Study of new italian pepper cvs and evaluation of tswv tolerant cvs

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INTRODUCTION

The Italian pepper is usually harvested in green and the two other types, lamuyo and california peppers, can be harvested green or let them ripen until they are red, yellow or orange, although in recent years the fashion of tricolor has also moved on the Italian type.

The most significant virus is the tomato spotted wilt virus (TSWV), which is transmitted by the trip *Frankliniella occidentalis,* causing severe damage in the entire Mediterranean area. The trip and the virus of which is vector, represents one of the most worrying phytopathological problems for pepper crops, due to the virus and the vector are very polyphagous.

The appearance of new plant material has provided a good agronomic performance, the introduction of tolerance to the tomato spotted wilt virus (TSWV) and even in some cases, the improving of quality and productivity. Other resistances that were introduced are CMV and PVY.

MATERIAL AND METHODS

They were tested a total of 24 cvs.

Year	January	February	March	April	May	Juny	July	August	September	October	November	December
2009	30		2		11						28	

sowing planting harvest

There was used a black plastic mulching film and as a cover was used a non-woven polypropylene. The plantation frame used was 1.5 m between rows and 0.3 m between plants. We performed an experimental design of randomized blocks with three replications and 10 plants per elemental plot.

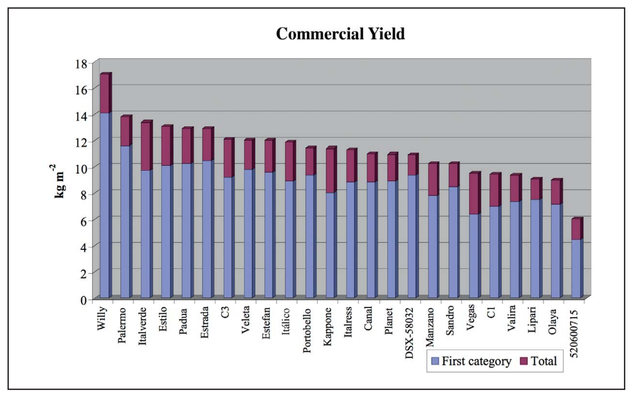
CONCLUSIONS

In this experiment they have been set up several groups according to their characteristics and presence or absence of resistance. For productions where it is intended fruits of a good length (20-23 cm.) stood out the cultivar **Estrada** with resistance to TSWV, **Palermo** and **Estilo** without resistance to TSWV. Among the group of peppers with a length from 17 to 20 cm., it emphasised the behaviour of cultivars **Itálico** and **Canal,** both without resistance. Finally, for a wider and darker type of pepper the cultivar **Willy** had the best agronomic performance, among those tested.

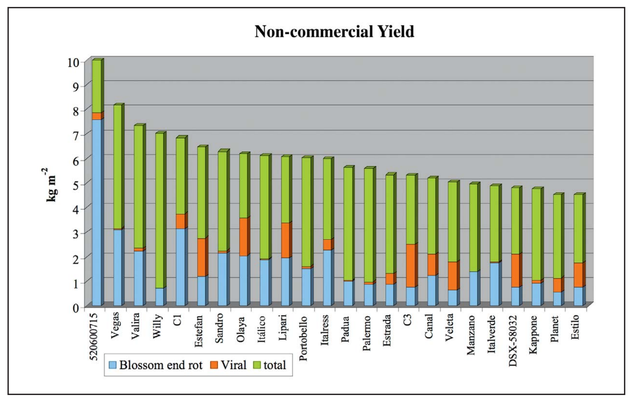
RESULTS AND DISCUSSION

Yield

The highest production of first category fruits was obtained with cultivars **Willy, Palermo** and **Estrada.** There were no statistically significant differences (d.s.n.e.) between them, although there were d.s.n.e. among the cultivar **Willy** and the rest of the material analyzed ($p < 0.01$). In all cases, the best commercial fruit production was obtained with the cultivars **Willy, Palermo** and **Italverde.** It was not detected statistically significant differences among the three cultivars although there were d.s.n.e. between the first and the remainder plant material ($p < 0.01$).



At non-commercial production, it should be highlighted the greater sensitivity to blossom end rot of the line **520600715** that presented d.s.n.e. respect to other plant material studied. The line **C1** and cultivar **Vegas** followed it. The line **C3** and the cultivars **Estefan, Olaya** and **Lipari** achieved the greatest non-commercial yield because of fruits with viral symptoms. There were found d.n.s.e. among the first with other material, except for the line **DSX-58032** and cv. **Veleta** ($p < 0.01$).



The highest average weight of first category fruits was achieved by cv **Willy,** highlighting the early collections where pieces weighted more than 150 grams and holding above 100 grams the average weight in the final stretch of the crop.

Field assessment

Regarding the percentage of plants affected by virus and level of incidence, the results are not directly related to the presence of resistance to TSWV. The symptoms were possibly due not only to that virus, but also for the presence of others such as PVY, PPMV and their combinations, something that was not determined analytically.