FONDAZIONE EDMUND MACH

IOBC-WPRS

IOBC Working Group
"Integrated Protection of Fruit Crops"
Subgroup "Soft Fruits"

VIII Workshop

on Integrated Soft Fruit Production

Book of abstracts

Fondazione Edmund Mach
Vigalzano di Pergine Valsugana (TN)
26-28 May 2014

FOLIAR DEPOSITION OF ELECTROSTATIC CHARGED SPRAY APPLIED BY A CANNON SPRAYER ON HIGH TUNNEL STRAWBERRY

Bondesan Daniel[1], Rizzi Claudio[1], Ganarin Gianpiero[1], Marchel Loris[2], Bertoldi Silvio[2]

[1] Centre for Technology Transfer – Fondazione E. Mach, via Mach 1, 38010 S. Michele all'Adige (TN), Italy; [2] Sant'Orsola, Cooperative association of fruit growers, Via Lagorai 131, 38057 Pergine Valsugana (TN), Italy

Strawberry is the main soft fruit production in high tunnel cultivation of Trentino. With about 4000 t of yield per year, the regional strawberry production has increased in the last years and it represents almost the 70% in terms of quantity and about 60% in terms of value in the production sector of small fruits.
To improve pesticides application efficiency is a difficult process because it can be affected by several factors some of which do not allow an easy and sufficient control. The cannon sprayer is one of the equipment widely in use for protected cultivations in this area. This type of sprayer can be equipped with electrostatic charge devices, but the experience in how much this can improve the canopy deposition of PPP is not much.
To acquire some preliminary data on the improvements achievable by the electrostatic charged application technique an experiment was carried out in strawberry tunnels using a cannon sprayer (Tifone Bravo 600) equipped with an electrostatic device which was turned on in a first plot and off in a second one during spraying a tracer solution (yellow Tartrazine). The experimental tunnels were about 18 m long and they were sprayed from both the front openings of the structure travelling at a working speed of 1.2 km h^{-1}. Plants were grown into bowl at the top of hanging trellises disposed into four rows for each tunnel and the canopy stage was typical of the first decade of July (end of harvest). The applied volume was 1500 l ha^{-1} as usual in the area for this development stage.
After drying of vegetation foliage was sampled at three different distances from the front of tunnels (2-3 m, 6-7 m, 9-10 m) and at two depth levels of the canopy (external crown and internal foliage) in the two central rows of the protection structure.
Sample analysis showed that the use of the electrostatic charge seems to increase the tracer deposit in the outer part of the vegetation, close to the opening of the tunnel. This effect seems have an influence also on the deposits of the inner leaves closer to the front of the tunnel, reducing them. In the inner part of the vegetation – the most difficult to cover – it seems to be no appreciable increase in deposition using the electrostatic charge. In the central part of the tunnel, the effect was no more appreciable too.
Further investigations appear suitable to determine the effect of this technique on earliest and more representative development stages of strawberry plants.

Key words: foliar deposit, electrostatic application, cannon sprayer, high tunnel, strawberry