

INCREASE OF EFFECTIVENESS OF PROTECTION OF GRAIN AND FORAGES FROM DEFEAT BY MICROTOXINS

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Grain crops are one of the basic products of production of an agriculture. For preservation of their quality and reduction in losses it is necessary to supervise such parameters as a moisture and temperature. During storage at occurrence of a superfluous moisture there is a probability of affection by its mould that leads to such consequences as:

1. Decrease in food value as affected fungi use fodder raw nutrients for the growth.
2. Deterioration of gustatory qualities as fodder raw has a smell of a mould and unpleasant taste.
3. Change of physical properties of a fodder grain.
4. Presence mycotoxines which leads to a growth inhibition of animals and reduction in their efficiency.

At development of mouldy mushrooms decrease nutritional value of a forage, the content of vitamins, amino acids and exchange energy, and formed thus mycotoxines negatively influence on productive qualities of agricultural animals and birds.

Symptoms of presence of mycotoxines in forages:

Bird:

- The lowered appetite, weak growth, bad conversion of a forage;
- An atrophy of ovaries; low hatchability and eggs have the wrong form;
- Haemorrhage of liver;
- Decrease in a titre of antibodies;
- The low content of antibodies, lymphocytes and phagocytes;
- Defeat of an oral cavity.

Pigs:

- Refusal of food; the general infringements in reproductive system, abortions;
- A diarrhea, sharp intestinal frustration, vomiting;
- Changes of a chemical compound of blood.

Horned cattle:

- Reduction of consumption of food, a low daily average gain;
- Increase in quantity of dead fetus and abortions;
- A delay of a placenta and metritis;
- immunosuppressy;
- Displacement of an abomasum, ketose;
- The rests of toxins in milk.

Mykotoxines do not destroyed at a heat treatment of grain products, and getting with forages in an organism of animals, collects in meat, eggs and milk. Therefore their presence in forages represents greater danger not only to animals, but also to health of the human as some of them are carcinogens and their hit in food should be excluded. Growth of mouldy mushrooms depends on three interdependent factors: humidity of grain, access of oxygen, temperature of grain.

For reduction of moisture content in grain manufacturers are compelled to dry it up to such values which are necessary for safe storage. All preparation is connected with greater expenses of energy, combustible materials and a manpower. But, at correct processing grain pawned on storage by the preparations interfering development of a mould, necessity for these measures disappears.

For reception of desirable result with a moist grain, use preparations on the basis of organic acids, such as « Filax, Luprosyle, Mould- zap., Myco carb, etc. ». The basic function of preparations is prevention of occurrence of mould funguses in grain, mixed fodder, bran ... the Basic active components of all preparations is propionic acid, acetic acid, sorbic acid. Propionic acid is an effective inhibitor of a mould, and at high concentration (from 0,4 %) can be applied in forages as an antibacterial component. The acetic acid - is absolutely safe for use in forages. It is effective basically against yeast and bacteria. Sorbic acid also is nontoxic for animals, it participates in a metabolism, as well as other fat acids. Besides sorbic acid possesses a wide spectrum of influence on yeast and a mould, but is less active against bacteria.

Use antimouldy preparations has such advantage:

- Reduction of expenses by drying;
- Reduction of expenses by ventilation and hashing of raw material;
- Reduction of loss of weight of raw material
- Provides long and reliable protection;
- Allows to store grain with the increased humidity till 1 year without deterioration of its quality!;
- Will neutralize mycotoxines which are developed mainly *Aspergillus Sp.* and *Fusarium Sp.*;
- Prevents redistribution of water in a forage which occurs at fluctuations of temperature during storage;
- Prevents caking and lumping of forages and raw material in places of storage;
- It is safe for use by the personnel.