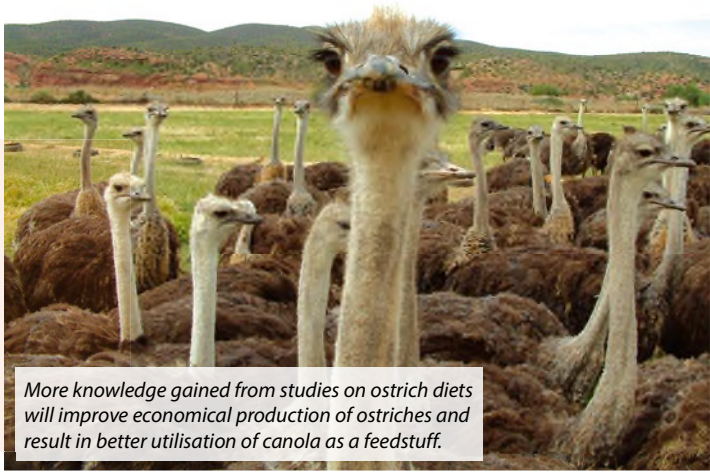
By Prof Tertius Brand

The use of canola in diets for farm animals and ostriches

Canola is the third-largest oilseed crop produced in the world, with a current increase in its cultivation in the Western Cape. Approximately 71 000ha was planted this season, and it is predicted that this figure can increase to as much as 150 000ha in future. Production amounted to 93 000 tons in 2015.



More knowledge gained from studies on ostrich diets will improve economical production of ostriches and result in better utilisation of canola as a feedstuff.

Most of the canola is used for oil production, although oilcake is a by-product that is available for animal feeds. However, a portion of the canola, in unprocessed form or as full-fat canola, is available as an animal feedstuff for livestock. Both full-fat canola (unprocessed seed) and canola oilcake (residue after the oil has been mechanically extracted) are high-quality products that can be utilised effectively by livestock.

The protein content of locally produced full-fat canola is currently around 24%, with an oil content of approximately 41% on an as-fed basis. Solvent-extracted canola oilcake, which is available in South Africa, has a protein content of 35% with an oil content of approximately 2%. Cold-pressed canola oilcake has an average protein content of 32% and an oil content of 10%. The so-called non-degradable protein percentage of canola oilcake is approximately 28%, and is comparable to the value of soya bean oilcake.

The relative economic value of full-fat canola is 90 to 95% of the value of soya bean oilcake, while that of oilcake is 70% of the value of soya bean oilcake.

Studies performed by Elsenburg and the University of Pretoria (UP) indicate that the ideal inclusion level of full-fat canola is around 12% in lamb feeds and approximately 6% in the diets of dairy cows. Canola oilcake can be included in sheep feeds at 15 and in dairy cow feeds at 12%. For chickens, it seems as if the maximum inclusion level lies between 5 and 10%.

The total metabolisable energy values for canola oilcake and full-fat canola were much higher for ostriches than for chickens.

It is interesting to note that the inclusion of full-fat canola in the diets of chickens, pigs and dairy cows can achieve a favourable fat content and milk fat profile, by increasing the level of unsaturated to saturated fatty acids.

Furthermore, it is imperative to keep in mind that the most optimal utilisation of full-fat canola can be achieved when the canola seed is mixed with the grain during the milling process.

Growth tests are being conducted at Elsenburg to determine the optimal inclusion levels of full-fat canola and canola oilcake in ostrich diets.

Canola stubble

A study conducted on canola stubble fields at Langgewens research farm, indicated that sheep grazing on canola stubble, without supplementary feed, performed better than those that grazed on wheat stubble. The study showed that canola stubble is generally well utilised by grazing animals, and with correct supplementation

Ostriches achieve better utilisation of the fibre fractions in canola than chickens.

a stocking rate of more than two ewes per hectare can be maintained for a period of three months.

Reputable scientific information regarding the use of canola oilcake, as well as full-fat canola, for ostrich feeds does not exist. Information on this topic is crucial, due to the scarcity and high costs associated with protein for animal and ostrich feeds in particular.

In a local study at Elsenburg, an experiment was conducted to establish the nutritional value and utilisation of these two potential alternative protein sources for ostriches. It was found that the energy values of both of these sources – total metabolisable energy values of 13,76 and 22,50MJ/kg feed, respectively for canola oilcake and full-fat canola – were much higher for ostriches than for chickens – 7,81 and 16,65MJ/kg feed, respectively.

Inclusion in ostrich diets

The better utilisation by ostriches was as a result of the additional utilisation of approximately 32% of the fibre fractions (hemicellulose and cellulose) in the sources which cannot be utilised by chickens. Growth studies are currently being conducted at Elsenburg to determine the optimal inclusion levels of both full-fat canola and canola oilcake in ostrich diets.

Results from these studies will contribute to the currently limited knowledge regarding the nutritional value of these raw materials for ostriches. This knowledge can then be used to formulate more accurate diets for ostriches, which will improve their economical production and create an alternative market for full-fat canola and canola oilcake in South Africa.

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