



TRUBIOL

TruBiol Plant Antifreeze
User's Manual

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About TruBiol Plant Antifreeze Plant Antifreeze?



TruBiol Plant Antifreeze Plant Antifreeze is a plant antifreeze solution with an innovative formulation.

TruBiol Plant Antifreeze can reduce the freezing point of plants up to 7 degrees Celsius. Using an atomizer spray it all over the plant. To increase yield and quality, continue spraying every 15 days while blooming.

Always dilute TruBiol Plant Antifreeze Plant Antifreeze with water for all applications. For the best results, use non-chlorinated water. If this is not possible, wait until chlorine levels are at a minimum before mixing TruBiol Plant Antifreeze Plant Antifreeze with the water in the tank.

- **Do not mix with water with a pH value above 7.0.**
- **CAUTION! If the pH level is above 7, mixing should not be done!**

The pH level is rated from 0 to 14. Products with a score of less than 7 are called "**ACIDIC**", and products with a score above 7 are called "**BASIC**" (alkaline).

Concentrated TruBiol Plant Antifreeze has a pH of 3.5 - 5, which is acidic. For this reason, it should never be mixed with chemicals with a pH value of more than 7, pesticides or wetting agents. Otherwise, as the equipment used for pulverization will be blocked by sediment, clogging will occur and TruBiol Plant Antifreeze will lose all its effects.

TruBiol Plant Antifreeze, creates different effects on plants depending on the age of the plant, genetic characteristics, growing environment, temperature and soil conditions and the additional fertilizers used on it. Not every plant can produce antifreeze proteins and amino acids. If they can produce any, TruBiol Plant Antifreeze will enable them to produce more or all.

TruBiol Plant Antifreeze will temporarily help the plants as described for up to 15 days, however, it will not allow plants to grow outside of their normal habitat. In other words, it cannot ensure that bananas are grown in Greenland.

The use of TruBiol Plant Antifreeze in greenhouses will increase the resistance of plants to cold and frost injuries. Heating levels can be reduced and in some cases, heating may not be needed at all.

TruBiol Plant Antifreeze's bio-mineral content is easily absorbed by the leaves, stems, and roots of plants. Plants start heavy metabolic activity in a very short time, and the content of amino acids, proteins, sugar, fat, vitamins, minerals, and especially antifreeze proteins increases. The berries become larger, heavier, brighter, and tastier, thus increasing the quality and yield.

TruBiol Plant Antifreeze provides plants with greater photosynthetic ability. This increases the osmotic pressure and uptake of water and nutrients in the roots of plants. For this reason, plants can better withstand heat and arid environments. Leaves become thicker and healthier.

These features make the plants stronger against unwanted injuries from the outside.

Application Conditions

Choose calm weather conditions for all applications. Unless it rains heavily after application, TruBiol Plant Antifreeze will begin to provide protection after about 6 hours.

For the best result, apply two days before cold or cold weather. An application at least 6 hours before freezing will provide the best protection.

TruBiol Plant Antifreeze will not work if plants are under cold stress. It is recommended the application should be done around 10:00 or 16:00 above 12 degrees Celsius for greenhouse plants and above 9 degrees Celsius for outdoor plants. If this is not possible, try to use it during the hottest hours of the day.

The amount of area that can be treated with 1 kg (liter) TruBiol Plant Antifreeze will depend on;

- a) Atomization level of the sprayer used
- b) The size of the plant
- c) Plant surface area
- d) The distance between plants.

Application Amounts



TYPE	HOW TO APPLY?	COVERAGE
Trees	Dilute 5%. Add 1L TruBiol Plant Antifreeze to 200 L tap water. Spray the solution over the leaves with an atomizer.	5L-6L per Hectar
Crops	Dilute 5%. Add 1L TruBiol Plant Antifreeze to 200 L tap water. Spray the solution over the leaves with an atomizer.	4L-5L per Hectar
All Crops	Mix TruBiol Plant Antifreeze with water soluble fertilizer.	3L per 10Kg of Fertilizer
Seeds	Dilute 5%. Add 1L TruBiol Plant Antifreeze to 200 L tap water. Place seeds on a cloth and spray the solution on the seeds with an atomizer.	

Application Amounts



• Strawberry

Before sowing: Immerse the seeds/seedlings in the prepared solution with 450ml of TruBiol Plant Antifreeze diluted with 100 liters of water. Apply the product on the 7th and 17th days after planting and as soon as flowering begins. Spray a finely atomized mist all over the plant. Repeat the product every 7-15 days at the risk of cold and frost. Apply every 15 days to increase yield and quality.

• Potatoes

Before sowing: Soak potato tubers in a solution prepared with 450ml of TruBiol Plant Antifreeze diluted with 100 liters of water or spray as a fine mist. The next application should be done by spraying all the leaves when the leaves start to emerge. In cases where there is a risk of cold and frost, the application should be repeated every 7-10 days.

• Apples and Pears

The product should be applied to such fruit trees for the first time in autumn, immediately after leaf fall. To protect from frost and cold injuries, the second spraying should be done when the buds turn into flowers and young fruits. In applications in the spring months, weather observation is required so that it can be applied 2 days before the risk of frost at the latest. Use 500ml of TruBiol Plant Antifreeze diluted with 100 liters of water. Reapply every 15-20 days after the spring cold and danger of frost have passed, to improve mineral uptake, strength and quality.

