



BROILER BREEDER PROGRAM

KEMIN[®]

Main challenges in broiler breeder production

UNIFORMITY

Uniformity is a way to measure the body weight variation in a flock. Reaching the breeder target body weight at a specific age and flock uniformity are the two most important criteria of pullet quality. Flocks with high uniformity will reach peak egg production earlier and will have higher peaks. Poor uniformity is associated with variation in the degree of sexual maturity of hens, where underweight pullets have delayed onset of egg production and overweight ones have an early start.

Diseases and vaccination programs are the most important factors that affect uniformity in breeder. Therefore improving vaccination efficiency and ensuring that the flock is free of diseases are key.

CHRONIC ENTERITIS AND WET LITTER

The gastrointestinal tract (GIT) not only digests and absorbs nutrients but also has microbiota, whose balance is crucial for optimal animal health and performance. There are a lot of bacterial species in the GIT of healthy birds with a stable gut microbiota. It is well documented that some gut bacteria such as *Escherichia coli*, *Clostridium*, *Salmonella* can cause disease. However, it is also recognized that many gut microbes are beneficial.

Any disease that affects the normal digestive gut ecology can cause subclinical or clinical enteritis. Enteritis often causes diarrhea, resulting in increased nutrient and moisture excretion into the litter, resulting in wet litter. Wet litter increases the incidence of Foot Pad Dermatitis (FPD) in broiler breeder.

Flocks with footpad problems report reduced mating and fertility. Litter condition has a major effect on male footpad health and ultimately on the ability to mate. If litter becomes wet, additional litter must be added to give males and females a comfortable area to walk on and mate.

SALMONELLA

Salmonella is recognized as zoonotic agent and one of the most important foodborne pathogens. Dissemination of *Salmonella* in poultry breeding pyramids via vertical transmission have been thought to have contributed to the original dissemination of *Salmonella* to commercial broiler flocks. Therefore, the goal nowadays is to effectively control and eliminate *Salmonella* species from the breeding program. The ability of the primary breeder to supply *Salmonella* free parent stock to the broiler industry is a key component of this industry's attempts to reduce or eliminate *Salmonella* from the finished product, as well as meet the increasingly strict export requirements.

