STATE POULTRY RESEARCH STATION
National Academy of Agrarian Sciences of Ukraine

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Deputy director for research

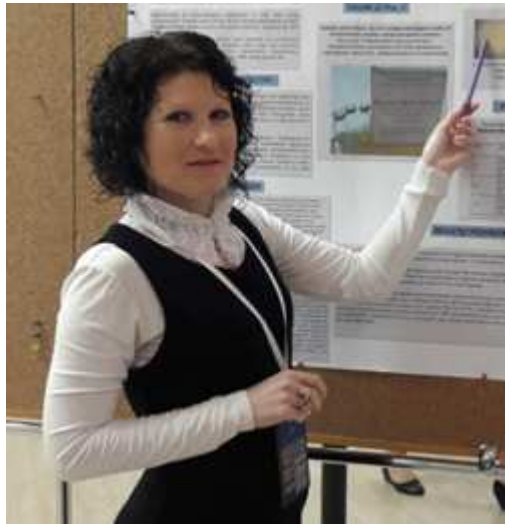
Shomina Nataliia,

Candidate of Science in
Agriculture, Senior researcher

- A specialist in the field of poultry with 20 years of professional experience at State Research Poultry Station of National Academy of Agrarian Science.
- Project manager for the establishment of Consulting Poultry Center under the AGRO program by USAID (2021-2022).
- A Team Leader of scientific researches in the field of egg incubation (egg incubation technology improvement, development of incubation modes, parameters of egg storage and disinfection before and during incubation process, influence of poultry feed contaminants on hen`s productivity and egg hatchability).
- An advanced education in biology and livestock production technology, broad experience in experimental work at zoo chemical and microbiological laboratory.
- More than 100 scientific papers in national and foreign journals on the field of poultry including 7 guidelines.

Our Scientific Team – 5 Doctors and 8 Candidates of Sciences





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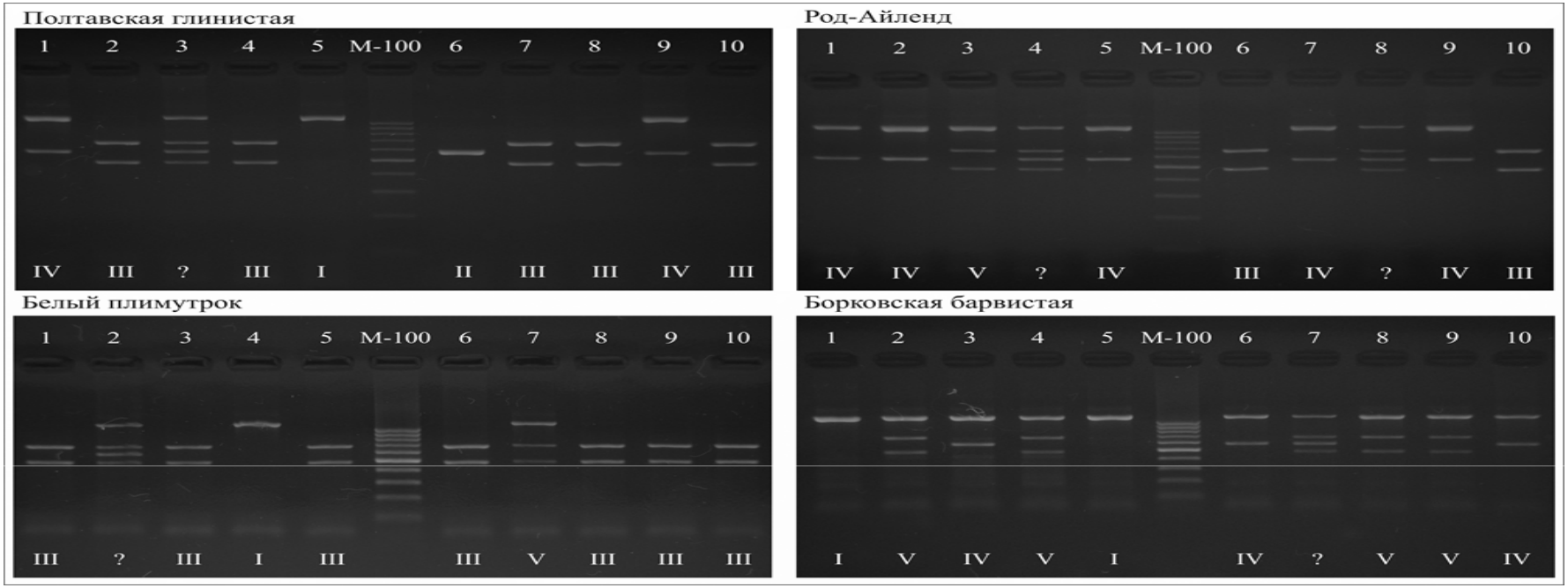
Breeding and genetics
Preservation and rational use of poultry gene pool



Assessment of the productive potential of poultry with the use of molecular genetic markers, which allows to conduct genotyping of chickens of different directions of productivity on a set of molecular genetic markers (PCR-RFLP, Indel).

