AVIEM

INFECTION THERAPY

RELEASE 1
2020

IN THE RELEASE:

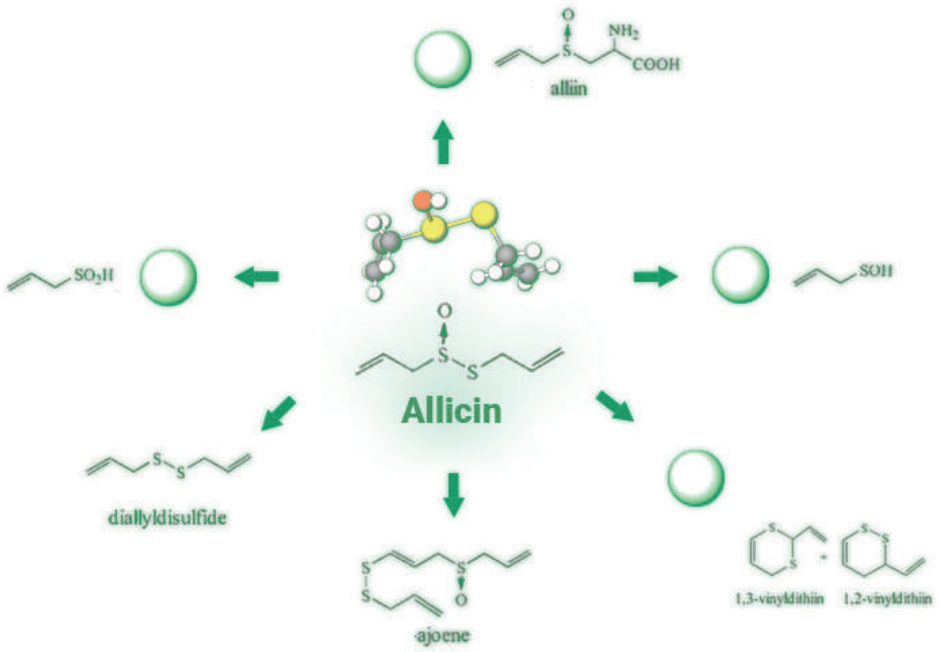
This is a very special AVIEM release for us. We are pleased to present probably the world's first Non-Antibiotic Solution of such efficacy, which is 100% herbal based. We are particularly proud as it is the culmination of 15 years of work on non-antibiotic products. We thank everyone who took a part in the development of this AVIEM release, especially the BioPoint Team for their joint dedication and veterinarians from AVIPOINT for invaluable knowledge from the field. I believe, that it will be valuable reading for everyone.

BioPoint CEO, Michał Jankowski

Garlic

Garlic is an extremely rich source of strong antibiotic substances, that show a wide range of effectiveness. Selected substances contained in garlic are effective against bacteria, viruses, fungi and parasites, which in the case of prevention and treatment of poultry diseases is extremely important, and allows the use these substances without the need for detailed laboratory diagnostics as in the case of antibiotics.

We are particularly focused on allicin, a compound which is formed when the garlic tissue structure is damaged. This is one of the strongest antibiotic natural substances used for protection against infections of various etiology. However, allicin is a very unstable substance and after a few hours it falls apart into a series of sulfur derivatives that quickly lose their antibiotic properties. The more time that passes from the moment the garlic structure is damages i.e. beginning of the allicin breakdown cascade, the subsequent substances are less active from this breakup. They will also be less effective in practical use in poultry during the period of infection. Our task was to ensure the product is effective in farm conditions, as it retains maximum amount active substances. BIOTIX S is such a product. We are confident, that this is one of the most advanced garlic products in the world, as it contains concentrated active substances from the first stage of garlic's response to infections, i.e. when they are at their maximum.



Standardization

During production of BIOTIX S, we implemented a standardization process that guarantees the quality and repeatability of the composition, i.e. the content of effective active substances. It is extremely important that the product, that can be used during the infection period, remains consistent. Only then it can be used safely and effectively and gain the trust of veterinarians and poultry producers. In addition, thanks to many years of experience, we were able to refine the durability of BIOTIX S. Without having to store it in refrigerated conditions (as was the case in the first BIOTIX version), it shows very high effectiveness.

BIOTIX S

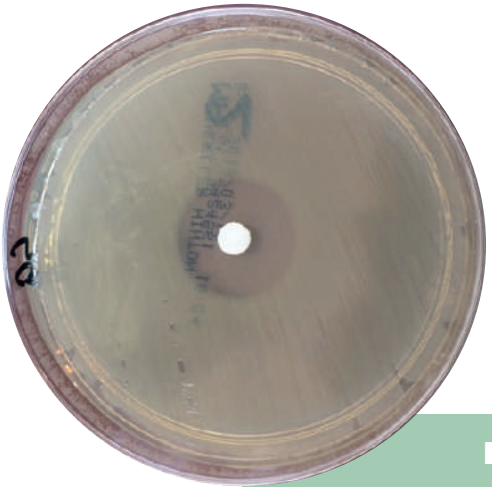
Phytoncides have great potential in fighting bacterial infections. They can be successfully used in non-antibiotic poultry farming and in situations where it is impossible to give an antibiotic, such as in the period before slaughter or in the case of high antibiotic-resistance of the pathogens occurring on the farm.

A very important aspect of non-antibiotic therapy is the fact that pathogens have difficulty developing resistance to active substances found in plants. This is due to the pathogens having less contact with phytobiotics and the fact that plants contain a large amount of active substances, having different mechanisms of action, making it difficult for the pathogens to create resistance. Laboratory tests that we conducted on the sensitivity of selected pathogens (G +, G- and fungi) to BIOTIX S confirm its in vitro efficacy, which proves great potential for field applications of the product.

METHODOLOGY

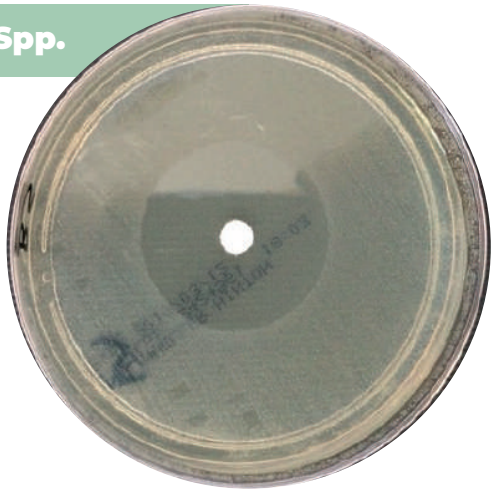
Antimicrobial activity of selected plant substances was determined using the disk diffusion method. A bacterial suspension was applied to the Mueller-Hinton microbiological medium with a density of 0,5 McFarland, and then a sterile disk impregnated with 20 µL Biotix S was applied to the seeded microbiological medium. Incubation lasted 18 hours at 35 ± 2˚C.

