

Ostrich nutrition and management:

Keep your birds in fine feather

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An ostrich farm produces three main products: meat, skins and feathers. International demand and prices have a major impact on the profitability of such an enterprise. It is essential that breeding birds are able to successfully produce viable eggs.

Ostriches are monogastric herbivores and have an adapted digestive system with a relatively long large intestine when fully developed. The older the ostrich, the more developed its ability to digest plant material, and hence specific fibre components. The large intestine of an ostrich serves almost the same purpose as the rumen of ruminants.

Chick nutrition

For the most part, ostrich chicks are reared artificially and a quality, balanced ration, combined with meticulous management and suitable housing, are crucial for successful growth. Chick mortalities can be quite high during the first two or three months if general management is not perfect. The artificial environmental conditions can also cause stress during this period, and may lead to behavioural issues and subsequent disease conditions.

Since chicks initially ingest only small amounts of feed per day and their ability to digest fibre-rich feed must still develop, it is advised to provide different rations during the different growth periods (*Table 1*). Their feed conversion ratio (kg feed/kg live weight gain) is initially only 1,5:1, after which it gradually drops to around 4:1 during the grower phase. Therefore, this initial favourable feed conversion ratio calls

for balanced rations to promote growth and bone development, as relatively small nutritional deficiencies or imbalances have an immediate and major effect on the growth results achieved.

To achieve optimum results, chicks are phase fed – this entails separate rations containing different nutrient densities fed during specific weight intervals. The norm is to feed according to the age of the bird; however, bodyweight is more accurate at indicating which ration to provide. This way, the correct amount of nutrients is supplied in accordance with the average daily intake and growth stage.

Research shows that certain fibre fractions are only around 6% digestible at age three weeks, after which it increases to approximately 55% at four months of age, and then to around 61,5% for mature birds. The retention time of feed in the digestive tract is approximately 40 hours, affording enzymes and microbes enough time to digest the feed and efficiently utilise the nutrients for growth. The ability of the bird to digest lower-quality, fibre-rich plant material is fully developed at age five to six months (60 to 65kg bodyweight).

Maximum growth occurs from age three to six months (*Table 1*). Combined with the relatively low daily feed intake and good feed conversion ratio, this justifies high-

quality rations. These phases are mainly characterised by muscle growth, which has a direct positive impact on carcass weight, provided nutrition is optimal.

Chicks aged three months and older are often moved

onto pasture, especially lucerne, which serves as an alternative feed source. If no supplementary nutrition is provided, growth might be compromised, and birds will subsequently take longer to reach their target weight.

Clean, good quality water is a vital component of chicks' daily feeding regime and has an influence on skeletal development. Flavourants can be an important aid in stimulating feed intake, especially when behavioural abnormalities occur.

Slaughter bird nutrition

Because ostriches have an adapted digestive system and a relatively long large intestine when fully developed, they are equipped to digest fibre-rich diets. This means that cheaper roughage sources can be included in slaughter bird nutrition, provided it is done at the correct stage and in balance with other essential nutrients.

Under normal nutrition conditions, the feed conversion of birds with a bodyweight of 60kg and more increases to 8:1 and even 10:1 – hence, more feed is required for each kilogram of growth, making the finishing phase the least profitable. Excessive amounts of high-energy nutrition from around seven months of age are not as effective for carcass growth, with birds instead depositing fat that does not contribute to carcass weight.

Overweight slaughter birds have poor dressing percentages, as fat is mainly stored in the abdominal cavity and is therefore excluded from the final carcass weight. An excess of high-energy nutrition can also lead to aggressive behaviour and damaged skins.

During the finishing phase, approximately 60 to 70% hay is included

Table 1: Recommended rations and norms for bodyweight and growth at different ages.

Age (months)	Ration	Target bodyweight (kg)	Average growth (g/day)
Day old to 2	Pre-starter	14 to 16	230
3 to 4	Starter	35 to 40	365
5 to 6	Grower	60 to 65	380
7 to 11	Finish	90 to 110	270



in the ration, which significantly lowers the cost per ton of feed compared to the rations of the preceding three phases. However, the ration still needs to contain the correct balance of essential amino acids for skin development and feather growth.

Breeder bird diets

Ostrich eggs are mainly hatched artificially and a high percentage of unfertilised eggs, low hatchability and shell deaths are common. To maximise the number of

viable eggs, and thus the number of strong chicks, the correct ration must be provided. Birds breed for around eight months (June to January), after which males and females are separated for the resting period which lasts around four months (February to May).

Insufficient or substandard nutrition is one of the main reasons for a poor breeding outcome. The breeder diet fed during the breeding season must contain enough protein and amino acids as well as energy in the correct, balanced ratio, and

enough minerals and vitamins to ensure optimal egg production.

Depending on the condition of breeding birds prior to the start of the breeding season, the breeder diet can be provided as early as two to four weeks before the season commences to ensure that birds are in the best condition possible when males and females are placed together for the breeding season.

Each bird ingests approximately 2,5kg of the breeder ration per day. It is advisable

to use a more concentrated breeder ration during a cyclical, peak egg production period when females' condition will noticeably deteriorate or during abnormal, hot weather conditions when daily feed intake will decrease. This breeder ration can be fed for short periods at daily intakes of 2 to 2,5kg per bird; this will satisfy birds' requirements during peak production or when feed intake drops.

Management practices such as feather plucking and vaccinations can be performed during the resting period, as well as the carefully monitored 'slimming' of overweight birds, and body reserve restoration. It is important to provide a balanced, low-energy maintenance ration during this time, but make sure it contains essential amino acids, minerals and vitamins in sufficient quantities and in the correct ratio, at a daily intake of 2 to 2,5kg per bird. **SF**

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