Energy and resource saving technologies of farm management

✓ An improved method of composting litter as well as litter with dead poultry.

0 day

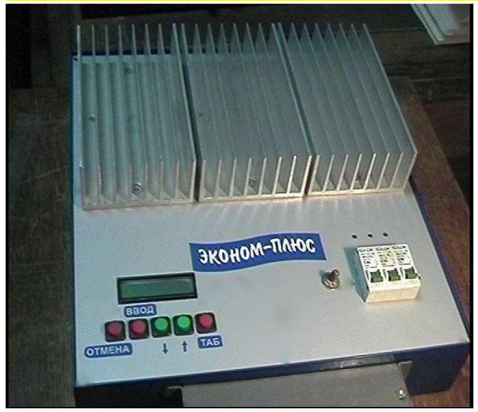
21 day

Reducing the duration of the composting process compared to the base version by 27-33%, ammonia emissions from the surface of compost piles by an average of 22-24%.

21 day

84 day

✓ Energy-saving systems and lighting regimes for poultry houses which provide a reduction in the specific cost of electricity for lighting by 1.3… 5.8 times, increase the livability of birds by 1.5… 7%, egg productivity by 1.2… 4.8%. Implemented in 27 poultry farms in Ukraine.









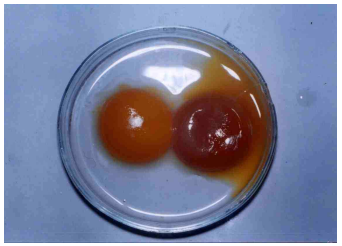
✓ Technology and equipment for intensive rearing of meat and forced fattening of waterfowl for large fatty liver Provide increase in labor productivity in 2 times, efficiency of use of production areas in 1,8 times




Reproduction and egg incubation

✓ the effectiveness of the use of environmentally friendly biologically active substances of natural origin for disinfection of poultry eggs.

✓ Studing of pathological changes that can be observed in eggs and dead embryos when contaminating feed with mycotoxins



✓ The technology of incubation of chicken eggs based on the parameters of temperature on the surface of the egg shell as a physiological criterion for the regulation of embryonic development of birds.

Quality and safety of poultry feeding

✓ Development of methods for regulating metabolic processes in birds to increase the efficiency of non-traditional feeds and eliminate the influence of anti-nutritional factors. Types of non traditional feed that were investigated sorghum, millet, rapeseed, triticale.

✓ Influence of GM corn on the internal organs of chickens

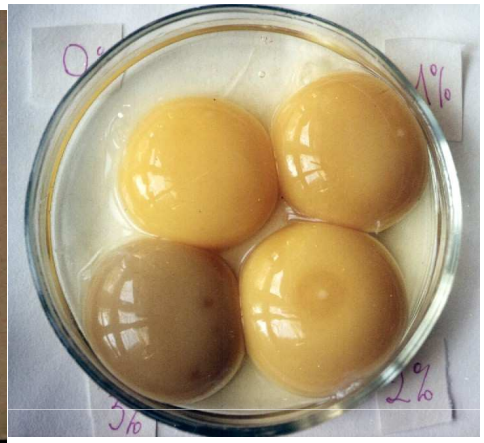
✓ Evaluation of the effectiveness of the use of new components in poultry feeding, the study of metabolic processes, the state of the antioxidant system and poultry productivity.

Phytobiotics (oregano, garlic, etc.) - containing flavonoids, vitamins, polyphenols, which have antimicrobial, antifungal, anticoccidial and antioxidant activity.

Xenobiotics (oxidized fat and mustard oils) on the state of the antioxidant system and the productivity of chickens, the development of feed additives to reduce their negative effects. Enzymes - ("Bacell", etc.) - microbially enzymatic-probiotic preparations containing a complex of cellulolytic, amylolytic enzymes.