After incubation, the zones of inhibition of bacterial growth were measured. **According to our experience, high probability of BIOTIX S effectiveness in the field is obtained if the zone of inhibition of bacterial growth is greater than 15 mm.** As we are still conducting research and collecting data from the field, the information will be updated.



E. Coli

Enterococcus Spp.



INHIBITION ZONES OF SELECTED PATHOGENS - FROM OWN RESEARCH (mm):

PATHOGEN	BIOTIX S				
CANDIDA ALBICANS	57	54	53	52	54
STAPHYLOCOCCUS AUREUS	40	32	26	25	19
ESCHERICHIA COLI	24	15	23	12	25
ENTEROCOCCUS SPP.	31	14	16	22	17

INHIBITION ZONES FOR ISOLATED PATHOGENS FROM BROILER CHICKEN - SAMPLE COLLECTED IN THE FIELD (mm):

BIRDS	SWAB FROM	PATHOGEN	BIOTIX S	PATHOGEN	BIOTIX S	PATHOGEN	BIOTIX S
Chick 35th day of life	Body cavity	E. COLI	27	STAPHY-LOCOCCUS AUREUS	32		
3-day-old chicks	Yolk sac	E. COLI	16	ENTEROCOC-CUS SPP.	8		
Chick 38th day of life	Body cavity	E. COLI	17				
Chick 28th day of life	Peritoneum, lungs, heart, liver, body cavity	E. COLI	17	ENTEROCOC-CUS SPP.	18	STAPHY-LOCOCCUS AUREUS	20

For years, our goal has been to limit the use of antibiotics in poultry production, which is possible thanks to effective and proven herbal active substances. The use of natural substances is no longer an alternative method, but a conventional and proven method of treatment. In AVIEM, we want to share our knowledge and experience in reducing antibiotics for both treatment and prevention. In this release of AVIEM we will demonstrate the topic of the use of phytoncides contained in BIOTIX S in the treatment of infections occurring in poultry.

BIOTIX S PROPERTIES

One of the plants richest in phytoncides is garlic, containing unique and exceptional phytochemicals, the purpose of which is to protect against viruses, bacteria or fungi. Our biggest challenge was to develop the extraction process so that the final extract showed maximum effect, consistent with its natural purpose.

The process of extraction, thickening and isolation of phytoncides is complicated due to the amount of natural substances that arise or fall apart during the extraction process itself. This is because garlic contains extremely reactive forms of phytoncides (active substances), thanks to which it successfully defends itself against pests. Damage to the structure of the plant begins a cascade of natural chemical reactions in which compounds such as diallyl disulphide, ajoene or allicin are produced.

During the extraction process, damage occurs to the garlic, beginning the production of many active substances. The formation of these substances is influenced by time, pH, temperature and auxiliary substances (which are key in Biotix S case). Changing the extraction process by a seemingly unimportant fraction, for example, a slight extension of the extraction time by 5 minutes, or modification of process temperature, can result in a lower quality product (less effective or less stable).

It is therefore essential to design the right conditions of the process and also "catch" the moment when the most valuable substances appear and stop the extraction process exactly at this stage.

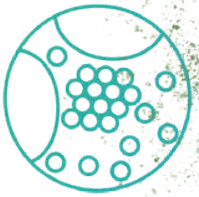
Strengthen your flock during the period of infection:

Viral

Bacterial

Fungal

Protozoal



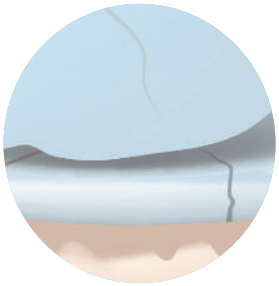
Parasitical

JOINT INFECTIONS

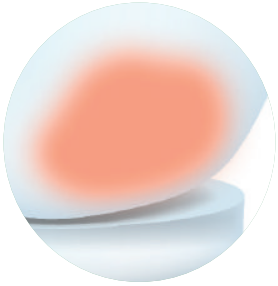
Joint infections caused by pathogens (most often bacteria) that are found within the synovium of the joint occur secondarily to ongoing infections in the body (they get into the joint with blood), it is also possible for the infection to move from surrounding tissues or as a local infection associated with mechanical damage to tissues. Birds experience severe pain, are reluctant to move, and consequently feed intake and daily weight gain decrease.

PATHOGENESIS

Local damage to the articular surface

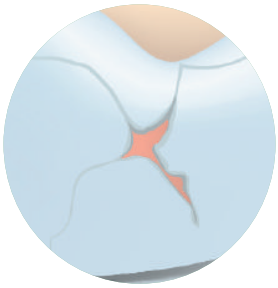


Inflammation (swelling, soreness)



Inflammatory fluid formation

Local bone resorption (damages)



SOLUTION

Joint infections

- during lameness and reluctance to move related to pain
- when swelling and redness around the joint are noticed
- in the presence of a pathological fluid within the joint cavity in the post-mortem image

Biotix S

500 *ml*	1000 l *drinking water* 1/2 daily water drunk	3-5 days

Salivet Plus

500 *ml*	1000 l *drinking water* 1/2 daily water drunk	3-5 days

Expected effect:

Reducing the occurrence of lameness and edema, reducing mortality, as well as improving welfare, which results in improved appetite and reduced risk of insufficient weight gain.

ACTION OF ACTIVE SUBSTANCES

Biotix S

- blocks enzymes important for bacterial life, e.g. alcohol dehydrogenase
- inhibits bacterial DNA and RNA synthesis
- easily penetrates the outer cell membranes of bacteria disrupting their functioning
- destroys the internal structures of bacteria
- broad spectrum of activity against G+ and G- bacteria

Salivet Plus

- inhibits prostaglandin synthesis resulting in antipyretic, analgesic and antiaggregatory effects
- may block the effects of prostaglandin E2 (PGE2) by inhibiting phospholipase A2 activity
- inhibits cyclooxygenase activity, preventing the conversion of arachidonic acid into prostaglandins
- as an antioxidant reducing local tissue damage

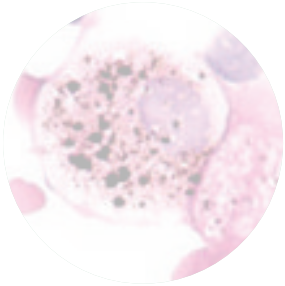
RESPIRATORY TRACT INFECTIONS

Respiratory infections are common in all species of poultry. Very often these are infections of a complex etiology associated with the occurrence of a viral infection and a bacterial infection secondary to it. Its most common symptoms are coughing, sinusitis and nasal discharge as well as appetite suppression associated with discomfort felt by birds.

