



# Agro ECA **Protect**

The world's first product for plant cultivation based on hypochlorous acid



Scan the code  
and see how  
it works in plants



**ZERO  
RESIDUES**



**100% NATURAL  
INGREDIENTS**

## Proven effectiveness in reducing diseases

- reduces the occurrence of fungal, bacterial and viral diseases

## The revolutionary effects of biostimulation

- Stimulates the opening of stomata, increases the amount of chlorophyll in leaves,
- Affects the uptake of nutrients from the substrate - mainly cations,
- Has a positive effect on the size and quality of the yield,
- increases the sugar content in fruit,
- reduces the effects of heat stress caused by high temperatures.

- Product marketed in the European Union in accordance with Regulation (EU) 2019/1009: CE<sub>1434</sub>,
- Approved for use in organic farming No. SE/81/2022,
- Patented solution (patent No. 244920),
- Agro ECA Protect is not a plant protection product.

## What is Agro ECA Protect?

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**Agro ECA Protect is a patented product made from 100% natural ingredients:**

- Electrolysed water (an aqueous solution produced by membrane electrolysis of naturally occurring sodium chloride). The active substance in electrolysed water is hypochlorous acid. Agro ECA Protect contains stabilised, ultra-pure hypochlorous acid.
- Clinoptilolite, belonging to the zeolite group (natural, ground rock of volcanic origin). Ground clinoptilolite fraction: below 20 microns

**Agro ECA Protect is a biostimulant registered for use by spraying, fogging, watering plants and treating seeds and seedlings.**

## Action in reducing diseases

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**Agro ECA Protect stosowany poprzez oprysk lub zamgławianie ma działanie kontaktowe i wglębne**

**Interventional action (precisely limits the development of the disease)**

Applying Agro ECA Protect immediately after infection, i.e. after spores begin to germinate or bacteria begin to develop on the surface of the plant, effectively limits the spread of the disease. When using a disease monitoring system, such as Farm Smart Alert, the product should be applied 1-3 days after the infection warning. If you do not use a monitoring system, Agro ECA Protect should be applied after rainfall. In the event of prolonged rainfall, it is recommended to apply 2-3 treatments per week, especially in the case of berry harvesting. In tunnel cultivation, it is recommended to perform 1 spraying or fogging treatment per week. In case of frequent rainfall, it is recommended to perform 2 treatments per week. Agro ECA Protect helps to reduce plant infestation by diseases during the vegetable or fruit harvest period without the risk of plant protection product residues.

**Action after the onset of symptoms:**

Agro ECA Protect limits the development of many visible disease symptoms. Applied by spraying or fogging, it has a contact and penetrating effect. Hypochlorous acid enters the plant through the stomata and lenticels. There, it ensures proper hygiene in the intercellular spaces.

**Prevention of secondary infections:**

Agro ECA Protect is an ideal solution for protecting plants after frost, hail, storms or other mechanical damage. It cleans wounds and reduces the occurrence of infections, and additionally accelerates the healing and scarring process.

**Agro ECA Protect applied through watering has a contact and systemic effect.**

**Treating seedlings**

By watering plant seedlings or seedlings, Agro ECA Protect effectively reduces soil-borne plant diseases – systemic action. Hypochlorous acid enters the plant through the roots and cleanses the conducting bundles. The plant also absorbs the silicon contained in silicate through its root system, which strengthens the cell walls. After this treatment, we recommend applying beneficial microorganisms to the soil.

**Seed dressing**

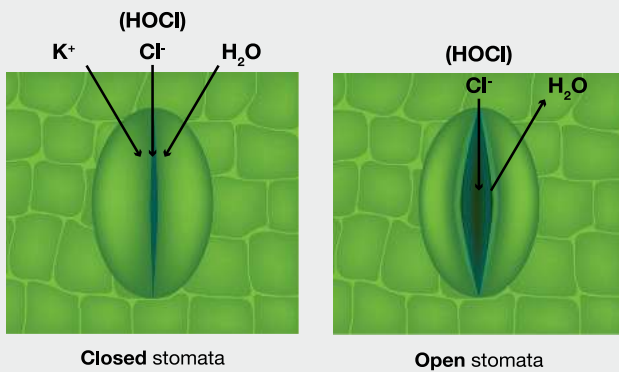
Research conducted at the University of Agriculture in Krakow and the Institute of Horticulture in Skierniewice has shown a significant improvement in seed germination and a reduction in pathogens on seeds when treated with Agro ECA Protect using the "wet" method.

