UDC 635.649: 582.951.4: 581.2: 582.28: 632.4

STEM ROT DISEASE IN SWEET PEPPER IN ANDIJAN REGION

[1]D.T.Aznabakieva, [2]M.B.Rasulova, [3]M.R.Rakhimova
[1,2,3] Andijan Institute of Agriculture and Agrotechnologies. Department of Plant protection
https://doi.org/10.5281/zenodo.7958160

Abstract. *Among the vegetable crops in our country today, pepper varieties (Capsicum species, mainly Capsicum annuum species) are one of the crops that are increasing in terms of cultivated area and production volume. The fight against harmful organisms, especially diseases, is of great importance in order to obtain high-quality and high yields from agricultural crops.*
Keywords: *Capsicum annuum, sweet pepper, Fusarium solani, fungus, perithecia, Sanjivi, Sporagin, Plantastim.*

Actuality of the topic. After the independence of Uzbekistan, a number of decisions were made in order to further develop agriculture, improve the state management system in the field, widely introduce market relations, strengthen the legal basis of relations between entities that grow, process and sell agricultural products, attract investments in the field, and introduce resource-efficient technologies, the adoption of decrees and programs creates a legal basis for the implementation of reforms. These documents are aimed at increasing agricultural products, fully meeting the needs of the population, selling abroad, and generally stabilizing our economic independence.

In the “Concept of priority development of the system of knowledge and innovations in agriculture in 2021-2025” approved by Decree No. PD-6159 of the President of the Republic of Uzbekistan dated February 3, 2021 “On the further development of the system of knowledge and innovation in agriculture and the provision of modern services” mentioned that “effective use of land and water resources, increasing the productivity of agricultural crops, creating new varieties, developing selection, seed and nursery breeding, introducing scientific achievements into production, specializing the regions of the republic in the cultivation of certain agricultural crops and food products. the development of science is an urgent task”.

Today, among vegetable crops in our country, one of the crops that is increasing in terms of cultivated area and production volume is pepper varieties (*Capsicum* species, mainly *Capsicum annuum* species). As a vegetable, the fruit of sweet pepper is eaten fresh, boiled, dried, salted, vinegared with spices, canned, and hot pepper is eaten fresh, dried, pickled, dried and other forms as a spice. Sweet and hot peppers are grown in the open field as a main and repeated crop and in greenhouses.

The fight against harmful organisms, especially diseases, is of great importance in order to obtain high-quality and high yields from agricultural crops. Law No. 117-II of the Oliy Majlis of the Republic of Uzbekistan. of August 3, 2000 “On Protection of Agricultural Plants from Pests, Diseases and Weeds”. The research work of this thesis contributes to a certain extent to the implementation of the tasks defined in the decision No. 148 of the Cabinet of Ministers of the Republic of Uzbekistan dated March 28, 2004 "On measures to improve and increase the efficiency of the plant protection service and other regulatory legal documents related to the protection of plants from harmful organisms.

The fight against any plant disease begins with the identification of the type of microorganism that causes it. According to literature sources, diseases caused by fungi (~64), oomycetes (11), bacteria (12), phytoplasmas (3), viruses (32) and nematodes (6) are recorded in pepper varieties. In addition, 6 species of tall flowering plants parasitize pepper crops. Of the pathogenic fungi and oomycetes, 6 types damage pepper seeds, 16 types grass, 19 types leaves, 12 types stems, 21 types damage roots and rhizomes, 45 types damage fruits, and another 6 types cause wilting (wilt) in plants.

The purpose of the research. Taking into account the above information, to determine the distribution of fungal diseases in sweet and hot pepper crops in Andijan region and the composition of pathogenic species that cause them, as well as the degree of resistance of varieties to some common diseases, to study the systematic places, biology and ecology of the causative fungi, to determine the means of combating the main diseases of these crops improving the measures against them based on the determination of their effectiveness will make it possible to improve the phytosanitary status of pepper fields.

The main purpose of the research is to study the phytosanitary condition of farms growing pepper in Andijan region and to develop scientifically based measures to fight against diseases.