PATHOGENESIS

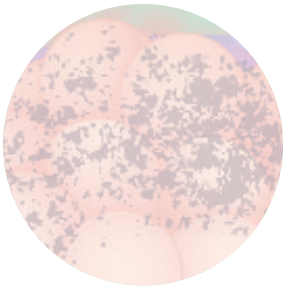
Bacteria and viruses cause:

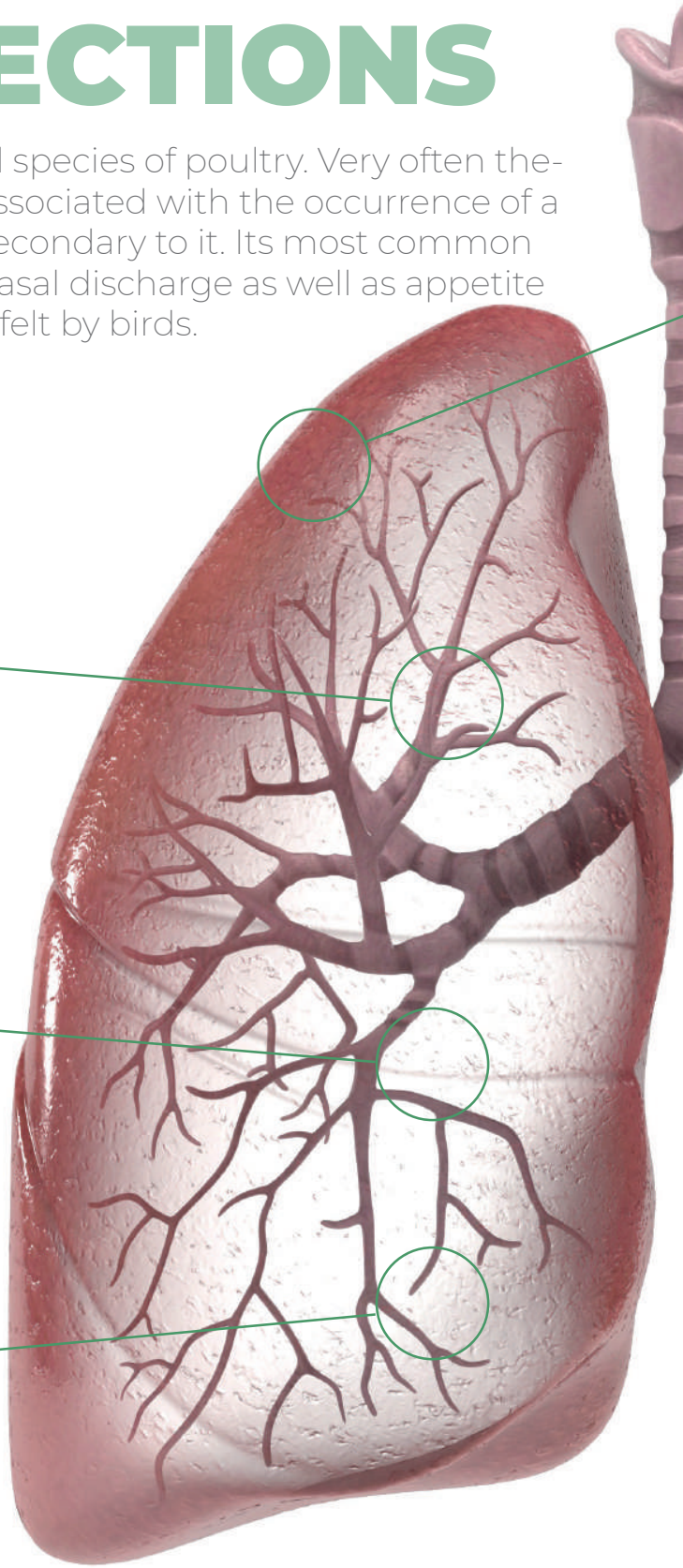
Respiratory epithelial cell damage

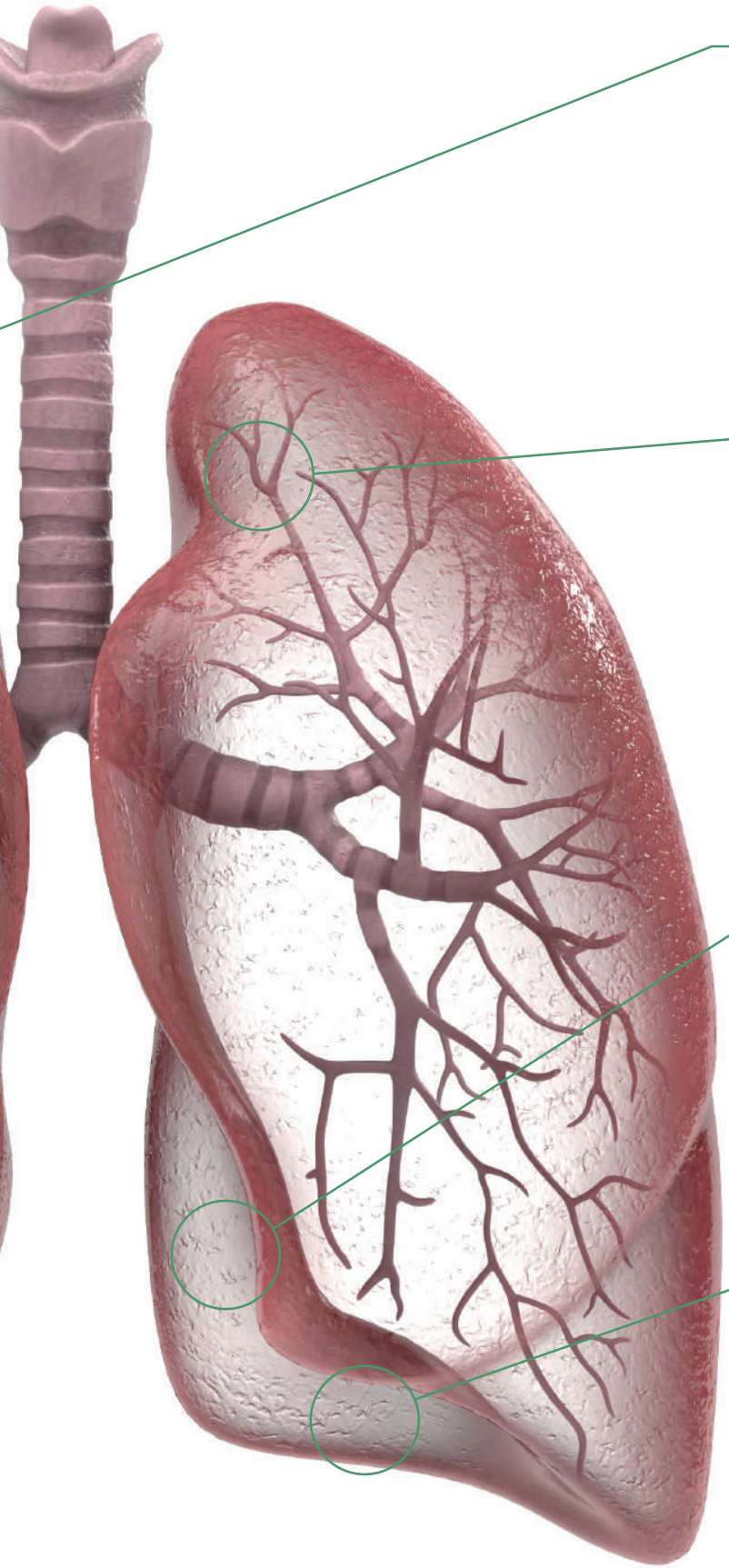


Degradation and impairment of cilia function

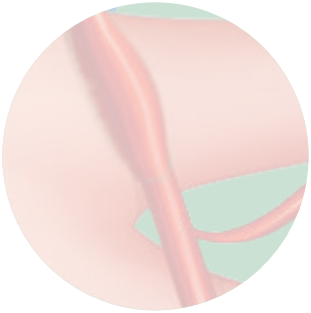
Necrotic changes of the cell





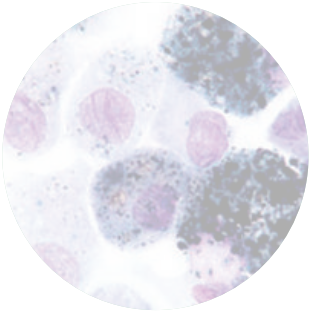


Increasing the permeability of blood vessels



Changes in mucus density - weakening of natural defense mechanisms

Immunosuppression of lymphatic tissue of the respiratory system



Accumulation of fluid and fibrin

SOLUTION 1

Respiratory tract infections

- recommended solution for broiler chicken flocks
- when noticed: coughing, sinusitis and nasal discharge
- bacterial respiratory infections
- when the above symptoms are accompanied by a slight increase in daily bird mortality

Biotix S

500-1000 *ml*	1000 l *drinking water* 1/2 daily water drunk	5 days

+

Mintamix

200 *ml in spray*	10 l *warm water*	3-5 days

EACH TIME AFTER BOTIX S APPLICATION WE RECOMMEND:

Enterocid Grower

250 *gram*	1000 l *drinking water* 1/2 daily water drunk	3 days

Expected effect:

Reduced snorting, reduced mortality, improved welfare, normalized feed intake, relief of symptoms by the third day of therapy. The combination of ingredients contained in BIOTIX S and MINTAMIX supports the body in the fight against respiratory infection. In addition to direct action on pathogens (BIOTIX S), reduces the risk of complications associated with the damaging effects of pathogens, because of its support in regeneration of the respiratory epithelium and cleansing the airways (MINTAMIX).

SOLUTION 2

Respiratory tract infections

- recommended solution for turkey flocks (bacterial and viral infections of the respiratory system)
- viral infections with secondary bacterial infections
- when coughing, sinusitis and nasal discharge are noticed
- when the above symptoms are accompanied by a slight increase in daily bird mortality
- respiratory symptoms that occur chronically, without increased mortality

Biotix S

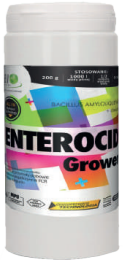
500-1000 *ml*	1000 l *drinking water* 1/2 daily water drunk	5 days

+

Respibiox

750 *ml*	1000 l *drinking water* 1/2 daily water drunk	5 days

EACH TIME AFTER BOTIX S APPLICATION WE RECOMMEND:



Enterocid Grower

250 *gram*	1000 l *drinking water* 1/2 daily water drunk	3 days

Expected effect:

Reduced snorting, reduced mortality, improved welfare, normalized feed intake, relief of symptoms by the third day of therapy. The combination of ingredients contained in BIOTIX S and RESPIBIOX supports the body in many respects in the fight against respiratory infection. In addition to direct action on pathogens, BIOTIX S stimulates the body's natural immunity, enabling an effective and quick response to the presence of pathogens. There is also a reduction of the risk of complications associated with inflammatory effect on cells covered by the infected area, which accelerates the regeneration processes during and after the infection (RESPIBIOX).

MODE OF ACTION OF ACTIVE SUBSTANCES
Biotix S