## Stimulating growth and reducing abiotic stress

### Agro ECA Protect stimulates the opening of stomata.

The hypochlorous acid contained in the product breaks down into  $\text{Cl}^-$  and water. The anionic form of chlorine forces the stomata to open. The stomata are responsible for the uptake of the plant's main nutrients: carbon, oxygen and hydrogen. These three elements constitute over 90% of the dry mass of plants. Plant mass is built up through photosynthesis. Agro ECA Protect increases the efficiency of photosynthesis by stimulating the opening of the stomata.

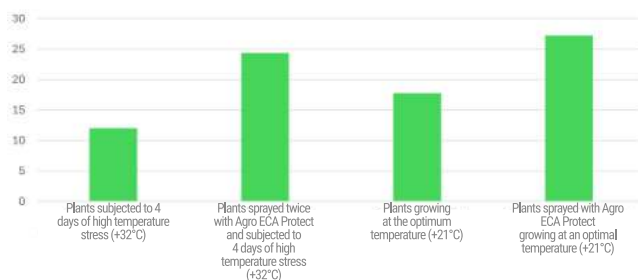
#### Agro ECA Protect stimulates the opening of stomata.



### It has a positive effect on crop size and quality

By stimulating the opening of stomata, photosynthesis efficiency is increased. Stomata remain open longer, even under stressful conditions for plants. This allows more  $\text{CO}_2$  to enter the stomata. There, the enzyme Rubisco can bind larger amounts of  $\text{CO}_2$  and produce more glucose. As a result, plants have more energy for growth and yield.

**The effect of Agro ECA Protect on photosynthesis intensity.** Average photosynthesis intensity ( $\mu\text{mol CO}_2 \text{ m}^{-2} \text{ s}^{-1}$ ) of four horticultural plant species (strawberries, cucumbers, lettuce, Chinese cabbage). Research conducted at the Institute of Horticulture in 2025.

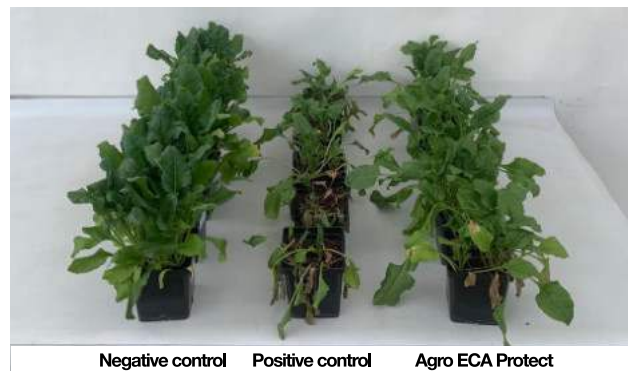


### Reducing physiological disorders resulting from cation

**deficiency.** Spraying or fogging plants with Agro ECA Protect disrupts the ionic balance in the plant. The anionic form of chlorine produced from hypochlorous acid forces the plant to absorb cations in order to restore ionic balance. Cations are absorbed along with water and, thanks to increased transpiration, are easily transported to the upper parts of the plant, to young leaves and fruits. This improves the feeding of plants with calcium, iron, manganese, copper and other elements. This reduces physiological diseases resulting from a deficiency of these elements.

### Reducing damage and stimulating growth during hot weather.

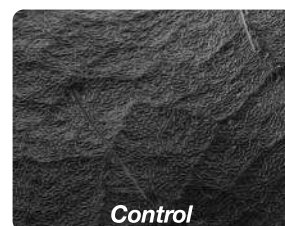
Agro ECA Protect forces the stomata to open even on hot days. This increases transpiration by about 20% compared to untreated plants. The water absorbed by the roots cools the plant from the inside and then evaporates outside. This protects the plant from overheating. It is important to apply the product immediately before hot weather and to ensure that the soil or substrate is moist.



