ZZT424
Kanatlı Hayvan Besleme

Broyler Besleme

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ZZT424-Kanatlı Hayvan Besleme Ders Notları

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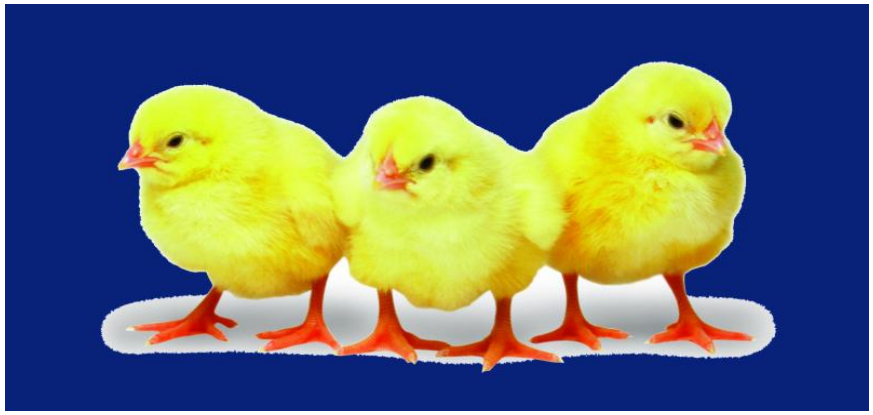
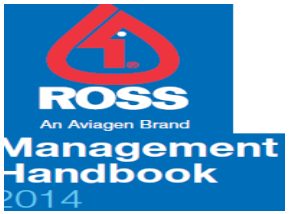
Broyler Besleme

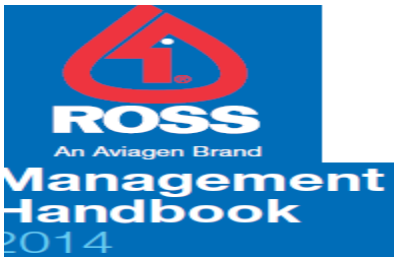




Etlik Piliçlerde Erken Besleme

- **Nutritional jumpstart**

- Regardless of what you add to the feed, neonatal birds must eat that feed before it expresses its effectiveness. One way to give hatchlings a nutritional jumpstart before they start eating feed is to feed them before they hatch. Over recent years, Dr. Zehava Uni (Hebrew University of Jerusalem) and I have collaborated to develop in-ovo feeding technology: injecting supplemental nutrients into the amnion of the late-term embryo a day before internal pipping.
- We have demonstrated that in-ovo feeding can improve hatchability rate and chick quality, increase glycogen reserves, advance gut development, improve skeletal health, and promote muscle development. Using gene array technology, we observed over 50 genes are expressed differently over time by in-ovo feeding. Essentially, in-ovo feeding advances the development of newly hatched chick by 2-3 days, and they are able to consume more feed immediately after hatch. The first few days after hatch is very important period in terms of subsequent welfare and growth performance of the bird. Poultry scientists all over the world are now using in-ovo feeding technology to study perinatal nutrition of chickens, turkeys and ducks. In-ovo feeding and early nutrition will continue to be a very fruitful area of poultry research in the future.



Yem Formu

Etlik Piliçler İçin Yem Formu

Poultry feeds are formulated to a specific nutrient concentration to support bird performance. However, growth will be dependant upon feed intake, which in turn is influenced by feed form. The highest feed intake and best performance is achieved by feeding good quality crumble/pellets. It is known that high levels of fines have a negative effect on intake, live weight and FCR. The Ross broiler is very responsive to feed form and recent data show that a reduction in fines of 10% can increase live weight for age by as much as 2%. Reductions in the energy cost of feeding activity by the bird can explain much of the benefits of pelleting on performance.

Pellet durability may be improved by manipulation of diet formulation, use of raw materials with good binding ability such as wheat, barley and rape and the use of pellet binders will have an influence.

Feed manufacturing processes will also have a substantial impact on pellet quality. Grinding of raw materials and thermal conditioning of feed are regarded as the most influential factors affecting pellet quality. Thermal conditioning not only releases the natural bonding agents in the diet but will also improve nutrient digestibility and reduce microbial contamination. When thermal processing, compensation sho
for any heat-induced degradation of vitamins.

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Etlik Piliçler İçin Yem Formu

Addition of fat post pelleting rather than at the mixer will have a positive effect on pellet durability.

Pellet durability should be tested in the feed mill prior to despatch of feed, aiming for a Holmen test result of 95% pellets after a 30 second test period or, for the Tumbling Can method, 98% pellets after a ten minute test period.

If durability results consistently fall below these levels, then the feed manufacturing process should be reviewed. This review should consider raw materials being used and the production process, in particular grinding, mixing, thermal processing and pelleting; emphasis should be placed on reviewing mill maintenance.

Broiler growth and FCR will generally be better if the Starter feed is in a sieved crumb form, the Grower should be introduced at ten days of age as a 2-3.5 mm pellet and the Finisher introduced at 25 days of age as a 3.5 mm pelleted product see the table below. Feeding greater than 4 mm pellet, in either the Grower or Finisher period, will reduce feed intake and growth and worsen FCR.