ANTIVIRAL

- damages the outer virus shields
- inhibits viral enzymes
- interferes with the processes of virus attachment (adhesion) to animal cells

ANTIBACTERIAL

- blocks enzymes important for bacterial life, e.g. alcohol dehydrogenase
- inhibits bacterial DNA and RNA synthesis
- easily penetrates the outer cell membranes of bacteria, disrupting their functioning
- destroys the internal structures of bacteria
- broad spectrum of activity against G+ and G- bacteria

Mintamix

VITAMIN A

- determines the proper functioning of epithelial cells
- supports regeneration of the respiratory epithelium

CINEOL

- facilitates breathing by increasing secretory function of respiratory tract
- supports the cleansing of respiratory tract
- has a diastolic effect on the bronchi
- supports liquefaction of mucus in the respiratory tract

Respibiox

CHICORIC ACID, CAFFEIC ACID

- destroy oxygen free radicals, which are created in large quantities in places affected by inflammation and cause local tissue damage
- relax smooth muscles of the respiratory system, increase breathing efficiency through stimulation of B-adrenergic receptors, inhibition of histamine H1 receptors, or through the anticholinergic effect
- inhibit cyclooxygenase (COX1 and COX2) and lipoxygenase (LI-O) activity and inhibit NK cell activity by silencing inflammation
- deactivate hyaluronidase (bacterial enzyme), preventing bacteria from migrating
- stimulate the secretion of interferon that inhibits the development of viruses

ECHINACOSIDE

- affects phagocytic activity, activation of macrophages, neutrophils and leukocytes, increases the number of NK cells

POLYSACCHARIDES

- stimulate the production of interleukins (IL1, IL6) by stimulating macrophages to phagocytosis

THYMOL AND CARVACROL

- have antioxidant properties, protect against free oxygen radicals
- inhibit the secretion of nitric oxide compounds (by inhibiting the expression of nitric oxide synthase genes)
- exhibit non-specific antibacterial and antifungal properties, by destroying the membranes of external pathogens (incorporation into polysaccharide capsules, ion channels, membrane receptors)

CLINICAL CASES

CLINICAL CASE 1

Birds.

Turkey BIG 6, 9 objects on the farm

Symptoms.

At 7th week of birds' life, persisting for 2 days, very strong swelling of the sinuses (Fig. 1), coughing, depressed birds, snorting can be heard clearly, the birds shake their heads. Increase in daily mortality from 1-2 to 9 birds

Diagnosis.

TRACHEITIS, SINUSITIS

Recommendations.

In 4 objects for 5 days:

BIOTIX S 1000 mL / 1000 L in ½ of water, in the second ½ of water sodium salicylate.

Effects of therapy.

Table. Reduction of the daily number of falls

Daily number of falls	
Before BIOTIX S therapy	9
After BIOTIX S therapy	3

Resolution of clinical symptoms was noted in all poultry houses. No sinusitis was observed, snorting occurred only in individual birds.
After the end of therapy until the end of the production cycle, no recurrence of infection was observed.

Fig. 1

CLINICAL CASE 2

Birds.

Turkey BIG 6, males, 2 objects of 10 000 birds each, pellet

Symptoms.