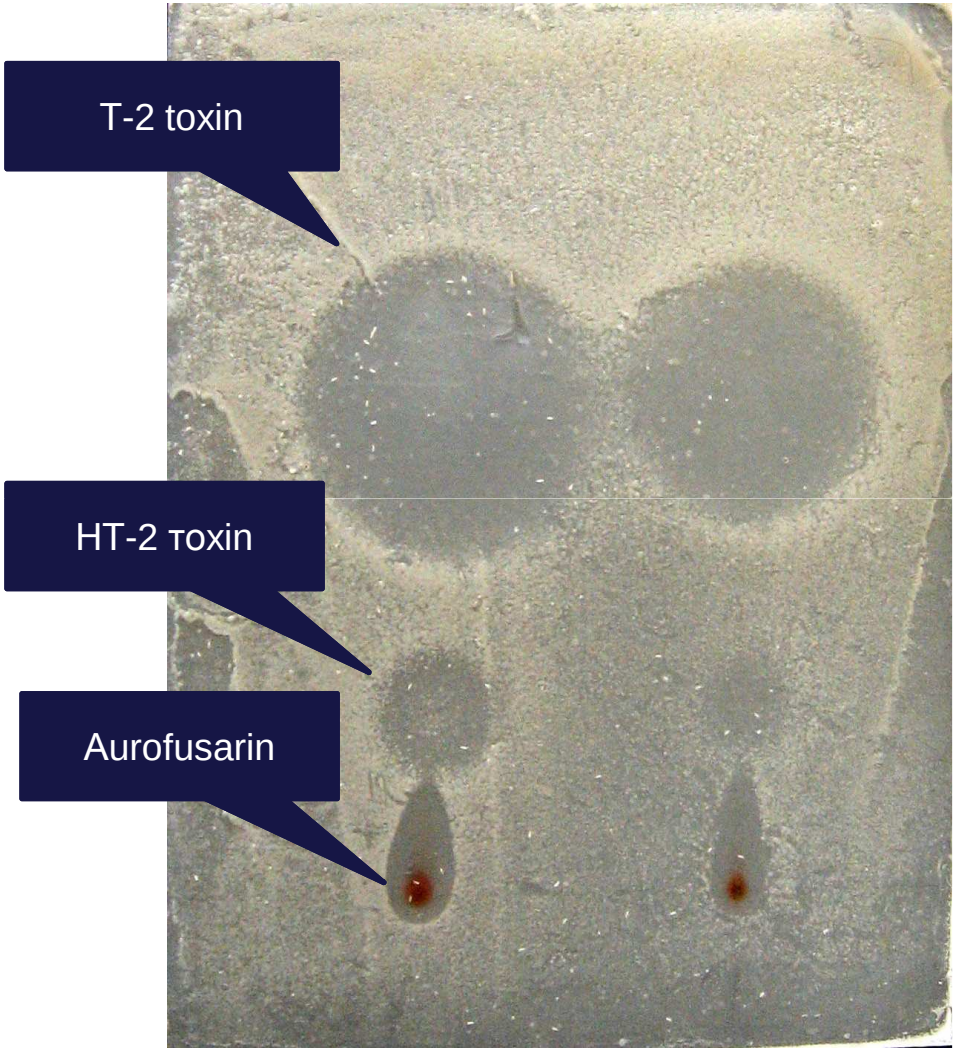
Probiotics, prebiotics - ("Bavilact", Monosporin, Bacell, etc.) live bacteria, nutrients contained in certain products or dietary supplements, selectively stimulating the growth and (or) biological activity of representatives of the protective intestinal microflora Vitamin and mineral premixes

✓ Researches on the study of the etiology of avian mycotoxicoses: necrotic stomatitis in geese and turkeys, caused by trichothecene fusariotoxins type A; syndrome of deterioration in the quality of eggs in chickens caused by aurofusarin; syndrome of hypergonadism in roosters caused by zearalenone.



✓Bioautographic method for determination of trichothecene mycotoxins and aurofusarin

- Sensitive test-strain Candida pseudotropicalis 44 pc:
- Sensitivity to HT-2 toxin - 100 ng
- Sensitivity to T-2 toxin - 5 ng
- Sensitivity to aurofusarin - 10 ng



Mycotoxins for experiments (Q.S.):

T-2 toxin
HT-2 toxin
T-2 triol
T-2 tetraol
Zearalenone
Aurofusarin

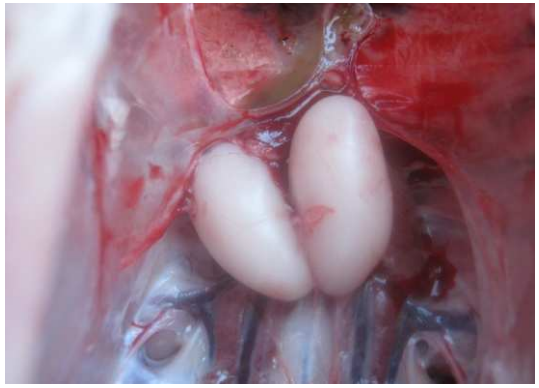
Mycotoxin producers:

Fusarium sporotrichioides Strain 2m-1 productivity: 6-8 g T-2 toxin / kg grain

Fusarium sporotrichioides Strain 2m-2 productivity: 20-25 g of zearalenone / kg of grain

✓ Studies on the influence of feed factors on the reproductive functions of roosters.

