



Research and Breeding Institute of Pomology Holovousy Ltd.  
Czech Republic

# FINAL REPORT

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Evaluation of the efficacy of  
the product Ekolive against  
powdery mildew





**Objective:** To evaluate the efficacy of the Ekolive product against infections caused by *Podosphaera leucotricha*

**Type:** greenhouse experiment

**Crop:** apple seedlings

**Cultivar:** 'Golden Delicious'

### Experimental variants:

V1 Untreated Control

V2 Ekolive

### Treatment, inoculation and assessment schedule:

|              |                                                                                                     |
|--------------|-----------------------------------------------------------------------------------------------------|
| 12 May 2026  | application of a 10% solution (preventive treatment, 14 days before inoculation)                    |
| 19 May 2026  | application of a 10% solution (preventive treatment, 7 days before inoculation)                     |
| 26 May 2026  | inoculation and incubation for 2 days in a phytotron                                                |
| 28 May 2026  | application immediately after incubation in the phytotron using a 30% solution (curative treatment) |
| 4 June 2026  | application 7 days after the previous treatment using a 30% solution (curative treatment)           |
| 15 June 2026 | assessment                                                                                          |

### Methodology:

Apple seedlings of the cultivar 'Golden Delicious' grown in containers (6 containers with 4 seedlings each; 24 plants in total) were used. Plants were preventively treated with a 10% Ekolive solution by spraying and by applying 60 ml of spray solution to the substrate of each pot 14 and 7 days before artificial inoculation.



**Figure 1** Ekolive treatment procedure



Seedlings were then inoculated and placed in a humid chamber for 48 hours. Curative treatment with a 30% Ekolive solution was carried out 2 days after inoculation, and a second curative treatment with a 30% solution was applied 7 days after the previous treatment. In both curative applications, plants were sprayed and 60 ml of spray solution was added to each pot. A total of 75 leaves were assessed 14 days after inoculation.

Powdery mildew severity was assessed visually according to the following four-point scale:

- 1 – no visible symptoms of powdery mildew
- 2 – slight infection, with isolated powdery mildew patches
- 3 – severe infection, with symptoms covering approximately half of the leaf area
- 4 – very severe infection, with symptoms covering more than half of the leaf area, accompanied by curling and drying of the leaf margins

## Results:

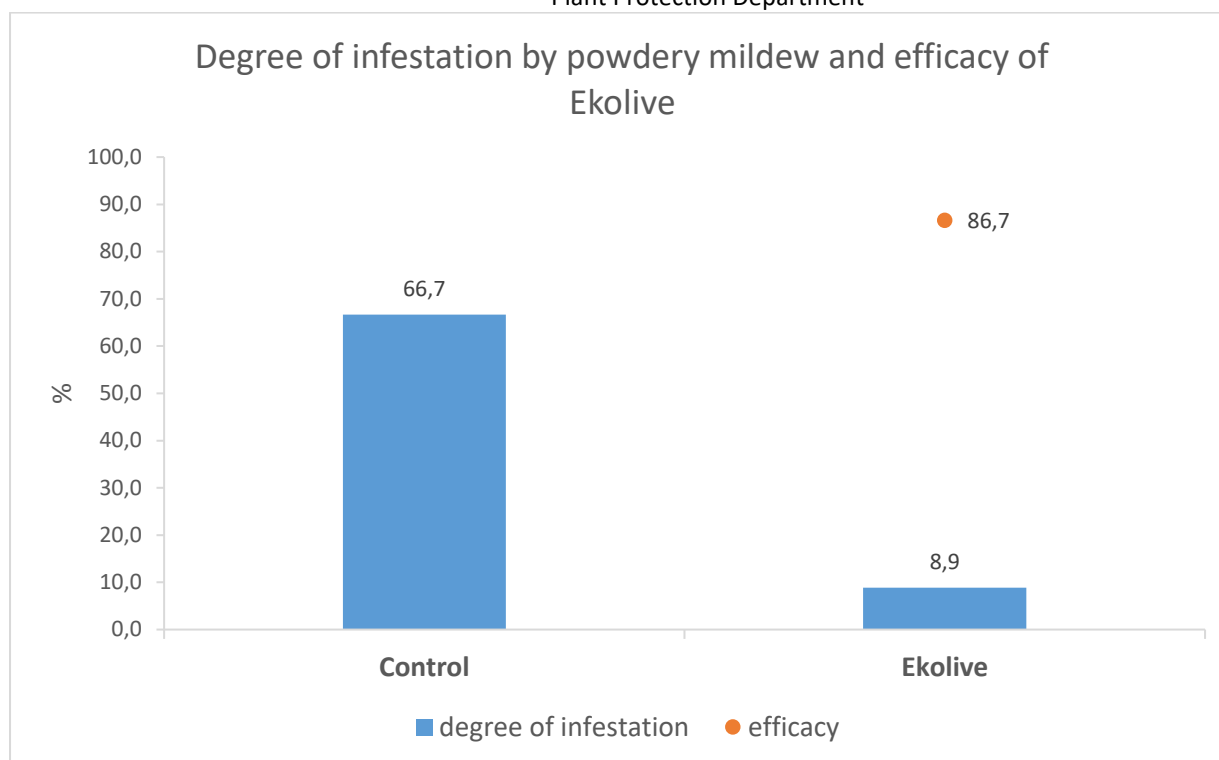
Under the conditions of the greenhouse experiment, powdery mildew symptoms were observed in both experimental variants. The degree of infestation reached 66.7% in the untreated control, whereas only 8.9% was recorded in the Ekolive-treated variant. The treatment with Ekolive therefore markedly reduced the severity of powdery mildew on apple seedlings of the cultivar 'Golden Delicious', with a calculated efficacy of 86.7% compared with the untreated control.

The distribution of leaves among the infestation categories is presented in Table 1, and the degree of infestation in both variants is shown in Graph 1.

**Table 1** Assessment of powdery mildew severity on apple seedlings

| Treatment | Number of leaves in category 1-4 |    |    |    | Degree of infestation | Efficacy |
|-----------|----------------------------------|----|----|----|-----------------------|----------|
|           | 1                                | 2  | 3  | 4  |                       |          |
| Control   | 6                                | 23 | 11 | 35 | 66,7                  | NA       |
| Ekolive   | 55                               | 20 | 0  | 0  | 8,9                   | 86,7     |





**Graph 1** Degree of infestation by powdery mildew at apple seedlings in untreated control and in the variant treated by Ekolive



**Figure 2** Apple seedlings treated with Ekolive (left) and untreated apple seedlings (right), both inoculated by powdery mildew

## Conclusion:

**Ekolive showed promising efficacy against apple powdery mildew under greenhouse conditions, achieving an efficacy of 87%. To further validate these results, we recommend repeating the greenhouse experiments and evaluating the product under field conditions to assess its practical applicability.**