

The Occurrence of Fungi from the Genus *Alternaria* Nees Ex Wallr. In Greenhouse Conditions of Uzbekistan When Growing Tomatoes and Cucumbers

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Annotation. When choosing tomato and other flowering vegetable varieties for cultivation in open and sheltered areas, it is advisable to pay special attention to those resistant to the most common diseases in this area. The introduction of resistant varieties will increase productivity and reduce the cost of protection measures.

Agriculture has set major tasks to significantly improve the population with vegetable growing products, and industry with raw materials, bacterial, viral, phytoplasmic organisms and nematodes.

Key words: tomato, cucumber, pathogen, diseases, fungicide, fungi species, fungus, alternariosis, Alternariosis diseases, infection, parasite, phytotoxin.

Introduction

Alternariosis (early, dry, brown or concentric spotting, macrosporiosis) is one of the widespread and harmful diseases of many crops. At the same time, there is no unambiguous opinion about the species composition of pathogens and the names of diseases. Mushrooms of this genus are especially poorly studied in the conditions of the Republic of Uzbekistan. In this connection, we set ourselves the task of determining the quantitative and species composition of Alternariosis in greenhouse conditions when growing tomatoes and cucumbers.

Fungicides registered in Uzbekistan against diseases of vegetable crops, in particular tomatoes, are relatively few. In this regard, the availability in the country of a sufficiently wide range of highly effective and registered fungicides with different active ingredients is of great importance, so that agricultural workers have the opportunity to use them to avoid the development of resistance in pathogens to individual drugs [3,6,7].

The prevalence and harmfulness of the disease were determined by M.I. Dementiev (1977), A.E. Chumakov et al. (1990); the degree of damage to plants according to a four-point system; quantitative accounting of fungal germs in the soil and in the air according to M.A. Litvinov (1969) [1,2,4].

Method of conducting research. The method of determining the damage of *Alternaria* disease to vegetable crops. The number and weight of vegetables are taken into account to determine the yield reduction.

The number of plants in the tested samples was 10. The number of healthy and diseased vegetables in the samples was calculated, and the difference between the number of diseased plants and vegetables was expressed as a percentage, and the damage of the disease was found by the following formula.

$$B = (A - a) \times 100 / A$$

B- lost yield, %

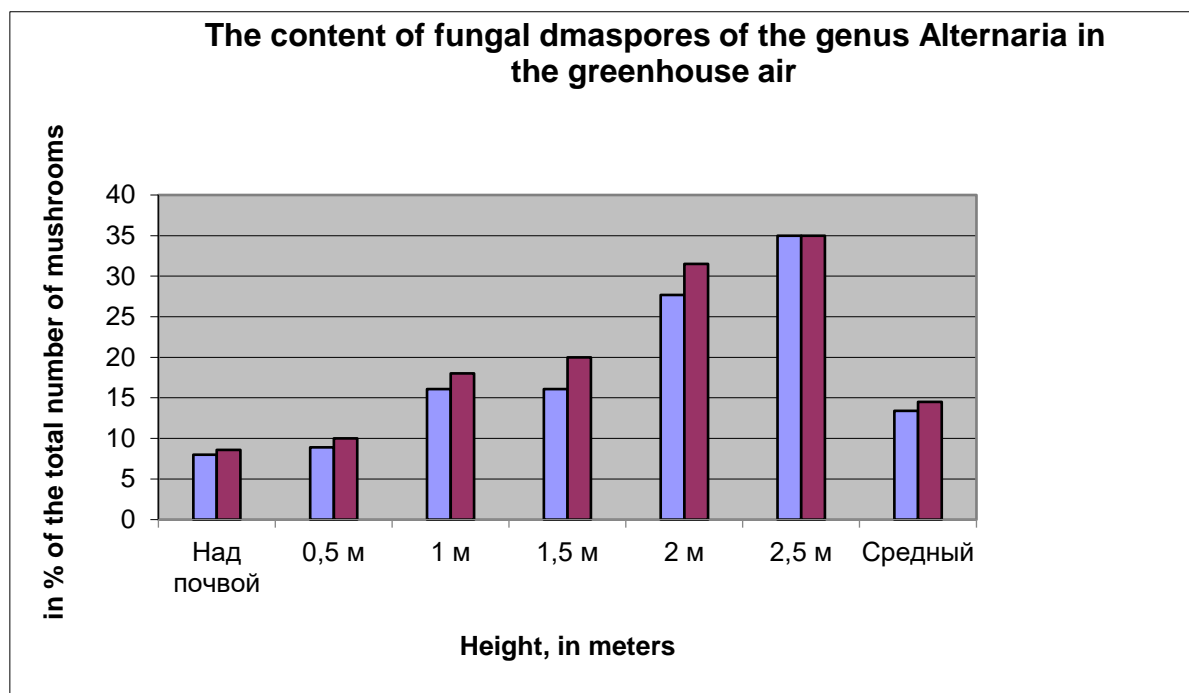
A-harvest of healthy plants;

a-harvest of a diseased plant [1].

