



## Twelfth International Symposium on Pollination (ISPXII)



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### ENHANCING APPLE POLLINATION UNDER NET

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#### ABSTRACT

Crops are increasingly grown under cover, which necessitates the use of managed pollinators, most often honey bees. However, compared to crops grown outdoors, the covers can negatively affect bee activity, hive health and pollination services. In netted apple orchards, pollination can be reduced by 30% compared to orchards out in the open.

To improve pollination services and retain strong hives, some growers open the net above the hive, or above some of the rows during flowering. However, this is labour intensive and involves risk, as it can expose the flowering trees to potential hailstorms and increase damage to the net. While the benefits are not well understood.

We compared the quality of apple pollination and hive health under open and closed nets. For pollination frequency, we compared visitation, fruit set, seed number and apple quality. For hive health we measured changes in hive size, the amount of pollen and number of pollen types collected by hives under open and closed nets.

We found that visitation and fruit set were higher when nets were opened, but we found no difference in seed number and apple quality. Hive health increased when the nets were open above the hive, and the bees collected more, and more species of pollen. However, under closed nets, the hives collected more apple pollen than under open nets. We conclude that opening the nets may benefit hive health but keeping them closed may result in improved apple pollination, because it enhances pollen foraging on the crop.