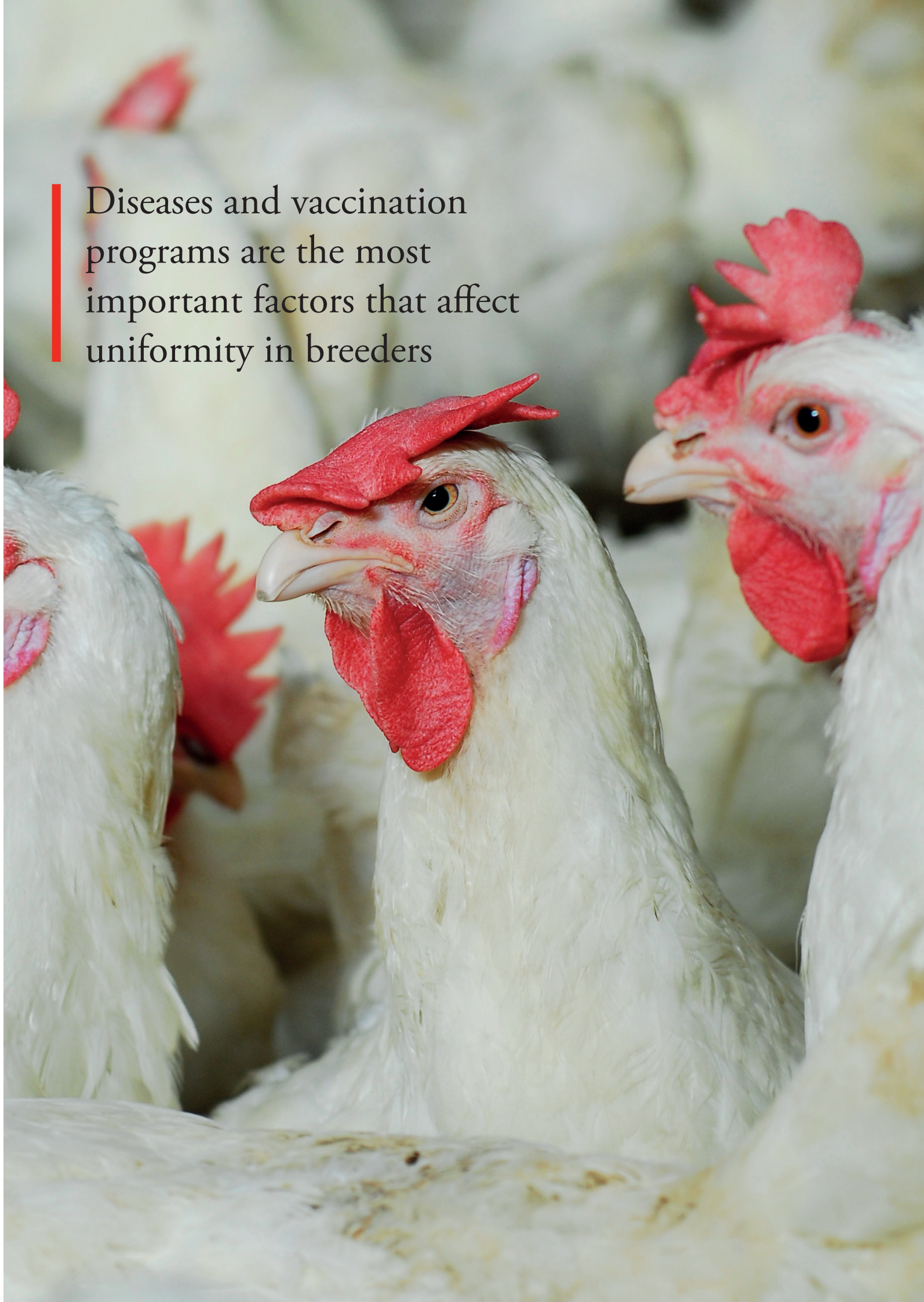
MYCOTOXINS

Mycotoxins are an undesired factor in any feed formulated for animals in production and reproduction. The presence of mycotoxins in breeding bird rations does not always lead to visible symptoms. However, it may influence productivity, egg quality, hatchery performance, as well as chick quality and immunity. Mycotoxins exert toxic effects mainly on the gastrointestinal tract, liver, and kidneys and can accumulate in some tissues as well as in the eggs.

EGGSHELL QUALITY AND DAY-OLD CHICK QUALITY

Eggshell quality is an important parameter in poultry industry, influencing the economic profitability of egg production and hatchability. Eggshell strength is a vital defence line against physical damage and consequently penetration of pathogenic microbes. One of the main concerns is a decrease in eggshell quality as the hen ages, due to an increase in egg weight without an increase in the amount of calcium carbonate deposited in the shell. Aged hens become less efficient in absorbing Ca than younger ones due to changes in the gut microflora and reduced intestinal integrity.

Improving eggshell quality results in improved day old chick quality. Older broiler breeders may show an increased incidence of dirty or cracked eggs. Consequently, day-old chick quality is deteriorated resulting in increased levels of first week mortality.



Diseases and vaccination programs are the most important factors that affect uniformity in breeders

Stage	Challenge	Product name
0 - 17 WEEKS	Vaccination efficiency	Aleta™
	Uniformity	CLOSTAT®
17 WEEKS - PEAK	Enteritis	CLOSTAT®
	Time to reach peak production	
	Stress	Aleta™
PEAK - 50 WEEKS	Enteritis	CLOSTAT®
	Maintain maximal egg production and egg quality	
51 - END OF PRODUCTION	Egg production	CLOSTAT® ButiPEARL™
	Egg quality	
	Hatchability	
	Enteritis	
ALL CYCLE	Heat Stress	Aleta™
	Cannibalism and feather picking	CLOSTAT®
	Salmonella	FormaXOL™
	Mycotoxins	TOXFIN®

Products

Aleta™

A unique beta-glucan, derived from algae (*Euglena gracilis*), serving as an immune modulator to improve animal health.



MODE OF ACTION

Aleta is interacting with the immune system resulting in an immune modulation. Immune cells are rapidly recruited and activated to the site of infection increasing the ability of animals to cope with the disease. Consequently, Aleta will help animals during stress, disease and vaccination periods.



BENEFITS

- Improves vaccination efficiency
- Helps animals to resist stressful conditions
- Reduced morbidity and mortality during pathogenic challenges (diseases)
- Supports animals in antibiotic reduction programs
- Provides consistent ROI: avoids performance reduction in situations of disease and stress
- Helps young animals to mature their immune system



Products

ButiPEARL™

An encapsulated and highly concentrated calcium butyrate. The encapsulation allows for superior handling ease and sustained release along the intestinal tract.