Greenhouses require a certain temperature (20-24°C during the day and 16-18°C at night) and soil moisture (70-80% relative to full moisture capacity). Until flowering, watering is carried out every 5-7 days

at the rate of 8-10 l/m². Watering is carried out every 3-4 days from the beginning of fruiting to the beginning of ripening. The relative humidity of the air in the greenhouse should be 60-70% [8,9].

Research results. To clarify the general picture of the distribution of fungi of the genus *Alternaria*, we examined the air environment and soil horizons of the greenhouse and compared the proportion of their infestation against the background of all fungal germs [8,11].



Their percentage increases greatly with the height above the soil level of the greenhouse. At a height of 2,5 meters in all the investigated greenhouses, the proportion of identified colonies of species of the genus *Alternaria* reaches up to 35% [9,10].

It is known that the soil is the most convenient environment for many organisms to live. Most species of the genus *Alternaria* are saprophytes and facultative parasites that are closely related to the soil. In this connection, we carried out a quantitative account of the diaspores of species of this genus and found out the percentage with the total content of fungi. As can be seen from fig. 2 the number of fungal germs of *Alternaria* in the soils of the greenhouse is as high as in the air. At a depth of 20-30 and 30-40 there is a slight decrease, then their number again appears [8,9].

Further, fungi of the genus *Alternaria* were isolated from greenhouse plants. The defeat by fungi of the genus *Alternaria* was observed mainly on leaves, fruits and stems of tomato. When identifying the species of the isolated strains, two species were found (*Alternaria alternata* and *A. solani*). The distribution of *Alternaria alternata* on greenhouse tomatoes turned out to be 26%. The second species (*Alternaria solani*) is relatively less common (19,5%). When calculating the loss of tomato crop, both species had almost the same aggressiveness (within 11%). On cucumbers, these species are found only in dried leaves and apparently do not cause any damage [10,11].

Summary. Analyzing these data, we can conclude that fungi of the genus *Alternaria* are more resistant to adverse environmental conditions. In particular, a higher percentage of them in the deep layers of the soil and in the upper layers of the air environment of the greenhouse indicates their tolerance to the lack of oxygen, nutrients and adaptability to distribution. For greenhouse tomatoes, *Alternaria* is a clear threat.

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ПРОИСХОЖДЕНИЕ ГРИБОВ РОДА ALTERNARIA NEES EX WALLR. В ТЕПЛИЧНЫХ УСЛОВИЯХ УЗБЕКИСТАНА ПРИ ВЫРАЩИВАНИИ ПОМИДОРОВ И ОГУРЦОВ

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Аннотация. При выборе сортов томатов и других цветущих овощей для выращивания на открытых и защищенных участках особое внимание целесообразно обращать на сорта, устойчивые к наиболее распространенным в данной местности заболеваниям. Внедрение устойчивых сортов повысит урожайность и снизит затраты на меры защиты. Перед сельским хозяйством поставлены большие задачи значительно оздоровить население продуктами овощеводства, а перед промышленностью - сырьем, бактериальными, вирусными, фитоплазматическими организмами и нематодами.

Ключевые слова: томат, огурец, возбудитель, болезни, фунгицид, виды грибов, грибок, альтернариоз, альтернариозные заболевания, инфекция, паразит, фитотоксин.

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G.Q.Xalmuminova- TerAIRI., “O‘simliklar himoyasi va qishloq
xo‘jalik mahsulotlari karantini”
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xo‘jalik mahsulotlari karantini” kafedrasi talabasi

**O‘ZBEKISTON ISSIQXONALARIDA UCHAYDIGAN POMIDOR VA BODRING
YETISHTIRISHDA ALTERNARIA NEES EX WALLR. TURKUMINING UCHRASHI**

Annotatsiya. Pomidor, bodring va boshqa sabzavotlarning ochiq va issiqxonalarda yetishtirish uchun navlarini tanlashda hududda eng ko‘p uchraydigan kasalliklarga chidamli navlarga alohida e‘tibor qaratish maqsadga muvofiqdir. Chidamli navlarni joriy etish hosildorlikni oshiradi va himoya choralari xarajatlarini kamaytiradi. Qishloq xo‘jaligi oldiga aholi salomatligini sabzavot yetishtirish mahsulotlari bilan, sanoat oldiga esa xomashyo, bakterial, virusli, fitoplazmatik organizmlar va nematodalar bilan sezilarli darajada yaxshilash bo‘yicha katta vazifalar qo‘yildi.

Kalit so‘zlar: pomidor, bodring, patogen, kasalliklar, fungitsid, zamburug‘lar turlari, zamburug‘, alternarioz, alternarioz kasalliklari, infeksiya, parazit, fitotoksin.