At 8 weeks of age depressed flock, pronounced coughing and snorting, antibiotic therapy (doxycycline and colistin) was used, but the therapy did not bring the desired effect, even worsening of previous clinical symptoms was observed. There was an increase in daily mortality to 35.

Fig. 1

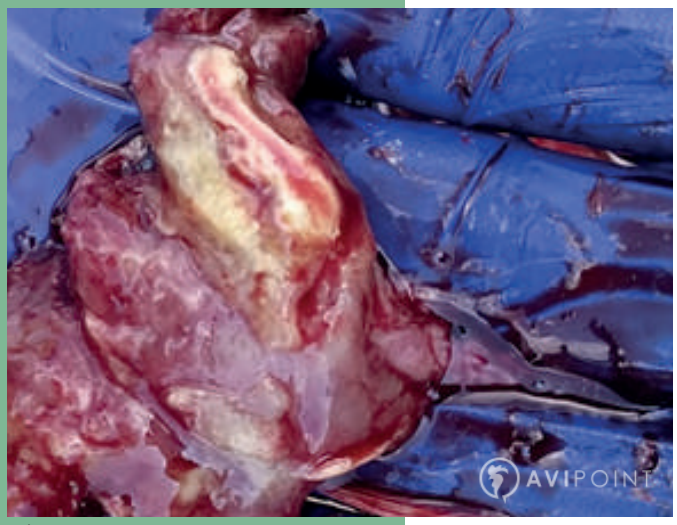


Fig. 2

Post-mortem examination.

Post-mortem examination revealed the presence of fibrin between the intestinal loops (Fig. 1), peritonitis and pericarditis. Lungs and trachea hyperemic, ecchymotic. White, focal lung lesions (Fig. 2).

Diagnosis.

ORNITOBACTERIOSIS, COLIBACILLOSIS

Recommendations.

For 5 days:

BIOTIX S 1000 mL / 1000 L of water in ½ daily water drunk

Effects of therapy.

Table. Reduction of the daily number of falls

Daily number of falls	
Before BIOTIX S therapy	35
1st day of BIOTIX S therapy	27
2nd day of BIOTIX S therapy	12
3-5th day of BIOTIX S therapy	8
After Biotix S therapy	8

Relief of symptoms was observed on day 3 of therapy, no cases of infection recurrence.

CLINICAL CASE 3

Birds.

A flock of 15 000 birds, BIG 6 Turkey

Symptoms.

Onset of disease in the middle of the 4th week, peak falls of 600 birds per day, reduction of daily weight gain. Isolation of pathogens was performed and found: TRT, Ornitobacterium rhinotraheale and Bordetella spp. & Mycoplasma spp. Long antibiotic therapy was conducted, and in 20 days of antibiotic therapy were used:

- with drinking water: tylosin, colistin, amoxicillin, doxycycline
- injection: florfenicol
- by spraying: tylosin with colistin

Despite long therapy with various antibiotics, high falls continued, and it was decided to stop antibiotic therapy.

Post-mortem examination.

An anatomopathological examination revealed serous caseous fibrin in the sinuses, pneumonia, (Fig. 1-4), pericarditis, (Fig. 4), tracheitis.

Fig. 1

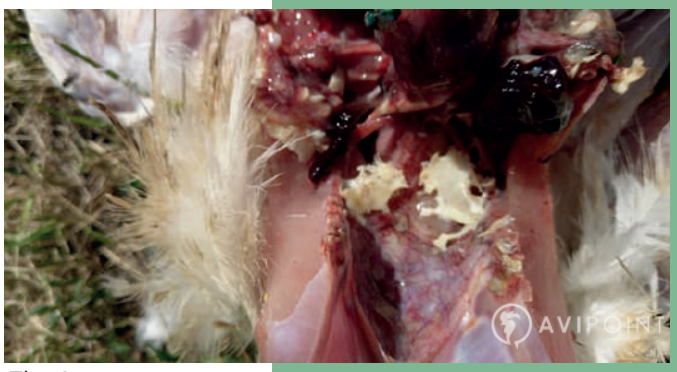


Fig. 2

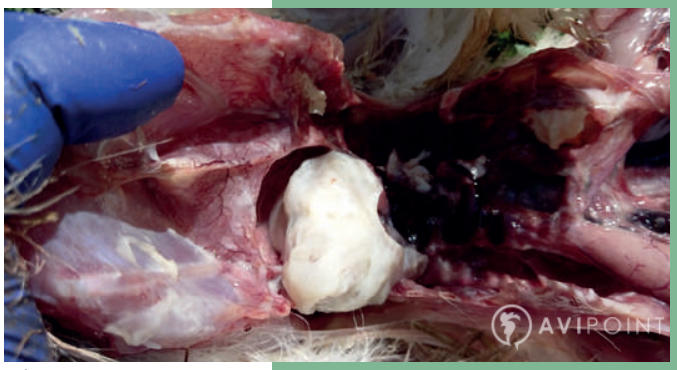


Fig. 3

Fig. 4

Diagnosis.

BASED ON LABORATORY RESEARCH:

Turkey rhinotracheitis (TRT) with complication: O. rhinotrahealem, E. coli and Mycoplasma spp.

Recommendations.

For 5 days:

BIOTIX S 1000 mL / 1000 L of water, in ½ water drunk for 5 days and in the second ½ of water COMPLEX AD3EK 250 mL / 1000 L of water for 5 days

Effects of therapy.