In 2021, it was determined that pepper plants will wither and die in the greenhouses and fields of the Bakhor farm in Shahrikhan district of Andijan region. Observational and subsequent laboratory studies compared disease symptoms on wilted pepper plants with those of fusarium wilt, and the disease identified was root and stem rot disease of pepper plants (caused by *Fusarium solani*).

When samples of wilted pepper plants from the greenhouse were grown on special agar media in two separate laboratories, the majority of the samples grew Fusarium.

Disease symptoms. Symptoms of *Fusarium solani* in sweet pepper, which kill plants, include root rot and stem rot.

Usually, in the first stages of the appearance of the disease, its external symptoms are not always visible in plants, often this stage is hidden. In Canada (in the greenhouse), it was found that such a latent period of the disease lasted even up to 2-3 months in the tissues of the root neck of pepper. In such plants, it has been determined that the external symptoms of the disease are triggered by plant stress (abundant crop production, unfavorable environmental conditions, plant senescence).

After a certain period of time after the latent stage of the disease, due to severe damage to the plants, they suddenly begin to turn yellow and wither, fruiting stops, the plants completely die and dry up. In heavily infected plants, brown, dark-brown, almost black sores form on the root neck and stem, the affected tissues rot, and the inner parts of the heavily infected root neck and stems also rot. Later, if there is high humidity, yellowish-brown or light-orange colored, pus-shaped, very small (less than 1 mm in diameter) reproductive bodies *(perithecium)* of the fungus are formed on these wounds. The fungus also damages the leaves, old flowers and fruits of plants, brown spots are formed in the affected areas.

Countermeasures

- Use healthy seedlings of pepper free from *Fusarium solanii* for planting.
- It is necessary to carefully examine the seedlings prepared for planting in the field, to make sure that they do not have wilting and small spots and wounds on the root neck and stems.
- Crop rotation; good predecessors include cabbage, corn, legumes, and squash.

- In order to improve the health of the soil, it is necessary to regularly apply biopreparations, well-rotted manure or compost, remove plant residues and weeds from the field, it is recommended to sow the seeds with biological preparations Sanjivi , Sporagin, liquid or Plantastim (liquid).

- To increase the resistance of plants to diseases, any of the stimulants containing salts of humic acids (humates) are sprayed 2-3 times during the growing season.

- Do not water the crop more than necessary, do not water the whole night, finish watering as soon as possible (in 1-3 hours); irrigation water should not go too close to the base of the plant, if possible, it helps to make the furrows higher.

- In order to prevent the disease from spreading to healthy plants around the infected plant, the diseased plants should be immediately dug up and buried or burned outside the field. When this work is carried out before the spread of the disease, it is recommended to remove 1-2 healthy-looking plants around the diseased plants.

When removing diseased plants from the field, it is necessary to prevent them from touching healthy plants. Since the disease-causing fungus can be kept in a saprophytic form, it is necessary to regularly remove plant residues, rotten and fallen fruits and weeds from the field.

Before re-entering the field, the workers who have completed the above tasks must thoroughly wash their hands and bodies with soap and change their work clothes. Used work clothes should be washed and ironed before reuse.

REFERENCES

1. Ҳасанов Б. А., Хамираев У.Қ., Ўтаганов С. Б., Азнабакиева Д. Т., Шеримбетов А.Г. 2021. Қалампирнинг фузариоз касалликлари. Агрокимёҳимоя ва ўсимликлар карантини, 2021, № 4, 72-77 бет.
2. Хасанов Б.А. 1987. Виды родов Bipolaris Shoemaker и Exserohilum Leonard et Suggs на злаках и в воздухе в Средней Азии и Казахстане. Микология и фитопатология, 1987, т.21, № 3, стр. 215-220.
3. Хасанов Б.А. 1991. Грибы как слабые патогены культивируемых злаков. Сельскохозяйственная биология, 1991, № 1, с.154-161.
4. Хасанов Б.А. 2009. Биология и современная таксономия грибов рода Rhizoctonia De Candolle. «Актуальные проблемы альгологии, микологии и гидроботаники». М-лы международной научной конф. 11-12 сентября 2009 г. Ташкент, 2009, стр. 22-30.