SYNERGISTIC EFFECT OF ECOFACTORS ON THE IMMUNE SYSTEM

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Abstract: This article contains uptodate information on the effects of various insecticides and microorganisms on the immune system. Insecticides are chemicals that damage human organs and tissues and are used to destroy foreign organisms. Infections are pathogens that cause various diseases. The combined effects of insecticides and infections on living organisms result in complete disruption of organ, tissue, cellular, immune, and natural defense mechanisms. To protect against the negative impact of various microorganisms and abiotic factors, it is necessary to control their use, etc.
Keywords: Abiotic factors, synergy, insecticide, infection, microorganism, pathogen, complex, cell, immune system, aggressive, function, mitochondria, membrane.

СИНЕРГЕТИЧЕСКОЕ ДЕЙСТВИЕ ЭКОФАКТОРОВ НА ИММУННУЮ СИСТЕМУ

Аннотация: Рекомендуемая статья содержит актуальную информацию о влиянии различных инсектицидов и микроорганизмов на иммунную систему. Инсектициды-это химические вещества, повреждающие органы и ткани человека и используемые для уничтожения чужеродных организмов. Инфекции-это патогены, вызывающие различные заболевания. В результате комбинированного воздействия инсектицидов и инфекций на живые организмы происходит полное нарушение функций органов, тканей, клеток, иммунитета и естественной защиты. Для защиты от негативного воздействия различных микроорганизмов и абиотических факторов необходимо контролировать нормы их использования и т. д.
Ключевые слова: Абиотические факторы, синергетика, инсектицид, инфекция, микроорганизм, патоген, сложные, клетка, иммунная система, агрессивный, функция, митохондрия, мембрана.

Introduction

Due to global developments worldwide, there is increasing information about the impact of various insecticides and microorganisms on the immune system. Insecticides are chemicals that damage human organs and tissues and are used to destroy foreign organisms. Infections are pathogens that cause various diseases. The combined effects of insecticides and infections on living organisms lead to complete disruption of organs, tissues, cells, the immune system, and natural defenses. To protect against the negative impacts of various microorganisms and abiotic factors, it is necessary to adhere to standards for their use, etc.

It is known that when certain microorganisms and abiotic factors enter a living organism, they are destroyed by its own organs and tissues, as well as the immune system. However, their combined effects, depending on the area of exposure, can lead to serious complications, including death. Therefore, infections have different names depending on the effect they have.

Some of these infections are listed below: Microorganisms that cause anemia, hypotension, malaria, hepatitis, tuberculosis, trichinosis, respiratory failure, and other diseases. These

microorganisms, which feed on the body of a living being, are called parasitic infections. Parasites are the causative agents of infectious diseases transmitted through food, drinking untreated (contaminated) water, insect bites, and other factors. In some cases, depending on the pathogen, antibiotic-resistant microorganisms are called bacterial infections. Bacterial infections are characterized by rapid spread, and since they are single-celled organisms, they are microorganisms capable of independent reproduction. Therefore, they are infectious agents capable of causing various infectious diseases. For example, they can cause respiratory diseases, urinary tract infections, kidney diseases, pneumonia, tuberculosis, skin infections, gastrointestinal infections, meningitis, etc.

Insecticides are toxic substances used to kill various pests, and their excessive use causes various diseases, including infectious ones. Thus, insecticides are toxic substances that specifically affect the immune system of living organisms, cells and their internal organelles, as well as mitochondrial membranes (Fig 1).

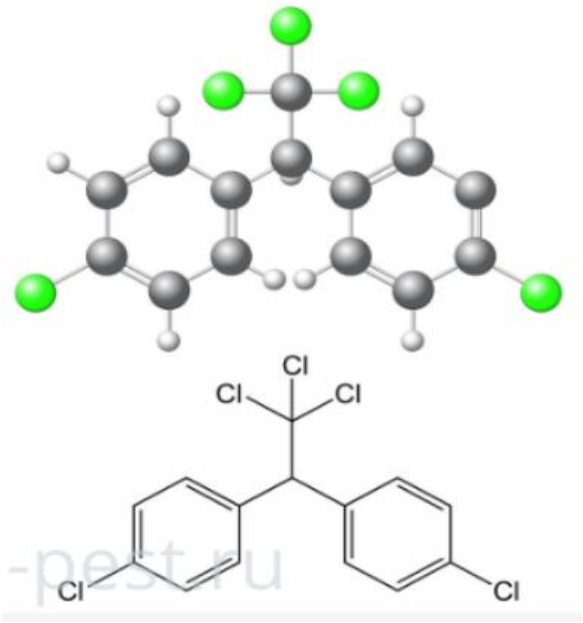


Fig 1. Insecticide dichlorodiphenyltrichloroethane.

(Image source:https://stop-pest.ru/obshhaja-klassifikacija-insekticidov/)

Infections are microorganisms. They penetrate complex systems, living organs and tissues, and even organelles under the direct influence of various factors, causing infectious diseases. For example, bacteria, viruses, fungi, parasites, prions (infectious proteins) and others.

Based on the above, it can be concluded that the impact of infections and insecticides on the immune system can be both severe and very mild. Understanding these issues is a pressing issue.

Microorganisms that cause influenza, colds, measles, chickenpox, AIDS, hepatitis, and other diseases that are unable to reproduce on their own are called viral infections. Viral infections are infectious agents that are significantly smaller than bacteria and, in addition to the above, can cause complex diseases such as HIV and COVID-19.