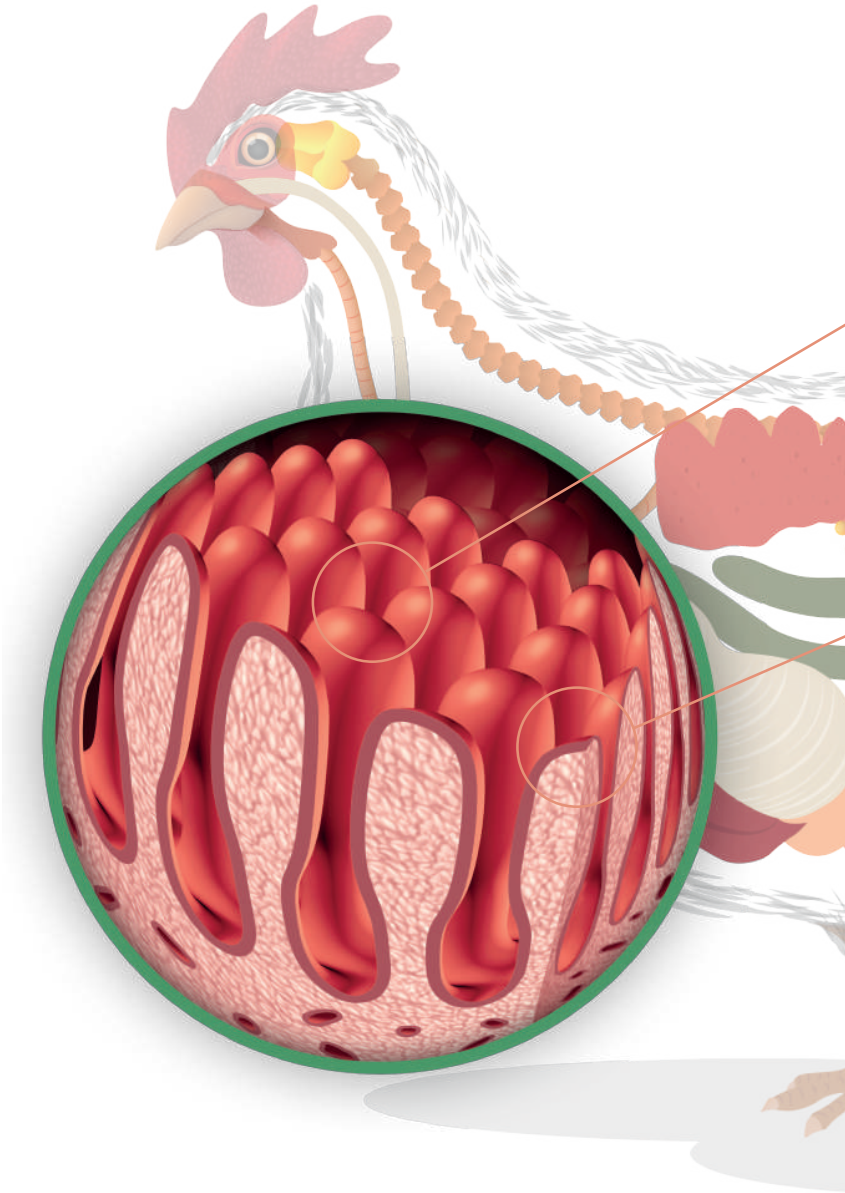
Table. Reduction of the daily mortality.

Daily number of falls	
Before BIOTIX S therapy	120
1st day of BIOTIX S therapy	112
2nd day of BIOTIX S therapy	80
3rd day of BIOTIX S therapy	60
4th day of BIOTIX S therapy	40
5th day of BIOTIX S therapy	30
After BIOTIX S therapy	30

Two days after the start of therapy, the number of daily falls fell gradually. For several days after the end of therapy, falls continued at 30 per day, but they were indebted birds that survived the peak period of infection. No recurrence of infection was observed, however the herd did not catch up with the weight target by the end of the cycle.

Digestive tract infections

Diarrhea is the most common symptom of gastrointestinal infection. It is frequent passing of feces with a changed consistency and disturbed proportions of liquid to solid fraction (loss of firmness, regular shape). The reason for the appearance of the droppings deviating from its appearance may be physiological intestinal inflammation due to the presence of pathogens (bacteria, viruses, etc.). Pathogens damage the intestinal mucosa directly through mechanical action and also indirectly through the production of toxins and metabolites.



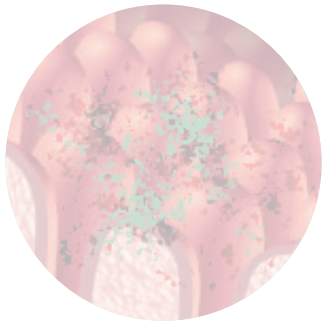
Risk factors for infection

- reduced immunity / immunosuppression
- incorrect biosecurity - increased amount of pathogens in the environment
- imbalance of intestinal microflora
- bad ventilation
- high density of birds
- presence of ectoparasites

Pathogenesis

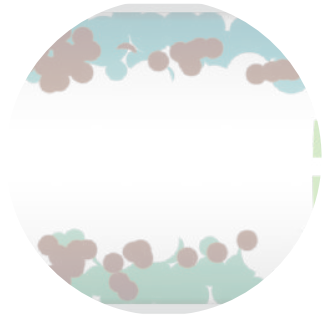
Bacteria and viruses:

Damage intestinal epithelium

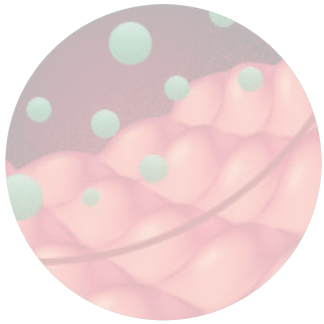


Disturb water resorption

Disturb intestinal peristalsis



Interfere with digestion and absorption



SOLUTION 1

Digestive tract infections

- bacterial infections of the digestive system
- in case of inflammation of the intestines
- in the presence of feces with a color and consistency different from the physiological, mucus admixture (bacterial background diarrhea)

Biotix S

500	1000 l	5 days
ml	*drinking water* 1/2 daily water drunk	

In turkeys over 10 weeks of age, 1000 mL / 1000 L of water, in ½ of water drunk per day, for 5 days

Enterocid Grower

250	1000 l	3 days
gram	*drinking water* 1/2 daily water drunk	

To improve regeneration processes, we recommend using a probiotic preparation after BIOTIX S.

Expected effect:

Limitation of diarrhea, change of feces towards physiological, reduction of falls. The therapeutic effect is visible on the 3-4 day of therapy, in 5 days the symptoms disappear.

SOLUTION 2

Digestive tract infections

- bacterial infections of the digestive system
- increasing daily bird mortality
- in the presence of fibrin on internal organs found in the post-mortem examination
- in the presence of feces with a color and consistency different from the physiological, mucus admixture (bacterial background diarrhea)

Biotix S

1000 *ml*	1000 l *drinking water* 1/2 daily water drunk	5 days

Enterocid Grower

250 *gram*	1000 l *drinking water* 1/2 daily water drunk	3 days

To improve regeneration processes, we recommend using a probiotic preparation after BIOTIX S.

Expected effect:

Limitation of diarrhea, change of feces towards physiological, reduction of falls.
The therapeutic effect is visible on the 3-4 day of therapy, in 5 days the symptoms disappear.

SOLUTION 3

Digestive tract infections

- suspected immunosuppressant activity
- suspected presence of enteropathogenic viruses
- increase in daily bird mortality
- occurrence of slight diarrhea

Biotix S

1000 *ml*	1000 l *drinking water* 1/2 daily water drunk	5 days

Booster

500 *ml*	1000 l *drinking water* 1/2 daily water drunk	3 days

The ingredients contained in BOOSTER show strong immunostimulatory properties, improving the condition of birds when fighting infection.

Expected effect:

Limitation of diarrhea, change of feces towards physiological, reduction of falls. The therapeutic effect is visible on the 3-4th day of therapy, in 5 days the symptoms disappear.