MODE OF ACTION

ButiPEARL's proprietary encapsulation technology allows release of its high concentration (50%) of butyric acid throughout the upper and lower gut, where it needs to be to perform its action:

- Enterocyte proliferation and villi growth
- Antimicrobial compounds secretion by paneth cells
- Tight junction reinforcement



BENEFITS

- Strengthens barrier against pathogens and avoiding a leaky gut
- Improves nutrient absorption for better performance thus improving egg quality, eggshell quality and hatchability
- Improves overall gut health, reduces diarrhea incidence
- Is a tool in antibiotic reduction programs
- Assists the GIT development in newborn and young animals



Products

CLOSTAT®

A proprietary probiotic, based on *Bacillus* spp. PB6 spores, originating from natural enteritis resistant chickens.



MODE OF ACTION

CLOSTAT spores germinate, start to multiply in the intestine and perform their action:

1. Modulates *Clostridium* spp.
2. Stimulates growth of *Lactobacillus* and *Bifidobacterium* in the intestine
3. Modifies inflammation response
4. Stimulates a well developed and diverse intestinal microbiome



BENEFITS

- Reduces the need to treat with antibiotics and the use of antibiotic growth promoters
- Tackles dysbiosis, wet litter and diarrhea problems
- Improves egg shell quality and discoloration
- Better survivability
- Improves flock uniformity
- Improves profit margin through improved production and hatchability
- Better microbial quality of day-old chicks



Products

FormaXOL™

Non-antibiotic solution, supported by its encapsulation technology and empowering synergism in between its ingredients, to manage Enterobacteriaceae (e.g. *Salmonella*, *E. coli*).



MODE OF ACTION

Formic acid has been proven to kill *Salmonella* & *E. coli*. In FormaXOL, formic acid, citric acid, and functional flavours are microencapsulated with two specific technologies ensuring an effect along the digestive tract. Delivered at the right spot due to its technology, the functional flavours will damage the gram-negative bacterial cell wall and facilitate the entrance of the organic acid within the bacteria, resulting in bacterial death.



BENEFITS

- Is a non-antibiotic solution for bacterial control
- Avoids *E. coli* associated losses during production cycle



Products

TOXFIN®

Protecting the animal from the adverse effects following ingestion of mycotoxin contaminated feed, is the priority for the TOXFIN family. TOXFIN® range offers multiple solutions to reduce the bioavailability of mycotoxins and their negative effects in the animal, and to allow the production of safe feed.



MODE OF ACTION

Depending on the TOXFIN product of your choice, different strategies to protect the animal from the adverse effects of mycotoxin contaminated feed are available. From eliminating mycotoxins by unique synergistic combinations of adsorbents to an all-in-one solution to tackle the adverse effects of mycotoxins in animals by combining different strategies:

- Reducing bioavailability by unique adsorbent blend ((e.g. bentonite (1m558) fulfilling the European Regulation 1060/2013 as an aflatoxin B1 binder)
- Preventing oxidative stress
- Supporting and protecting the liver
- Modulating the immune system by unique algae derived beta-glucan



BENEFITS

- Protects the animal from all kinds of mycotoxin threats
- Maintains availability of essential nutrients to the animal
- Reduces symptoms associated with mycotoxicosis
- Avoids performance reduction caused by mycotoxicosis
- Reduces the bioavailability of feed mycotoxins in the gastro- intestinal tract and promotes mycotoxin excretion via faeces
- Fortifies the natural defense system of the animal and safeguards the organs



DO YOU WANT MORE INFORMATION?

Contact our Technical Service Manager:



PAULINA BUKOWSKA

North & East EU
Poultry Veterinarian
paulina.bukowska@kemin.com



MUTASEM ALHADDAD

Middle East
Poultry Veterinarian
mutasem.alhaddad@kemin.com



RICARDO NETO

South & West EU
Pig Veterinarian
ricardo.neto@kemin.com

HEALTH BY KEMIN



Aleta™
IMMUNE SUPPORT



Formyl™ - FormaXOL™
ENTEROBACTERIACEAE CONTROL



ButiPEARL™
INTESTINAL INTEGRITY



TOXFIN®
MYCOTOXIN MANAGEMENT



CLOSTAT®
INTESTINAL HEALTH

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Toekomstlaan 42,
2200 Herentals
Belgium

T. +32 14 28 62 00

www.kemin.com/emena

