CLOSED UNDER THE CIRCUMSTANCES CULTIVATED PLANTS PRODUCTIVITY IN INCREASING MICROBIOLOGICAL PREPARATIONS OF APPLICATION MODERN BIOTECHNOLOGY

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Abstract : This in the article closed under the circumstances cultivated plants productivity in increasing microbiological of drugs place and importance analysis Microbiological of drugs modern biotechnology , their plant growth and to develop impact , to diseases against in the fight efficiency scientific sources based on Research this shows that bio fertilizers, my corrival drugs and endophyte bacteria closed in the circumstances of plants root system developing and increasing productivity by 15–25% increases. Also, such biotechnology ecological safe, economical effective and stable village farm to develop service does.

Key words: closed conditions, microbiological preparations, biotechnology, bio fertilizer, mycorrhiza , endophyte bacteria, productivity, greenhouse .

Login . Current in the period world on a scale population food to their products was demand sharp increasing Therefore, the village farm in the field new technologies current to do, intensive methods wide application necessity is increasing. Closed plant in conditions (greenhouse, hydroponics, geoponics) cultivation system of the year all in the seasons good quality vegetable and fruits to take opportunity is creating.

However, closed under the circumstances plants high productivity with cultivation many problems to the surface brings. The most main from problems one – of plants food to the elements was need and of diseases fast This is the spread. problems solution in the process of microbiological drugs based on working issued biotechnology important importance profession is doing .

Microbiological of drugs place Microbiological drugs – useful microorganisms based on prepared biological are tools. Their main tasks of the following consists of :

Nitrogen fixation – atmosphere nitrogen garden, to the plant adaptable in the form delivery giving (Azotobacter , Rhizobium);

Phosphorus and potassium mobilization – in the soil phosphate and potassium compounds soluble to form transfer (Bacillus, Pseudomonas);

Phytohormone and cytokine production – growth regulators such as auxin, gibberellin, encouraging of substances synthesis;

Antagonistic effect – suppression of pathogenic microorganisms

(Trichoderma, Bacillus subtilis);

Stress factors endurance increase – drought, salinity, low or high temperature such as to factors tolerance to provide.

Modern biotechnological approaches :

1. Organic fertilizers – organic substances disintegrating and to the plant feed elements delivery giving preparations. They in greenhouses tomato , cucumber and pepper increase productivity by 18–22% increased .

2. Mycorrhiza preparations – plant root with symbiosis harvest so, in the soil water and minerals fast to master help For example, mycorrhiza added cucumber seedlings simple to seedlings 1.5 times more than fast developed.

3. Endophyte bacteria – plant to the tissues to enter and grow encouraging substances working They harvest quality increases the vitamin and mineral content of the product enriches.

4. Bio protectors – plants from diseases protection doer biological tools. For example, Trichoderma based on drugs fusariosis and verticillium wilt disease by up to 40% reduces.

5. Integrated bio- preparations – hydroponics and geoponics to systems included microorganisms of plants fast and stable growth provides.

Uzbekistan and foreign experiments this shows that: Rhizobacteria when used tomato productivity average 20% to increased (Khalilova and et al ., 2022).

Mycorrhizal drugs with processing given cucumber street chats root system 25–30% stronger developed (Kudoyberganov, 2021).

Trichoderma based on prepared biofungicides in greenhouses disease spread by 35–40% reduced (Smith, 2020).

Endophyte bacteria in plants C vitamin and carotene amount increasing, product quality improved (Li et al., 2019).

Conclusion: Closed under the circumstances plants productivity in increasing microbiological drugs important biotechnological solution is considered. They plant growth and

development stimulates, protects from diseases protection does and stress factors endurance strengthens. The most importantly, microbiological drugs ecological clean and economic effective in the future stable village farm in development solution doer role plays.

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