ACTION OF ACTIVE SUBSTANCES

Biotix S

ANTIVIRAL

- damages the outer virus shields
- inhibits viral enzymes
- disturbs the processes of the virus attaching (adhesion) to animal cells

ANTIBACTERIAL

- blocks enzymes important for bacterial life, e.g. alcohol dehydrogenase
- inhibits bacterial DNA and RNA synthesis
- easily penetrates the outer cell membranes of bacteria disrupting their functioning
- destroys the internal structures of bacteria
- broad spectrum of activity against G+ and G- bacteria

Enterocid Grower

- stimulates the production of enzymes (e.g. pepsin)
- participates in the creation of a natural biofilm
- produces bacteriocins
- produces lactic acid - reduces the pH of the intestinal environment
- displaces pathogenic microflora from the small and large intestines

Booster

- supports the production of lymphocytes and immunoglobins
- zinc is a building block of enzymes that support functioning of the immune system
- affects the regulation and functioning of i.a. neutrophil
- accelerates tissue regeneration

CLINICAL CASES

CLINICAL CASE 1

Birds.

Chicken broiler ROSS 308, 1 house, 20 000 birds

Symptoms.

Very weak chicks came to the farm, from the beginning high falls (from 30 up to 450 pieces per day). An antibiotic was given from day 3 of life, followed by a short-term improvement - after 2 days of treatment, the breeder reported lameness, persistent diarrhea, coughing, 30 to 110 falls, and an incorrect uniformity of birds.

Post-mortem examination.

An anatomopathological examination conducted on the 3rd day of life revealed intestinal hyperemia and very severe hyperemia of the yolk sacs (Fig. 1). After antibiotic therapy, another post-mortem examination was performed on the 9th day of life, which revealed intestinal hyperemia, lack of yolk sac absorption, inflammatory changes in the umbilical region (Fig. 2-3).

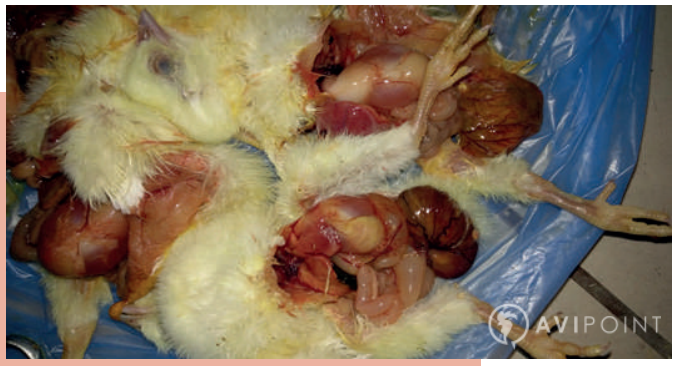


Fig. 1

Fig. 2

Fig. 3

Diagnosis.

ENTERITIS, OMPHALITIS

Recommendations.

From day 9 for 5 consecutive days doxycycline with colistin was administered, without therapeutic effect, therefore on the 5th day of antibiotic therapy BIOTIX S was administered at a dose of:
The first 2 days 1000 mL / 1000 L in ½ drunk water a day, the next 3 days 500 mL / 1000 L in ½ drunk water a day.

Effects of therapy.

After the therapy, complete resolution of clinical symptoms was observed. After the end of therapy until the end of the production cycle, no recurrence of enteritis was observed.

CLINICAL CASE 2

Birds.

Chicken broiler Ross 308, 1 hen house, 38 000 birds

Symptoms.

On the 21st day of birds life, after the feed change, daily weight gain drops, water intake, wet litter, bloody feaces (Fig. 1), increasing daily mortality to 17 birds was observed.

Fig. 1

Diagnosis.

ENTERITIS

Recommendations.

For 3 days:

BIOTIX S 500 mL / 1000 L, in ½ daily water drunk

Effects of therapy.

Improved clinical state of birds, increased condition of birds, complete resolution of clinical symptoms.

Table. Water consumption before and after therapy. Increase of water consumption by almost 1000L.

	Day	Water intake (L)
Before Biotix S therapy	19	5944
	20	6024
During Biotix S therapy	21	6670
	23	7596
	24	7550
After Biotix S therapy	25	8427

Table. Reduction of the daily number of falls and missed birds.

Day	No. of falls	Missed birds
Before Biotix S therapy	17	5
1st day of Botix S therapy	17	8
2nd day of Botix S therapy	13	5
3rd day of Botix S therapy	12	5
After Biotix S therapy	4	1

CLINICAL CASE 3

Birds.

Chicken broiler ROSS 308, 1 object, 40 000 birds

Symptoms.

In the third week of birds life, diarrhea persisting for 4 days: loose, light brown, foamy feces, in about 10% of the flock feather defects, feathers contaminated with feces, about 20% of the flock swollen joints, bird activity reduced, birds clustered together (about 40 % of the herd), decrease in feed and water consumption, increase in daily falls to 30

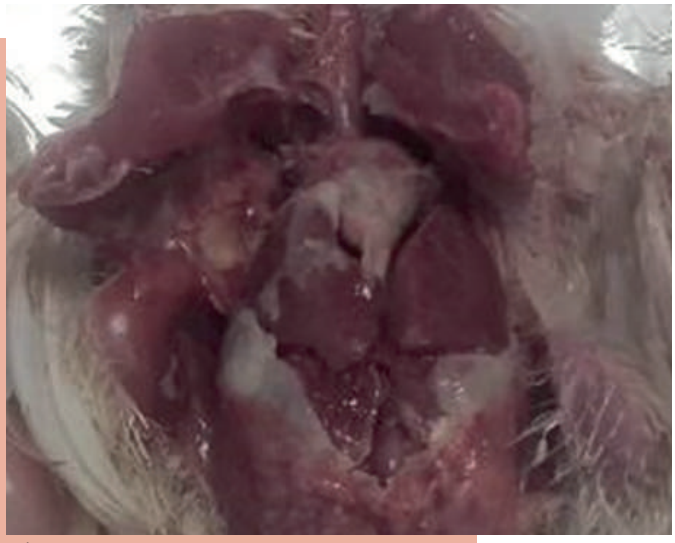


Fig. 1

Post-mortem examination.

Tracheal mucosal hyperemia, Fibrinous air sac inflammation, Pericardial fluid, Intestinal hyperemia along the entire length, Fibrin on the heart and liver (Fig. 1), , Enlarged bursa of fabricius, Swollen joints

Additional tests.

Chicken astroviruses: positive

Diagnosis.

COLIBACILLOSIS

Recommendations.

For 5 days:

BIOTIX S 330 mL / 1000 L water in ½ water drunk, in the second ½ BOOSTER 250 mL / 1000 L water

Effects of therapy.

An improvement in the birds health and an increase in feed and water consumption were observed.

Table. Increase in water and feed intake

	Water intake (L)	Feed consumption (kg)
Before Biotix S therapy	8000	4000
After Biotix S therapy	9000	4500

Table. Reduction of the daily number of falls after the therapy

Daily number of falls	
Before Biotix S therapy	30
After Biotix S therapy	15

CLINICAL CASE 4

Birds.

Chicken broiler ROSS 308, 3 houses on the farm, 22 000 birds each

Symptoms.

Hen house K-2 (pellet), 31 day old, flock depressed, wet litter, increase in daily falls from about 10 to 21 birds

Post-mortem examination.