It was established that leghorn roosters in the prefunctional period can be divided by testicular mass into two types, which are characterized by hyper- or hypogonadism



It should be clarified whether it is manifested in turkeys, geese, ducks in the pre-functional period testicular hyper- and hypogonadism

Selection of breeding roosters by testicular size has the effect of increasing the level of fertilization of eggs

Diagnosis and prevention of poultry diseases

✓ Live virus vaccine against viral hepatitis of ducklings.

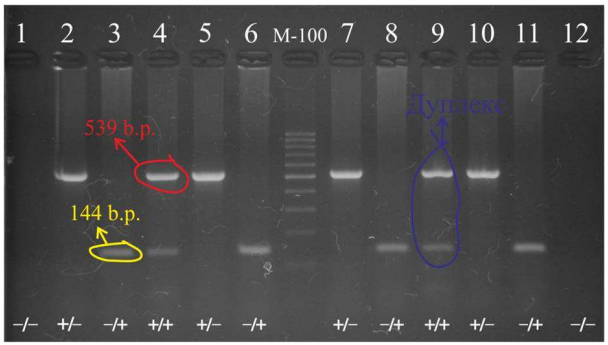
✓ Virus vaccine dry culture against viral enteritis of geese

✓ Inactivated vaccine against goose viral enteritis

✓ Emulsin vaccine associated inactivated against Newcastle disease, infectious bronchitis, egg drop syndrome

✓ Test system for the detection of antibodies to viral enteritis in blood sera of geese by ELISA – test

✓ Differential diagnosis of geese viral enteritis using duplex polymerase chain reaction for simultaneous detection of parvo- and polyomavirus genomes (GPV + GHPV) in “one tube”



Proposition for cooperation in veterinary

For many years, at the institution has been conducted researches to monitor various diseases of waterfowl as well as studying of new diseases and changes in their manifestations. A collection of field isolates of various waterfowl viruses has been created. Developed several vaccines against various diseases.

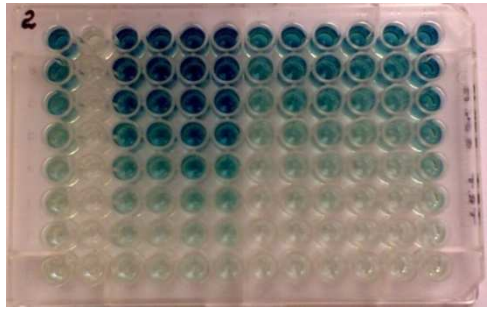
In recent years, in European countries, including Ukraine, there have been cases of mass death of young waterfowl, which are caused by pathogenic strains of reovirus, poliovirus, circovirus, etc . This year, riemerelosis has become widespread. This makes it necessary to control the spread of waterfowl infections, study the genetic relatedness of strains, genetic characteristics of variant strains of viruses, the development of methods of diagnosis and prevention.

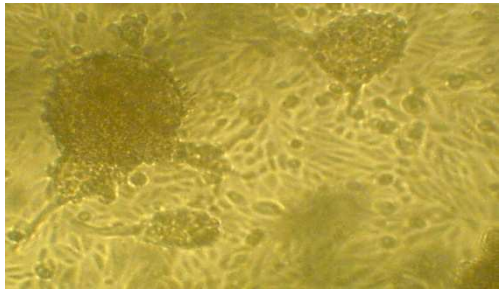
The study of the genetic structure of viruses will make it possible to establish the diversity of circulating viruses, to select antigen-related vaccine strains of viruses for the manufacture of specific prophylaxis. Determining significant parts of viruses in their genetic structure, including in antigenic terms, will allow research to create recombinant vaccines against these diseases.

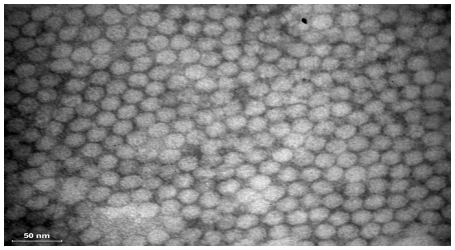
Proposition for cooperation in veterinary

INVESTIGATE THE EFFECTS ON METABOLISM AND KEY IMMUNE FACTORS IN POULTRY WHEN USING VACCINES

The aim of the research is to study individual stages of cellular, humoral immunity, endocrine factors and metabolic changes in poultry in complex vaccine prophylaxis during the reproductive period and the effects on these processes of immunomodulatory drugs in normal and stress.







Plan to study the formation of immunity and other factors

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At using complex vaccines

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Study of the relationship between endocrine regulation of immunity and the establishment of the appropriate level of humoral immune factors in birds

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at using complex vaccines in combination with immunomodulatory drugs

at using complex vaccines under the influence of stress factors

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Study of the level of formation of cellular, humoral immunity, the action of endocrine factors, changes in metabolic processes in birds

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Determining the relationship between endocrine factors, humoral, cellular immunity and metabolic processes in birds

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