*The effect of limiting the negative effects of high temperatures on sugar beet plants. On the left, plants growing at 23°C. In the middle, plants growing at 23°C and transferred to 35°C for 3 days. On the right, plants growing at 23°C, sprayed with Agro ECA Protect and transferred to 35°C for 3 days. Results of research conducted at the Plant Protection Institute in Poznań.*

The second factor helping to reduce plant burns during hot weather found in Agro ECA Protect is zeolite (60% silicon). Zeolite has a very large specific surface area and, when applied to plants, forms a microfilm – a physical barrier that lowers the temperature and protects leaves and fruit from UV radiation.

*Electron microscope images of the surface of a strawberry leaf. Visible white microfilm of zeolite (on the right).*



## Dosage, methods and timing of application:

### Cultivation of vegetables, berry crops and ornamental plants in the field and under cover:

#### Reducing the incidence of diseases:

- Intervention: after the occurrence of disease infection (based on the Farm Smart signalling system) or after rainfall.
- Preventive action: 1–2 times a week (after rainfall)
  - Spraying: 2.5% concentration, 300–800 litres of working fluid/ha
  - Fogging: 20% concentration, 60–120 litres of working fluid/ha
- Destructive action: after the onset of disease symptoms:
  - spraying: 4% concentration, 300–800 litres of working fluid/ha
  - fogging: 20% concentration, 80–120 litres of working fluid/ha
- Plant seedlings: prevention of disease and stimulation of growth – before planting in the field: spray generously or water for 2–3 days (in the morning on sunny days) – 4% concentration

#### Stimulating growth/increasing nutrient uptake

##### /reducing abiotic stress Abiotic stress (after frost, hailstorms, 6–18 hours before hot weather):

- spraying: 2.5–4% concentration, 300–600 litres of working fluid/ha
- fogging: 20% concentration, 60–120 litres of working fluid/ha

### Fruit tree cultivation:

#### Reducing the incidence of diseases:

- Intervention: after the onset of disease infection (based on a monitoring alert system, e.g. Farm Smart), or after rainfall: 2.5% concentration, 400–800 litres of working fluid/ha
- Destructive action: after the onset of disease symptoms: 4% concentration, 400–800 litres of working fluid/ha

#### Stimulating growth/increasing nutrient uptake

##### /reducing abiotic stress (after frost, hail, 6–18 hours before heat waves):

- spraying: 2.5–4% concentration, 300–600 litres of working fluid/hectare

### Agricultural crops:

#### Reducing the incidence of diseases:

- Intervention: after the occurrence of disease infection (based on a monitoring signalling system, e.g. Farm Smart), or after rainfall:
- Destructive action: after the occurrence of disease symptoms: 4% concentration, 150–300 litres of working fluid/hectare

#### Stimulating growth/increasing nutrient uptake

##### /reducing abiotic stress (after frost, hail, 6–18 hours before heat waves):

- Spraying: 2.5–4% concentration, 100–350 litres of working fluid/ha
- For winter crops, it is recommended to perform the first treatment in early spring, when the plants are weakened after winter (stimulating growth and destructive effect).
- Further treatments should be carried out after the occurrence of disease infection based on the Farm Smart system or after heavy rainfall. An additional treatment should be carried out after hailstorms.

### Seed treatment for agricultural and horticultural plants:

- Soak the seeds for 60–120 minutes, then dry and sow. Concentration: 1.5–2.5 per cent.

#### Stir the product before use.

- Agro ECA Protect should be applied in the evening or early in the morning.
- Agro ECA Protect can be used at temperatures from 1°C.
- The product must not be used in combination with pesticides, microorganisms or fertilisers, with the exception of:
  - Zeo Sand Silicon fertiliser,
  - liquid calcium nitrate,
  - potassium nitrate,
  - potassium monophosphate,
  - copper oxychloride,
- No adjuvant is required, as the zeolite contained in the product is an excellent adjuvant.
- If the pH of the water is above 7.5, it is recommended to lower the pH. Do not use ammonium-based nitrogen acidifiers. Nitric acid, phosphoric acid or citric acid are suitable for lowering the pH. Use 500 grams of citric acid per 1000 litres of water.

**Agro ECA Protect nie jest środkiem ochrony roślin.**

## Agro Smart Lab sp. z o.o.

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#### Your Distributor

The product is available from authorised distributors in dedicated garden shops and on the website: [agrosmartlab.pl](http://agrosmartlab.pl)