GALAXY INTERNATIONAL INTERDISCIPLINARY RESEARCH JOURNAL (GIIRJ)
ISSN (E): 2347-6915
Vol. 10, Issue 2, Feb. (2022)

PREVENTION (IMPROVEMENT) AND CORRECTION OF THE NEGATIVE IMPACT OF ANTHROPOGENIC XENOBIOTS ON THE ANIMAL BODY

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SUMMARY

The use of modern pesticides greatly increases the yield of fields and the productivity of farm animals. However, their irrational use contributes to environmental pollution and the emergence of negative aftereffects in humans and animals, in particular the development of immunodeficiency pathologies. Prevention and correction of the latter is carried out on the basis of compliance with established MDU xenobiotics in feed and other objects of veterinary supervision, as well as the use of known T-type immunomodulators (dimephosphone, polyoxidonium, Gammavit, et. ell.)

Аннотация

Применение современных пестицидов в значительной степени повышает урожайность полей и продуктивность сельскохозяйственных животных. Однако, нерациональное использование их способствует загрязнению окружающей среды и возникновению негативных эффектов последействия у людей и животных и, в частности, развитию иммунодефицитных патологий. Профилактика и коррекция последних осуществляется на основании соблюдения установленных МДУ ксенобиотиков в кормах и других объектах ветеринарного надзора, а также использованием известных иммуномодуляторов Т-типа (димефосфон, полиоксидоний, Гаммавит и др.)

Аннотация

Замонавий пестицидларнинг қўлланилиши экинзорлар ҳосилдорлиги ва қишлоқ хўжалик ҳайвонлари маҳсулдорлигини сезиларли даражада оширади. Аммо улардан мақсадга номувофиқ равишда фойдаланиш, атроф-муҳитнинг ифлосланиши ҳамда одам ва ҳайвонларда салбий асоратлар юзага келтириши, хусусан иммунодефицит патологияларни ривожланишига имкон яратади. Юқоридагиларни олдини олиш ва коррекциялаш МДУ томонидан белгиланган озуқалардаги ва ветеринария назорати остидаги бошқа объектлардаги ксенобиотикларни, шунингдек Т-типидаги маълум иммуномодуляторларни (димефосфон, полиоксидоний, Гамавит ва бошқ.) сақланишига риоя қилишга асосланади.

ACTUALITY

In recent years, there has been a significant decline in the resistance of animals, especially young animals, to various bacterial and viral infections in farms and private livestock farms in Uzbekistan. At the same time, it is noted that in most cases, certain vaccines and serums have almost no effect, which causes serious economic damage to livestock [5].

Our many years of experimental and production research show that one of the main factors of this pathology is the unhealthy environmental situation in many regions of the country due to various anthropogenic impacts, including: use of pesticides, other toxic xenobiotics - rubber and latex raw materials, as well as industrial waste use [4].

The use of modern pesticides in botany and veterinary medicine allows to increase crop yields, reduce crop costs and reliably protect farm animals from various infections and invasions. However, their improper use (increase in processing standards and queues, non-compliance with "waiting times", violation of storage and transport regulations) leads to environmental pollution and poisoning of people, animals and other unpleasant complications. [1,2].

Among other toxic substances that adversely affect living organisms and cause adverse effects such as immunotoxic, gonado- and embryotoxic, industrial wastes containing fluorine compounds, as well as raw materials for rubber and latex production, in particular 2-mercaptobenzothiazole. At the same time, the latter has the property of moving into the environment in the production of car tires, rubber-latex products for medical and veterinary purposes. [3,6].

Therefore, appropriate scientific experiments were conducted to study the possible adverse effects in animals under the influence of various xenobiotics (pesticides, fluorine and sulfur compounds), and then measures were developed to prevent and correct them.

RESULTS AND DISCUSSIONS

It was found that some synthetic pyrethroids, organophosphorus pesticides, fluorine compounds and 2-mercaptobenzothiazole have a negative effect on the immunobiological reactivity of animals, manifested by a decrease in the functional status of immunocompetent cells, nonspecific protection and antitelogenesis, leading to a decrease in active immunity.

Thus, organophosphorus pesticides reduce the activity of both humoral as well as cellular factors of immunity. At the same time, pyrethroid - a component of neo-stomazan and rubber-latex production - 2-mercaptobenzothiazole to a greater extent disrupted T-cell activity. A similar situation was identified during the study of the effect of harmful emissions of aluminum production containing fluorine compounds on the immune level of large horned cattle.

Neocidol reduces resistance to various diseases not only in animals but also in humans.

VITI's known GOA-vaccine against colibacillosis and salmonellosis of young farm animals has completely lost its protective properties in case of acute poisoning with organophosphorus pesticides - etafos, tokution and actelic.

In our many years of experimental research, it has been found that the main way to increase the effectiveness of preventing the adverse effects of neo-stomozan, esfenvalerate, etaphos, tokution, aktellik, neotsidol, 2-mercaptobenzothiazoles on animals is to strictly control their content in various environmental objects. In this case, the maximum permissible level (MDU) of these xenobiotics should not exceed the following amounts: etafos, tokution, neotsidol - 2.0;

neo-stomozan, tsipermetrin, esfenvalerate - 0.2 mg / kg accordingly in the diet. The safe dose of 2-mercaptobenzothiazole in water and feed is 0.2 mg / kg animal mass.

However, in order to seriously prevent the negative impact of the above xenobiotics on the immunobiological reactivity of the animal organism, it is not advisable to have them in food, water and other objects of the environment.

Treatment of some adverse complications of anthropogenic xenobiotics, including correction of immunological deficiency of animals under the influence of neo-stomozan, polychron, etaphos, tokution and 2-mercaptobenzothiazoles, identified in the T-system of immunity: levamisole, pentoxyl, dimefosfon, polyoxide. by the use of immunomodulatory agents.

Thus, we found that the effective treatment of tocution, aktellik, and 2-mercaptobenzothiazole effects resulted in dimefosfon (250.0 mg / kg) in combination with polyvinylpyrrolidone (5.0 mg / kg), parenterally (intramuscularly or subcutaneously), 3 times in 10 days. administration, or polyoxidonium - a single dose of 5.0 mg / kg.

Dimefosfon (250.0 mg / kg) in combination with polyvinylpyrrolidone (5.0 mg / kg) 3 times for 10 days at intervals (monthly) showed good therapeutic effect in the correction of immunodeficiency cases in animals from chronic exposure to 2-mercaptobenzothiazole.

All of the above immunomodulatory agents not only maintain the immunoreactivity of animals at a high physiological level, but also increase the fertility of females, increase the viability of young cattle and their resistance to various infections.

CONCLUSIONS

Thus, the widespread use of modern pesticides significantly increases the productivity of arable land and the productivity of farm animals. However, their inefficient use, environmental pollution and the development of adverse complications in humans and animals, in particular immunodeficiency pathologies, allow. Prevention and correction of the above is carried out through the use of xenobiotics in feeds and other objects under veterinary control, prescribed by MSU, as well as certain immunomodulators of the T-type (dimefosfon, polyoxidonium, Gamavit, etc.).

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