Microorganisms that attack the immune system and cause trichophytosis, candidiasis, keratomycosis, dermatomycosis, and other diseases are called fungal infections. Fungal infections of the skin, nails, and internal organs are currently widespread.

The infections discussed above, as well as other types (Fig 2), have common features, namely: their level of aggressiveness largely depends on the immune system of the living organisms. The immune system of living organisms protects against external foreign factors, maintains the vital functions of organs and tissues, and ensures a healthy lifestyle. However, exposure to various microorganisms, pesticides, and heavy metals can prevent the immune system from performing its functions, for example.

When it affects white blood cells, it suppresses the body's immune system. Once it recognizes the problem, the virus is unable to fight it, interact with other cells, or perform other functions. Specific functions of various cells are disrupted. In particular, mitochondrial membrane function is negatively affected by the pores sensitive to cyclosporine A.

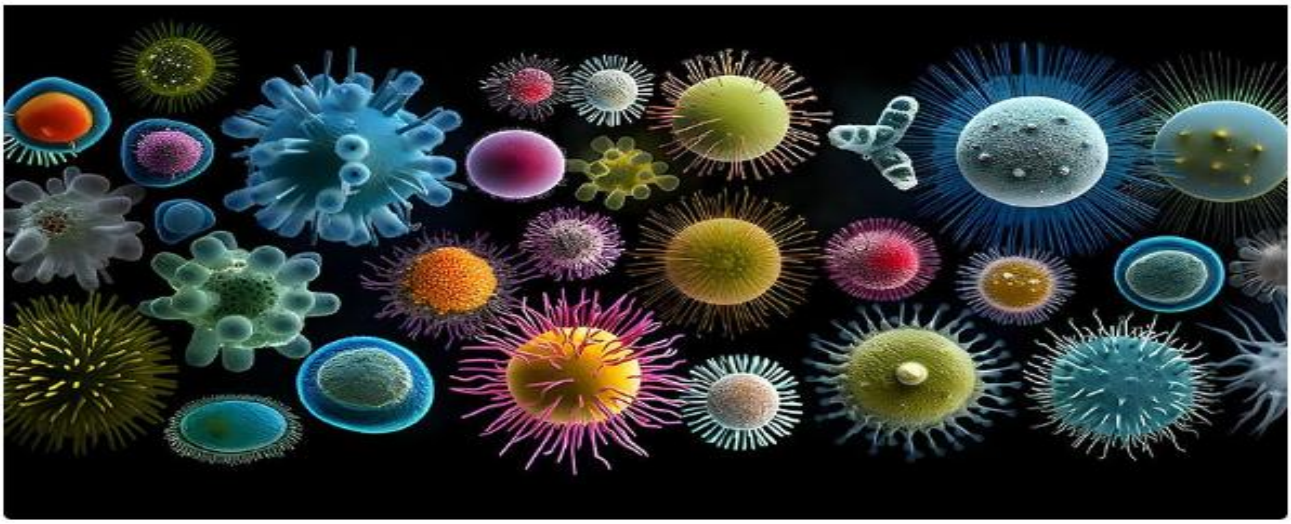


Fig 2. Various in fections.

(Image source: https://gemotest.ru/info/spravochnik/zabolevaniya/infektsionnye-zabolevaniya/)

By affecting antibodies, it virtually blocks their defense system. In this case, the body's defense function is impaired, meaning it cannot reestablish contact with those who need nutrition to protect organs and tissues. As a result, the body is unable to fight foreign microbes and abiotic factors.

When considering the action of cytokines, they cannot tell immune cells where to move and what to do. Because cytokines are chemical messengers, their effects disrupt their inflammation-regulating functions and other properties.

The complement system, in turn, reduces its ability to protect tissues from external factors. The organ loses its ability to protect tissues. As a result, healing after injury or infection is slowed. This negatively impacts the cells' ability to fight infection.

This also affects the filtering properties of the lymph nodes. As a result, in some cases, they are unable to filter waste products flowing away from tissues and cells (lymph). As a result, the lymph nodes' system for storing useful nutrients cannot perform its intended function. After all, lymph nodes have properties that allow them to perform a unique and vital function in the body.

In the spleen, the function of filtering the blood is disrupted due to its specific attack on the function of storing white blood cells. As a result, the spleen cannot renew old and damaged cells.

Microorganisms affect the tonsils and adenoids, disabling the system for capturing bacteria or viruses that have entered the respiratory tract, etc.

Thymus cells are a type of white blood cell. They act as conductors, or, in other words, direct the body's ability to fight external factors. Exposure to these factors can also disrupt this function. In this case, the body's ability to mature independently is compromised.

Bone marrow is important for blood cells. Various infections, insecticides affect the ability to create blood cells necessary for the body to survive and white blood cells that support the immune system.

When it affects the skin, it breaks through the skin's protective barrier. As a result, the skin's oil-producing function is disrupted and at the same time it cannot produce other protective cells of the immune system.

Conclusion: Thus, under the influence of various microbes and abiotic factors, the mucous membrane is unable to produce mucus, which traps foreign substances entering the body. This impedes the body's self-cleansing ability.

In conclusion, it can be said that to protect against the effects of various microorganisms and abiotic factors, it is necessary to pay attention to a healthy lifestyle. A healthy diet and lifestyle contribute to the strengthening of all the functions of the immune system discussed above. It is also necessary to pay close attention to the standards for the intended use of abiotic environmental factors.

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