• Cut Flowers

In open areas and greenhouses where there is a risk of cold and frost: At each stage of growth, 450ml TruBiol Plant Antifreeze diluted with 100 liters of water should be applied by spraying the leaves in the form of atomized mist. In case of color change, it is recommended to make a preliminary test on the flowers, in this case avoid spraying buds and flowers. TruBiol Plant Antifreeze will extend the life of cut flowers provided the vase water is mixed with NPA as described above and sprayed every 15 days before cutting.

• Home and Garden Potted Plants

To protect from cold and frost-related injuries or to minimize damage; mix 500ml of TruBiol Plant Antifreeze with 100 liters of water and spray as a fine mist all over the outdoor potted plants. Spray every 15 days to improve the appearance and life of indoor plants.

• Cherry, Nectarine, Apricot

Use 500ml of TruBiol Plant Antifreeze diluted with 100 liters of water for all applications. The first application should be made in autumn after all leaves have fallen. The next application should be done in the spring, when the buds begin to grow, then another application should be made during the flowering period. Monitor the weather and reapply at least 2 days before cold and frost.

Application Amounts



• **Tomato, Pepper and Eggplant**

This plant group should first be applied at the seed stage. Before sowing, seeds should be placed on a dry and clean cloth, and 500ml of TruBiol Plant Antifreeze solution diluted with 100 liters of water should be sprayed on it. Mix well and allow it to dry before planting. The second application should be made after the seeds have opened if there is a danger of cold and frost. To increase yield and quality, continue spraying every 15 days while blooming.

• **Lettuce**

The first application should be made after the seeds have emerged. If there is a risk of cold and frost after that, apply 2 days before. Use 450ml of TruBiol Plant Antifreeze diluted in 100 liters of water every 15-20 days.

• **Carrot, Parsnip**

Before sowing the seeds, they should be placed on a dry and clean cloth, and 500ml of TruBiol Plant Antifreeze diluted with 100 liters of water should be sprayed on it. Mix thoroughly and dry before sowing. The second application should be done after the seeds have opened if there is a danger of cold and frost. Keep applying every 15 days to increase yield and quality.

• **Sugar Cane**

Before planting the seeds, 500ml of TruBiol Plant Antifreeze diluted with 100 liters of water should be sprayed on a dry and clean cloth. Mix thoroughly before sowing and thoroughly dry the seeds to be treated. The second application should be made after the seeds have opened, in the spring if there is a danger of cold and frost. If the risk persists, apply once a week. Keep applying every 15 days to increase yield and quality.

• **Wheat, Barley, Rye, Oats**

Seeds should be placed on a dry and clean cloth before planting, and 500ml of TruBiol Plant Antifreeze diluted with 100 liters of water should be sprayed on it. Mix well and allow to dry before planting. The second application should be done after the seeds have opened, and the third application should be done during the flowering period.

• **Beans, Chickpeas, Peas**

TruBiol Plant Antifreeze will protect this group of plants from cold and frost and increase yield. Before sowing, seeds should be sprayed with 450ml of TruBiol Plant Antifreeze diluted with 100 liters of water and mixed thoroughly. If there is a danger of cold and frost, a second application should be made after the seeds have opened. Apply every 15-20 days during flowering to increase mineral uptake, yield and strength.

• **Kiwi**

To protect from cold and frost, apply twice in the fall with an interval of 15-20 days. Apply once in the spring when buds begin to appear. It should be applied during the flowering period. Apply every 15-20 days to increase mineral intake, efficiency and potency. Use 500ml of TruBiol Plant Antifreeze diluted with 100 liters of water.

Application Amounts



• Citrus, Evergreen Fruit Trees

The first application should be done in autumn during fruit development. Second Application one week before harvest. The third application should be done in the spring if there is a risk of cold and frost. Apply efficiency and strength every 15-20 days to improve mineral intake. Use 500ml of TruBiol Plant Antifreeze diluted with 100 liters of water.

• Plum

The first application should be made in autumn, after all leaves have fallen. Apply in spring when buds begin to grow and during flowering. If there is a risk of cold and frost in the spring, apply every 7-15 days. Apply every 15-20 days to increase mineral intake, yield and potency. Use 500ml of TruBiol Plant Antifreeze diluted with 100 liters of water.

• Grape

The first application should be made in autumn after all leaves have fallen. Apply two days before the risk of cold and frost when the buds open in the spring and the stem reaches around 10-20 cm. Apply every 15-20 days to increase mineral intake, efficiency and potency. Use 500ml of TruBiol Plant Antifreeze diluted with 100 liters of water.

• Walnut

In order to protect young plants, male and female flowers from cold and frost, the first application should be made in the spring, at the beginning of flowering. After that, apply 2 days before the risk of cold and frost. Apply efficiency and strength every 15-20 days to improve mineral intake. Use 500ml of TruBiol Plant Antifreeze diluted with 100 liters of water.

• Hazelnut

The first spraying should be done after the leaves fall in autumn. The second application should be done at the end of winter. If there is no warning of cold and frost, it will be the right time to start the application when the fruits start to appear. Apply every 15-20 days to increase mineral intake, efficiency and potency. Use 500ml of TruBiol Plant Antifreeze diluted with 100 liters of water.

• Brassicas - Broccoli Cauliflower Species

Before planting such plants, the product should be sprayed with atomized mist. Because of its waxy leaves, use spray equipment that sprays it like a fine mist to create better coverage. To improve mineral intake, apply efficiency and strength every 15-20 days. Use 500ml of TruBiol Plant Antifreeze diluted with 100 liters of water.





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