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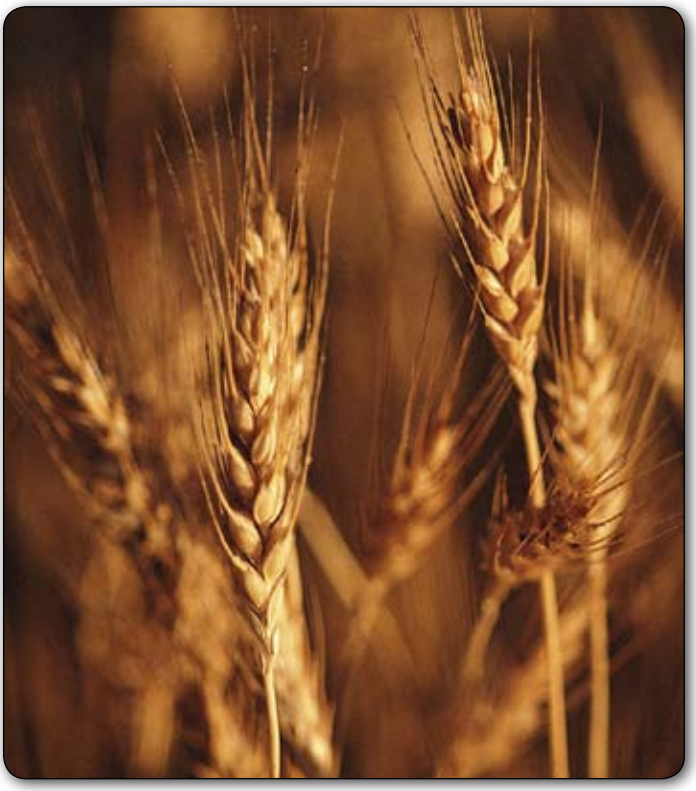
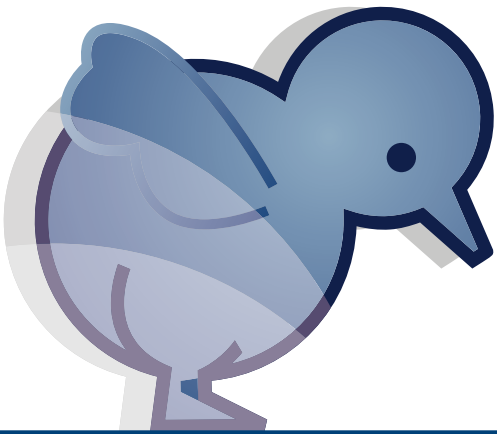
Wheat Feeding in Broiler Production

Wheat feeding in broiler production has been known in e.g. Denmark since the beginning of the 1980s. The production methods with wheat feeding have been investigated and further developed since then; today wheat feeding is an integrated part of the broiler production on many markets.

Cracked maize could be an alternative to wheat. Specially, in the parts of the world where they grow maize in summer and wheat in winter, own produced feed could be used at a profit.





Requirements of the Birds

A better and cheaper production is obtained if the mixture of wheat and conventional premix is right. The mixture of premix and wheat reduces the total feed costs.

The mixture corresponds much better to the requirements of the birds. The feed intake of the broilers is increased and the water intake is reduced. Protein and the amino acid contents of the feed correspond much better to the daily requirements of the broilers.

The animal well-being is improved when feeding out wheat because the broilers make much more use of the gizzard. During this process, substances are being liberated which contribute to improving the health of the birds, so in the end there is a generally lower mortality rate among broilers being fed with wheat.

Furthermore, the wheat affects the faeces of the broilers as regards consistency which again makes it easier to handle the litter.

Protein Requirement of the Broilers

The protein requirement of the broilers is decreasing with the age. In figure 1 the protein requirement of the broilers is stated as a percentage of the feed outlined in relation to the age of the broilers.

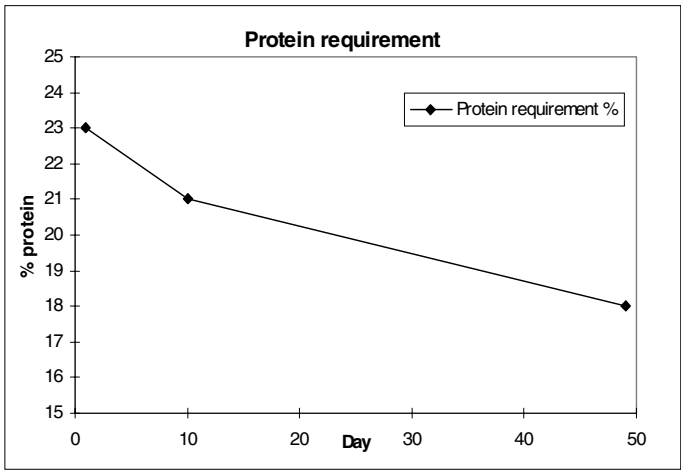


Figure 1: Protein requirement

Conventional Feeding

If the feeding method of the broilers is conventional, the feed mixture is changed three to five times during the life of a broiler. This is illustrated in figure 2. This means that in principle, it only is a few days during which the broilers are fed the optimum feed mixture. The rest of the time, the broilers are either provided too much or too little protein, among other things.

