

Kanatlı Hayvan Besleme

Kanatlılarda Islak Altlık, Ayak Tabanı Dermatitis- Besleme İlişkisi

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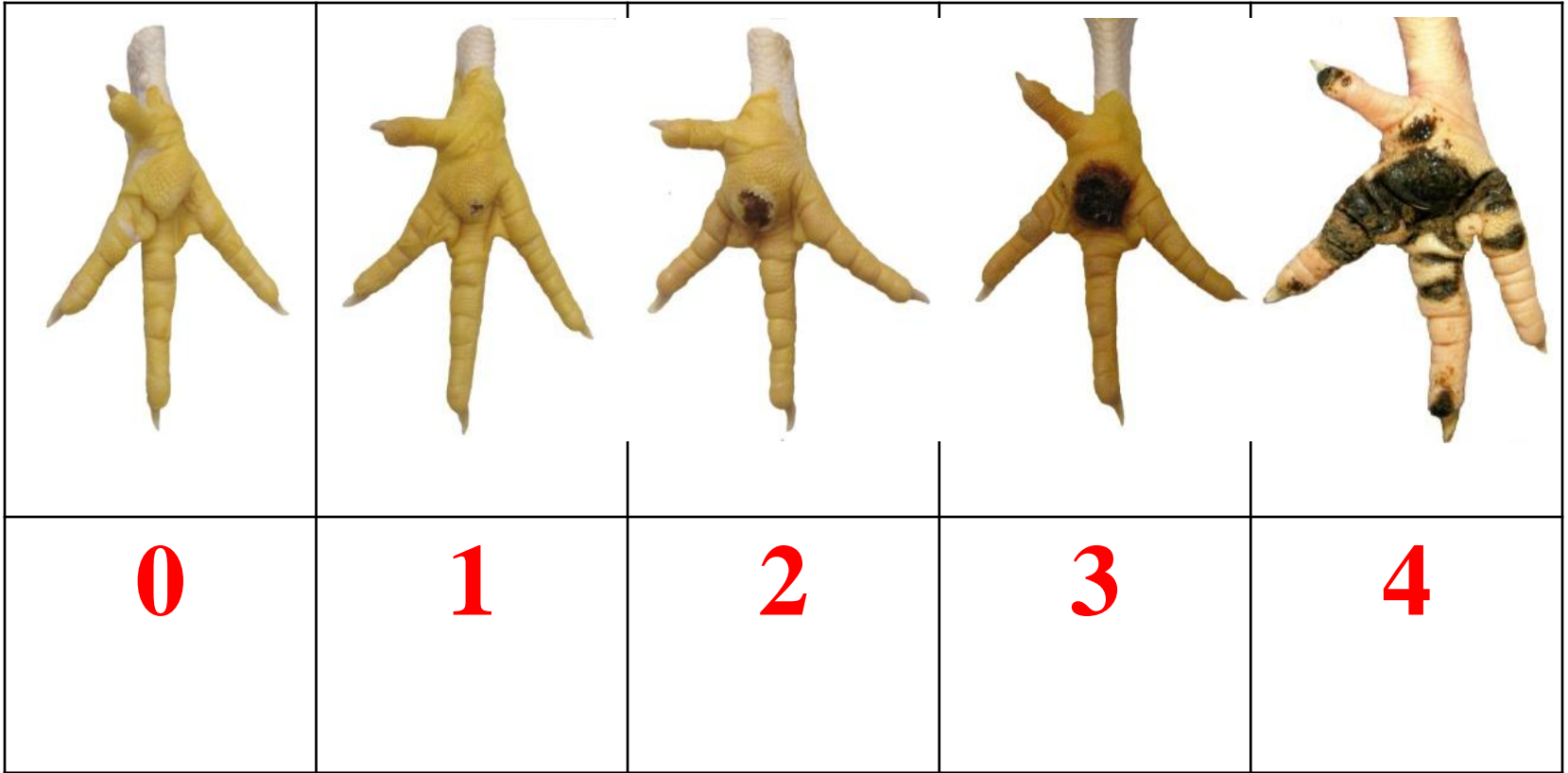
ZZT424-Kanatlı Hayvan Besleme Ders Notları

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Foot Pad Dermatitis

(Ayak Tabanı Dermatitisi)



The effect of the composition of the birds' diet on litter quality differs because of variables such as age differences among birds, stocking density, litter type and temperature. These factors influence feed intake, excreta production and evaporation capacity.

