

Efficacy of Armicarb (potassium bicarbonate) against scab and sooty blotch on apples

A novel formulation of potassium bicarbonate (Armicarb) was evaluated against apple scab and sooty blotch in several field trials. Armicarb controlled scab and sooty blotch well and is expected to fulfil the IFOAM standards for acceptance of novel plant protection agents.

Introduction

Apple scab and sooty blotch may cause major losses in European organic apple orchards. The control of both diseases in scab-susceptible cultivars as well as of sooty blotch in scab-resistant cultivars is often difficult and not sufficiently successful. In this study, we investigated the effect of the novel commercial formulation Armicarb (potassium bicarbonate) on scab and sooty blotch under field conditions.

Materials and Methods

To evaluate scab control, two experiments were conducted in 2004 and 2005 in Frick (cv. Rubinette) in an experimental orchard, and one trial was conducted in 2005 in a commercial orchard in Prangins (cv. Golden Delicious). Applications were made before rain events at weekly intervals and adjusted to climatic conditions.

Experiments on sooty blotch control were conducted in 2004 and 2005 in a commercial orchard in Pfyn (cvs. Resista & Topaz 2004, cv. Topaz 2005)). The trees were sprayed with knapsack sprayers every two weeks according to weather conditions. All experiments were conducted according to EPPO guidelines.

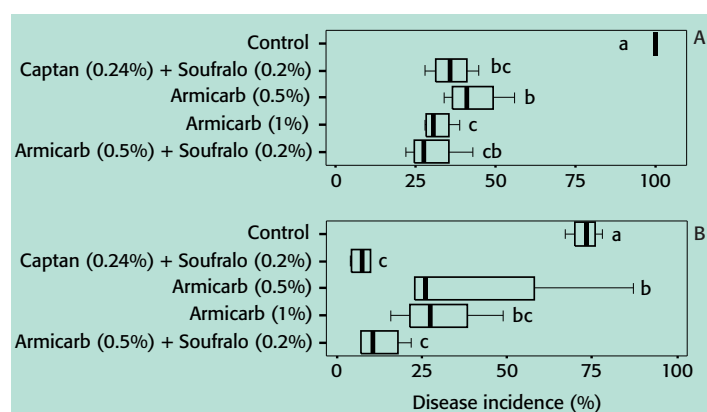


Figure 1. Impact of Armicarb on disease incidence caused by *Venturia inaequalis* on leaves (A) and apple fruit (B) on 24.6.2005 in Prangins (cv Golden Delicious). Treatments with different letters differ significantly ($p < 0.05$).

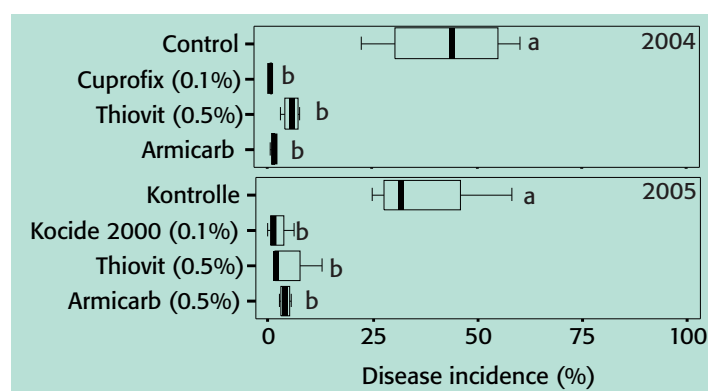


Figure 2. Impact of Armicarb on disease incidence caused by *Venturia inaequalis* on leaves in trial 1 on 17.6.2004 and trial 2 on 24.6.2005 in Frick (cv Rubinette). Treatments with different letters differ significantly ($p < 0.05$).

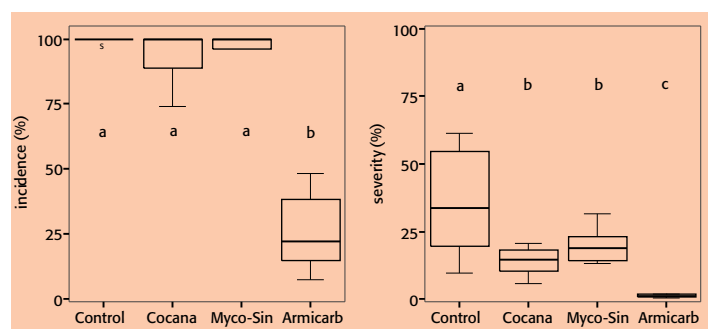


Figure 3. Impact of Cocana RF (1%), Myco-Sin (0.8%) and Armicarb (0.5%) treatments on sooty blotch development on cv Topaz on 9. September 2005. Treatments with different letters differ significantly ($p < 0.05$).

Conclusions

Armicarb (Potassium bicarbonate) provided excellent control against apple scab as well as sooty blotch in field trials conducted in 2004 and 2005. The efficacy of Armicarb was as good as the reference treatments (i.e. sulphur against scab, Cocana RF against sooty blotch).

References

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