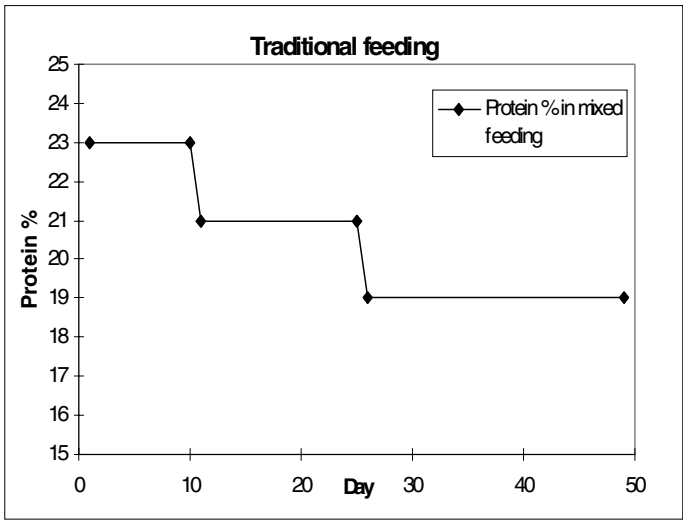


Figure 2: Traditional feeding

Wheat Feeding

By adjusting the mixture of wheat and premix on a daily basis, it is possible to meet the requirements of the broilers very accurately. In practice, premix is added to the wheat from day 7, where you start with approx. 5%. This percentage is increased up to approx. 30% on day 30 and continues at this level until the broilers are slaughtered. The proportion of wheat in the life of a broiler totals approx. 20-25% of the total feed.

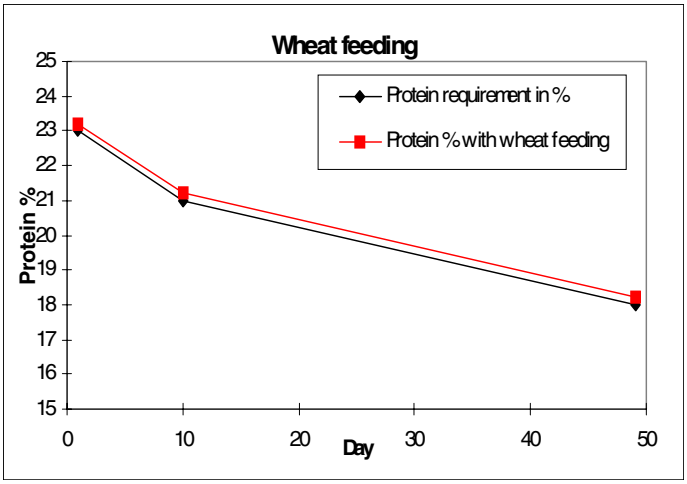


Figure 3: Wheat feeding

Mixtures with or without Wheat Addition

When choosing premix without adding wheat, the grower should change mixture min. 3 - 5 times during the life of a broiler in order to meet the protein requirement of the broiler. When mixing with wheat, the grower knows the protein contents of the supplied premix. Based on this knowledge, the grower can mix the premix with wheat so the broilers always get feed with the right protein contents.

Financial Viability

Several reports have shown that broilers do not have any problems absorbing whole wheat and also that the production results are not impaired when feeding with a certain proportion of wheat. A report from Danish Agricultural Advisory Service "Whole wheat for broilers" (2004) sums up that using 20% wheat in connection with premix does not result in variations in the slaughter weight of the broilers compared with conventional feeding.

On the assumption that the slaughter weight of the broilers is not degraded when using wheat in combination with a premix, wheat feeding will also be financially viable. The price of premix is higher than wheat. The annual saving can be calculated as follows.

Number of batches per year x number of birds in the house x the slaughter weight of the birds in kg x FCR x (price premix USD – price wheat USD) x wheat proportion = annual saving USD

In order to facilitate the demonstration, an example is calculated based on the following assumptions.

Batch per year	6.5
Number of birds in the house	25,000
Slaughter weight kg	2.0
Price premix USD/kg	0.48
Price wheat DKK/kg	0.37
Wheat proportion average %	20
FCR	1.7

6.5 x 25,000 x 2.0 x 1.7 x (0.48 – 0.37) x 0.2 = 12,155.-

The annual saving when using 20% wheat will thus amount to USD 12,000.-

The assumptions are based on Danish conditions but the figures can be adjusted so they reflect the local market conditions.

Conclusion

Many broiler producers must however make a minor investment in production equipment if this is not already available. For instance, you might have to invest in a production computer which can handle an ongoing change of minimum two components. Likewise, a feed weigher for weighing in several feed components and possibly also the purchase of an extra feed silo is required. We know from experience that the investment typically lies in the order of USD 10,000.- per house. The surplus investment will thus be earned back in approx. a year's time.