Mineral intake

The minerals that are involved in the maintenance of osmotic pressure, anionization balance and the structural integrity of the birds have the biggest impact on litter quality. These minerals include sodium, potassium, chloride, magnesium, calcium, and phosphorous.

The effect of sodium levels is age dependent. Age is related to increased water and feed intake and increased faecal output. High sodium levels increase water intake, increasing faecal moisture content. The effect of sodium on litter quality is at its largest when derived from sodium bicarbonate, and the addition of the enzyme phytase further increases the negative effect that sodium already has.

High potassium levels result in a higher water-to-feed intake ratio, which in turn increases the litter moisture content. The effects of potassium are also age related, and potassium bicarbonate and potassium chloride have the most serious impact when it comes to litter quality.

as potassium, but the effects of chloride are less defined.

The effect of calcium and phosphorous differs between layer and broiler chickens. Layer chickens show no response to high levels of calcium in their diet, but broilers tend to increase their water consumption. The opposite is true of phosphorous.

Protein, carbohydrates and lipids

Protein, carbohydrates and lipids influence litter quality by affecting the microbial population of the gastrointestinal tract (GIT) and the availability of the nutrients to the digestive enzymes, and thus the place of digestion/fermentation in the GIT.

Highly digestible proteins, such as fish meal, are highly soluble, which may result in its arriving at the lower GIT undigested. The undigested protein serves as a growth medium for hazardous microbes in the lower GIT, such as *Clostridium perfringens*, which can lead to diarrhoea.

Plant proteins may lead to wet litter due to the high levels of potassium and non-digestible carbohydrates and protein, which increases faecal moisture content. Excess protein leads to increased urinary nitrogen. This is converted to NH_3 by microbes present in the litter.

Water soluble non-starch polysaccharides (NSP) such as β -glucans, sucrose and raffinose increase digesta viscosity. This decreases the availability of the nutrients to the digestive enzymes. High NSP levels lead to increased faecal moisture and an unfavourable shift of the microbial population to the hind gut.

Finally, litter quality is influenced by rancid fat. Lipids in full fat soya are susceptible to oxidation. Rancid fats are less digestible, have reduced absorption through the GIT, cause intestinal

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inflammation and change the intestinal microbial population. This may lead to wet litter either directly through steatorrhoea (the excessive discharge of fats in the faeces) or indirectly by affecting the gut flora and gut wall integrity through oxidative damages.

Soya bean meal quality

The quality of soya bean meal is directly related to feed passage. Feed passage

can be defined as the condition where the droppings of broiler chickens lose their normal distinctive characteristics. It is correlated with trypsin-inhibitor levels. Trypsin is a digestive enzyme secreted in the GIT, which aids with the digestion of protein.

The addition of β -mannanase, an exogenous enzyme, has shown to improve litter quality through its positive

effect on the immune system of the bird.

The negative impact of wet litter

Two major direct effects of wet litter are dermatitis and noxious gasses, which affect the eyes and respiratory tract of the birds. The indirect effects influence the air quality, which in turn increases the birds' susceptibility to respiratory and infectious diseases. Managing wet litter is labour intensive and costly.

h. Trans Fatty Acids

Trans fatty acids are isomers of naturally occurring cis fatty acids. Trans fatty acids are often produced by the process of hydrogenation, as commonly occurs in production of margarine and other cooking fats. Hydrogenated (stabilized) soybean oil, which is a common component of cooking oils, contains around 20% trans fatty acids. With increasing use of restaurant grease in animal fats and fat blends, it seems inevitable that

fats used in the feed industry will contain higher proportions of trans fatty acids than occurred some 20 years ago. It is thought that 'overused' frying oil, that contains trans fatty acids as well as oxidized and polymerized materials, is harmful to human health. These trans fatty acids can be found in human adipose tissue, and have been associated with immune dysfunction and unusual lipid metabolism in heart tissue. There is very little information available on the effects of trans fatty acids on health of broilers or layers.