Etlik Piliçler İçin Yem Formu

Table 5.26 Performance of male broilers to 70 d when fed mash vs. pellet diets

	Body Wt. 70 d (g)	*F:G*[3]	*Mortality (%)*
High density[1]			
Mash	*3850*	*2.31*	*4.2*
Pellets	*4166*	*2.44*	*20.0*
Low density[2]			
Mash	*3571*	*2.45*	*5.8*
Pellets	*4111*	*2.50*	*12.5*

1 *20% CP:3100 Kcal/kg ME, starter (0-21 d);*
18% CP:3100 Kcal/kg ME, grower (21-49 d);
16% CP:3200 Kcal/kg ME, finisher (49-70 d)
2 *18% CP:2900 Kcal/kg ME (0-70 d)*
3 *Adjusted for mortality*

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I. Leeson, S., Summers, J.D.
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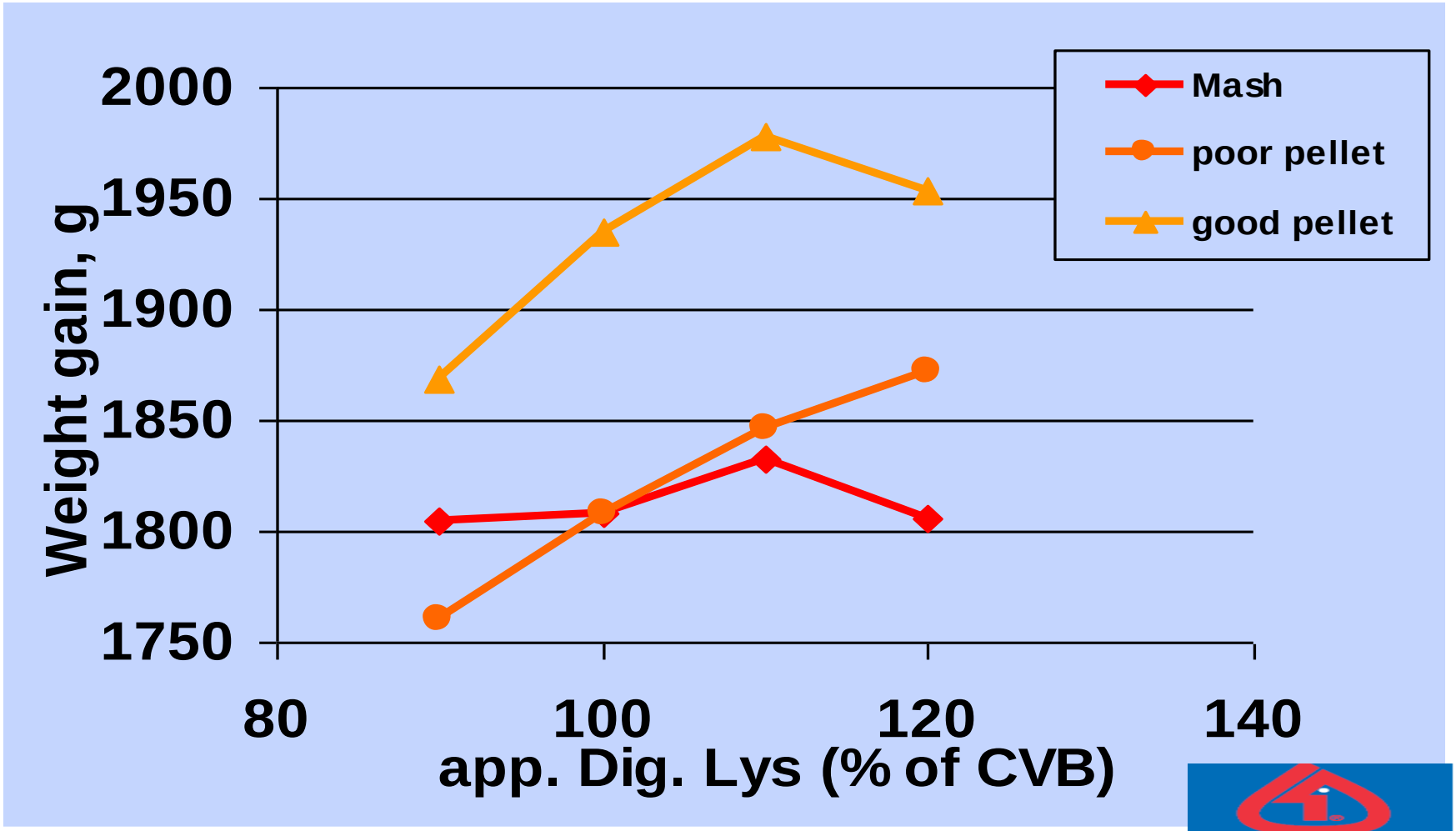
Yem Formunun Etlik Piliçlerde Canlı Ağırlığa Etkisi



