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METHOD OF NOURISHING AND PROTECTIVE SOLUTIONS ELECTRIC FIELD CORONA DISCHARGE OBJECTS ON PLANT ORIGIN

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Among the methods of fertilizing and plant protection technologies are widely used, including Technology spraying crops with an initial grinding working solutions airflow drops followed by charging solutions using electrostatic field corona discharge.

The purpose of research – to develop technologies that will contribute to a more complete precipitation of nourishing and protective substances on the surface of all green plants, including reverse their part.

Materials and methods of research. This technology has found wide acceptance in many countries of the world, and above all, Germany, US, Russia, France, Japan and others. It is used to protect and feed plants for both open and closed ground, providing working solutions to reduce losses, mono dispersion and uniformity of deposition on all surfaces of the plant object [2, 4].

However, I must say that almost all working solutions are aqueous solutions, which causes their high electrical conductivity (volume resistivity greater than 10^2 ... 10^3 Om·sm) and as a result of the rapid electric charge, but not prolonged detention its solution droplets, which in turn, affects the □do keeping them on the surface [1, 3].

Results. Duration retention of electric charge on the surface of the green mass, primarily leaves significant impact on the learning process of working solutions, the effectiveness of their action on these biological objects.

This led us to develop [5] fundamentally new way of applying nourishing and protective solutions by creating a special protective layer of ionized air full-□fakela□.

Its essence is that the substance that is applied to the plants (nutrient or protruyu whose drug receives high-voltage electrode charging electric charge (q = 10^{-4} ... 10^{-8} Cl) with the electrode voltage (U = 10 ... 60 V) and current (I = 10^{2} ... 10^{3} μA) and served in mizhpovitryanyy layer with forced air supply. This working solutions of charged particles (q = 10^{-4} ... 10^{-8} Cl) in the movement to give the object a small portion of their electric charge (≈10^{-15} ... 10^{-7} Cl) flow of air that is fed to the sprayer (V = 0,5 ... 10 m/s) and is thus ionized. At the same time, the air is ionized air ions affect the environment, which have a lower value of electric charge.

Laboratory research and testing conditions in greenhouses showed the effectiveness of the method developed by us that may be proposed for implementation in stimulate growth processes of biological objects of plant origin, as improving the efficiency in the fight against pests, microorganisms.

Findings

Using the above solution can be used at different stages of life plant facilities (preplant treatment, cultivation, storage) and at various sites in terms of technological production, which is associated with protection (horticulture, plant growing, both in closed and in open ground). Given the compactness and simplicity of this method it can be offered especially on farms where economic effect can exceed 25 – 30 % of existing processing methods.