An anatomopathological examination revealed a very large amount of fibrin in the pericardium (Fig. 1), peritoneum on the liver surface, within the intestinal ecchymosis, hyperemia, and mucosal swellings.

Diagnosis.

COLIBACILLOSIS

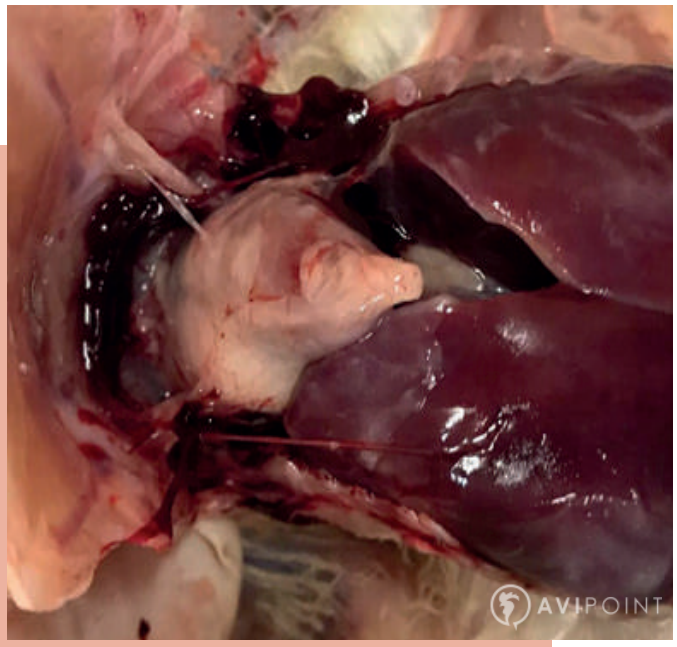


Fig. 1

Recommendations.

Due to the severity of sectional changes, colistin was used in combination with BIOTIX S to enhance the effect of therapy.

Alternately for 3 days:
BIOTIX S 500 mL / 1000 L of water in ½ of water consumed daily and in the second ½ COLISTINI 200 g / 1000 L of water

Effects of therapy.

Table. Reduction of the daily number of falls after the therapy

Daily number of falls	
Before Biotix S therapy	21
1st day of Biotix S therapy	13
2nd day of Biotix S therapy	19
3rd day of Biotix S therapy	21
After Biotix S therapy	11

During the therapy, birds mobility increased, feces returned to physiological form. No sectional changes indicating Colibacillosis outbreak were observed.

BIOTIX S GENERAL APPLICATION

IN ORDER TO REDUCE THE USE OF ANTIBIOTICS

Biotix S

250-1000	1000 l	3-5 days
ml	*drinking water* 1/2 daily water drunk	

GENERAL BACTERIAL AND VIRAL INFECTIONS

Biotix S

250	1000 l	3-5 days
ml	*drinking water* 1/2 daily water drunk	

TO STOP INFECTION DEVELOPMENT AND ULTIMATELY AVOID ANTIBIOTIC THERAPY

Biotix S

250	1000 l	3-5 days
ml	*drinking water* 1/2 daily water drunk	

IN CASE OF HIGH RESISTANCE OF BACTERIA TO ANTIBIOTICS

Biotix S

250-1000	1000 l	3-5 days
ml	*drinking water* 1/2 daily water drunk	

BACTERIAL INFECTIONS RECURRING REGULARLY IN EVERY FLOCK

Biotix S

250-500	1000 l	3-5 days
ml	*drinking water* 1/2 daily water drunk	

Use in every cycle at the time of infection risk, e.g. if they are repeated in the 4t week of the production cycle, administer prophylactically during this period, without waiting for symptoms to occur.

VIRAL INFECTIONS RECURRING REGULARLY IN EVERY CYCLE

Biotix S

250-500	1000 l	3-5 days
ml	*drinking water* 1/2 daily water drunk	

Booster

250-500	1000 l	3-5 days
ml	*drinking water* 1/2 daily water drunk	

Use in every cycle at the time of infection risk, e.g. if they are repeated in the 4th week of the production cycle, administer prophylactically during this period, without waiting for symptoms to occur.

We recommend using BOOSTER or a preparation containing a high dose of vitamin A to stimulate antiviral immunity.

BEFORE RECEIVING THE RESULTS OF MICROBIOLOGICAL TESTS AND THE ANTIBIOGRAM

Biotix S

250-500 *ml*	1000 l *drinking water* 1/2 daily water drunk	3-5 days

IN SITUATIONS WHERE WE CANNOT GIVE ANTIBIOTICS E.G. DUE TO WITHDRAWAL PERIODS

Biotix S

250-500 *ml*	1000 l *drinking water* 1/2 daily water drunk	3-5 days

IN SITUATIONS WHERE ANTIBIOTICS ARE NOT RECOMMENDED E.G. IN LAYERS

Biotix S

250-500 *ml*	1000 l *drinking water* 1/2 daily water drunk	3-5 days

Colitin

500 *ml*	1000 l *drinking water* 1/2 daily water drunk	3-5 days


Biotix s
MINTAMIX
Respibiox
Salivet plus
ENTEROCID
Grower
Booster

FAQ

WHICH PREPARATIONS SHOULD NOT BE COMBINED WITH BIOTIX S?

BIOTIX S should not be combined with probiotic preparations, because it has antibacterial properties. All other preparations are recommended to be administered in the second half of the day (in the second half of the water drunk per day). Also it is advised to avoid application with preparations containing iron, copper and manganese ions.

CAN AN EMERGENCY DOSE OF BIOTIX S (HIGHER THAN A LABEL) BE USED IF NECESSARY? WHAT IS THE MAXIMUM RECOMMENDED DOSE?

BIOTIX S contains very strong phytoncides, administration of a dose greater than 1000 mL / 1000 L of water may cause severe hyperemia and irritation of the intestinal mucosa in poultry. Higher doses up to 2000 mL / 1000 L water can be used in pigeons.

ARE THERE CASES WHICH BIOTIX S IS NOT RECOMMENDED FOR?

We do not recommend the use of BIOTIX S in the case of infections with very severe hyperemia and significant damage to the intestinal structures (e.g. in the case of acute viral enteropathies) because the administration of the preparation in such situations may cause an irritating effect.

CAN BIOTIX S BE USED FOR PREVENTION OF RECURRENCE INFECTIONS, E.G. IN THE EVENT OF COLIBACILLOSIS IN THE HERD IN EVERY PRODUCTION CYCLE?

We confirm the effectiveness of using BIOTIX S prophylactically in the period of increased risk of infection. In this situation, BIOTIX S should be administered at a dose of 500-750 mL / 1000 L of water, in ½ of water drunk per day, for 5 days. Each time after using BIOTIX S we recommend giving a probiotic preparation for a minimum of 24 hours and optimally for three consecutive days. BIOTIX S ingredients have strong antibacterial properties

Supportive products INDEX

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NOTES

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