Ross 308 Araştırma Sonuçları

Gruplar	Canlı Ağırlık		
	10d	21d	31d
1. Kontrol	297	975	1972
2. Toz	264	797	1579
3. Toz pelet miks	287	916	1835

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Ross 308 Araştırma Sonuçları

Gruplar	FCR		
	10d	21d	31d
1. Kontrol	1.39	1.53	1.63
2. Tozlaşmış Yem	1.54	1.67	1.71
3. Pelet+Tozlaşmış	1.42	1.60	1.69

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SONUÇLAR

- Sonuçlar yemde fiziksel kalite bozulmasının performansı olumsuz etkilediğini göstermektedir
- Canlı Ağırlıkta % 20 ve FCR'da % 4.9 kötüleşme

YEM FORMU ÖNEMLİDİR

Pelet Dayanıklılığının (PDI) % 10 yükselmesi Günlük Canlı Ağırlık Kazancında yaklaşık olarak 1 g artışa eşdeğerdir

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1. Kontrol

2. Tozlaşmış

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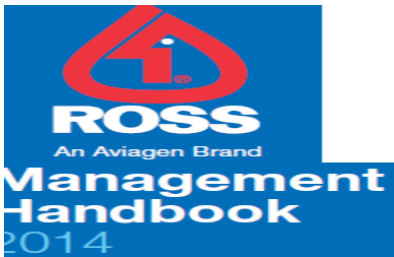
- **Feed science has always been an integral part of poultry nutrition as the dietary inclusion of new ingredients was incorporated into an acceptable feed form. Pellet processing of poultry feed has become a standard practice, mainly to improve feed handling properties and feed utilisation by the birds. Feed conversion improves when pellet quality improves. According to McKinney, the effective caloric value of pelleted feed is over 150 kcal/kg higher than of mash feed because birds spend less time eating and more time resting. This effective caloric value of pelleted feed becomes more important as energy costs increase.**
- In the future, there will be more research done on cost-effective means to improve pellet quality for poultry. New methods of conditioning feed to improve pellet quality will become essential, especially when feed safety is also considered. Although pellet quality can be improved by reducing particle grind size and increasing the heat processing of feed mash during conditioning and pelleting, the welfare of the bird may be compromised. Chickens and turkeys are seed eaters, and they have a built-in grinding organ called the gizzard. The gizzard does not have to work very hard in birds that consume feed that has been finely ground and manufactured into feed pellets. Because the gizzard is an important pre-digestion organ and "pacesetter" of gut motility in birds, highly processed feeds could result in more gut health problems associated with a microbial ecosystem that is less resistant to pathogens. Public interest in the welfare of birds fed all natural/ antibiotic-free feeds will force the poultry industry to consider alternative feed manufacturing technologies that promote gut health, yet maintain feed conversion efficiency. Because of the rising energy costs, and public concern about animal welfare, traceability, and food safety, the future will see resurgence in feed science research and technology.



Etlik Piliçler İçin Yem Formu

Table 3: Form of Feed by Age in Broilers

Age	Feed Form and Size
0-10 days	sieved crumbs
11-24 days	2-3.5 mm diameter pellets
25 days to processing	3.5 mm diameter pellets

When feeding mash, special attention should be paid to having coarse grist (e.g. particle size) and uniform grist distribution. Satisfactory broiler performance can be achieved on mash if pelleting is not available, especially where maize is the principle cereal. Mash feeds will benefit from the inclusion of some fat in the formulation to reduce dust.

Extended use of crumb products beyond 15 days is not recommended as crumb will depress feed intake and growth/FCR.

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Etlik Piliçlerde Dane Yemleme

The feeding of whole grain saves costs in feed manufacture and possibly in transport and may be used to facilitate a smoother transition of nutrient supply during the growing period. Whole grain feeding supports a better gut microflora, enhances digestive efficiency and can improve litter condition. There is some evidence that the feeding of whole wheat may increase coccidiosis resistance. These advantages must be set against the loss of carcase yield and breast meat. It must be remembered that the whole grain used should be treated with organic acids to control salmonellae, for which there will be a cost to be incurred.

The level of inclusion of whole grain should be accounted for in formulating the compound feed. The Ross broiler is very responsive to the level of Balanced Protein in the diet and when the compound feed or balancer feed is not adjusted for the amount of whole grain, birds will achieve a poor growth and FCR, have less breast meat and a greater fat content.

Both the amount of whole grain to be used and the composition of the compound (or balancer) feed must be considered carefully. The aim is to provide sufficient intakes of all nutrients from the combination of compound feed and grain. Individual birds satisfy, to some extent, their own nutrient requirements by selecting an appropriate mixture of the two feeds. Care must always be taken to ensure that intakes of micr
any medications contained in the feed are sufficient at the dilution ra
It is very important when feeding whole grain that the grain is of good qu
of fungal/toxin contamination.

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Etlik Piliçlerde Dane Yemleme

Table 4: Safe Inclusion Rates of Whole Grain in Broiler Rations

Ration	Inclusion Rate of Grain
Starter	Zero
Grower	gradual increase to 10%
Finisher	gradual increase to 15%

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