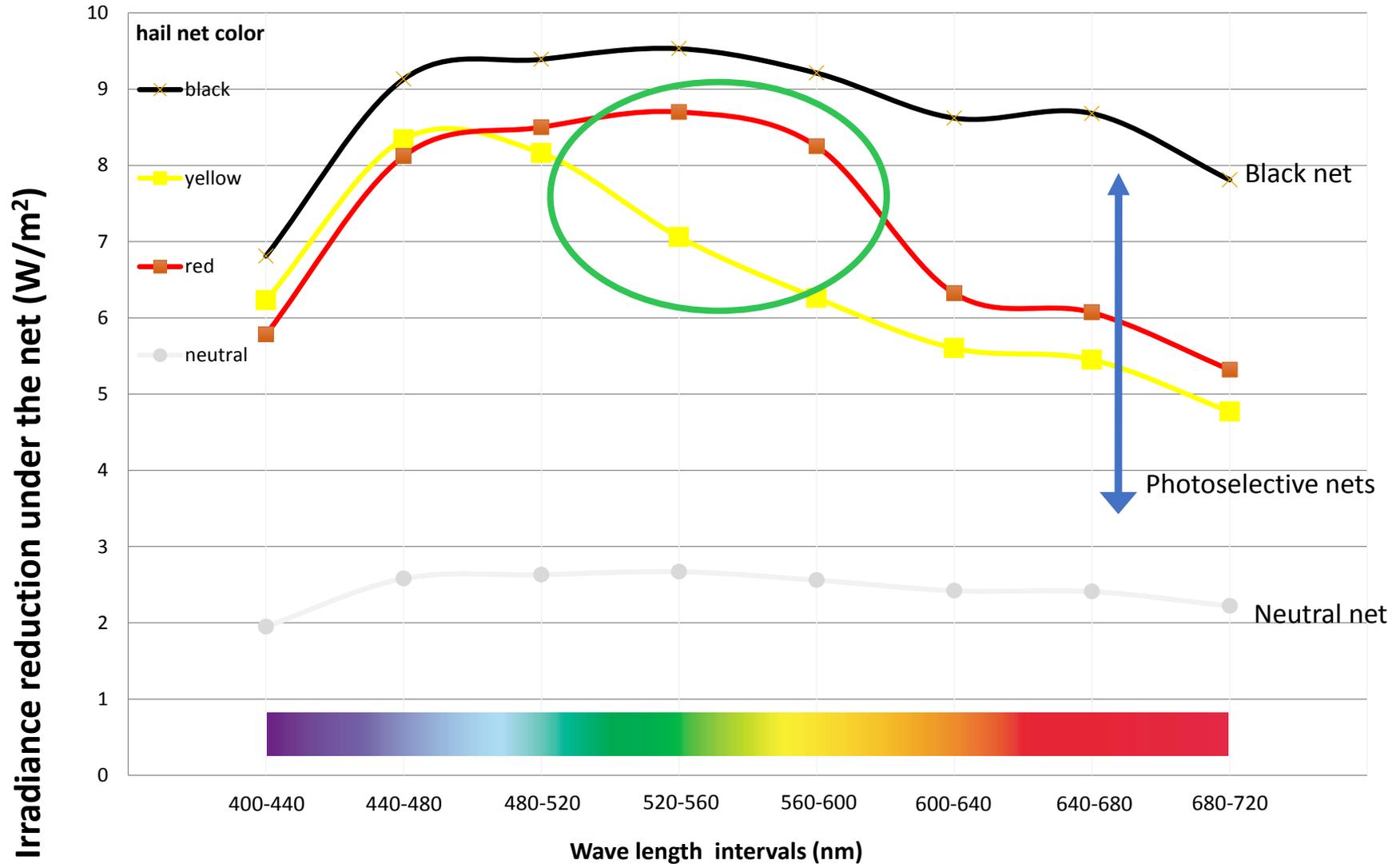


Solar irradiance on September 23, 2016 at noon in Ancona, Italy





In “the wonder of yellow netting”, Shahak et al 2016 showed that under yellow nets the green and yellow component of the spectrum was higher than under the red net.



The stimulating effect of the yellow nets, in both ornamental and fruit crops, might relate to the induction of increased levels of bioactive gibberellin (GA) previously demonstrated to be induced by supplemental green illumination (Wang and Folta, 2013).



