

OBSTACLES EMERGING OSTRICH FARMERS FACE IN PRODUCING QUALITY LEATHER FOR THE EXPORT MARKET IN AN EVER CHANGING ENVIRONMENT

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INTRODUCTION

- Ostrich leather characterized by nodules.
- Presence of these nodules is what gives ostrich leather its uniqueness.
- Determining the value.
- Ostrich skins classified according to size (A, B, C or D).
- Skin quality grading (i.e. 1st, 2nd, 3rd, 4th or 5th grade).

- Grading of ostrich skins has undergone drastic changes over the last few decades due to changes in the ostrich production industry.
- Today tanned ostrich leather should be free of damage.
- Follicles or feather buds should be well-defined with a rounded shape.
- The leather should be of sufficient strength.
- Evaluation and grading of skins is mainly a subjective procedure.

- Ostriches previously slaughtered at approximately 14 months of age.
- Skin damage increased with an increase in age.
- This results in severe downgrading of skins between 12 and 14 months of age.

- From 2000 onwards producers gradually started slaughtering younger ostriches.
- Trend was driven by increasing production costs, mainly due to higher feed and pharmaceutical costs.
- Development of the ostrich meat contributed to this trend.
- Slaughtering of these younger ostriches resulted in large volumes of skins with inferior follicle development.

- Ostrich leather quality is therefore currently determined by both its quantitative (i.e. skin yield) and qualitative (i.e. lack of defects and acceptable nodule development) characteristics. Current grading criteria therefore include skin yield, the presence of visible defects and nodule development.

MATERIAL AND METHODS

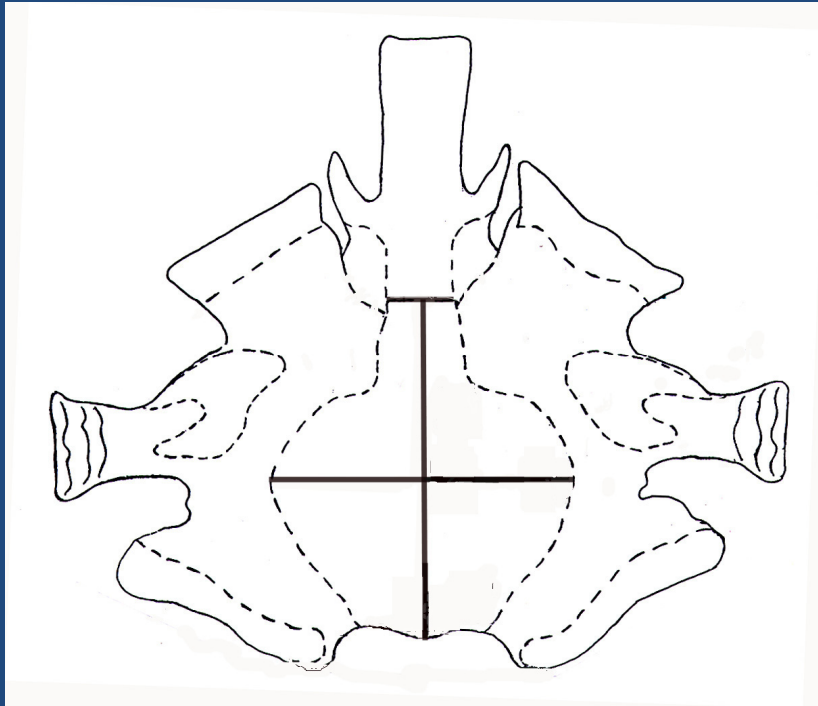
- A case study was undertaken of a resource of ~220 000 skins of birds slaughtered over a period of four years (July 2002 – June 2006) from 176 producers producing slaughter birds for the Mosstrich Group.

- The bulk (70%) of the slaughter birds were sourced from the districts of Caledon, Bredasdorp, Swellendam, Heidelberg, Riversdal, Albertinia and Mossel Bay, while the rest came from the Oudtshoorn and Calitzdorp districts in the Klein Karoo region.

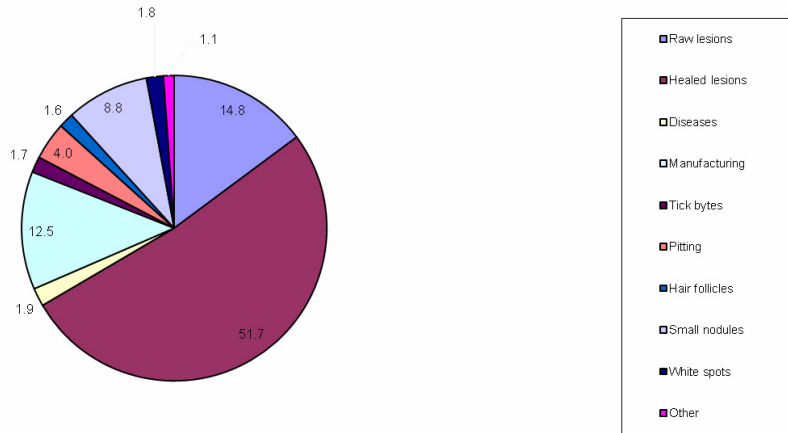
- At a weight of approximately 55 kg the chicks are moved to farms where they are finished until slaughtered at an age between 11 and 14 months.
- Birds in the southern Cape kept to an age of 14 months.
- Birds obtained from the Klein Karoo region are slaughtered at 11 to 12 months.
- Birds in the Klein Karoo are mostly kept in feedlots.
- Birds in the Southern Cape mostly browse planted pastures.

- Skin sizes are grouped as follows:
- 7.1 A+ size = 156+ square decimetres.
- 7.2 A size = 130 to 155 square decimetres.
- 7.3 B size = 120 to 129 square decimetres.
- 7.4 C size = 100 to 119 square decimetres.
- 7.5 D size = 80 to 99 square decimetres.

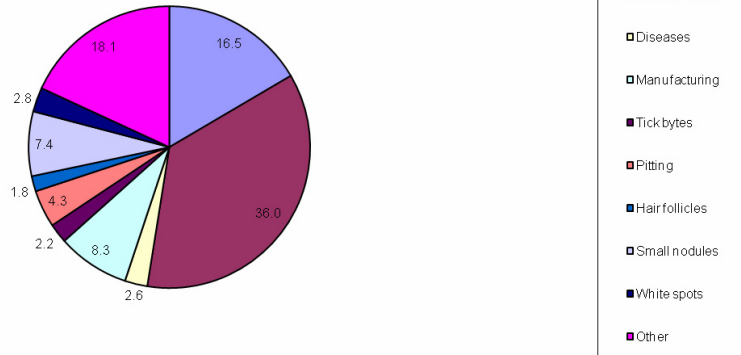
Skins are graded into five categories according to the following norms:



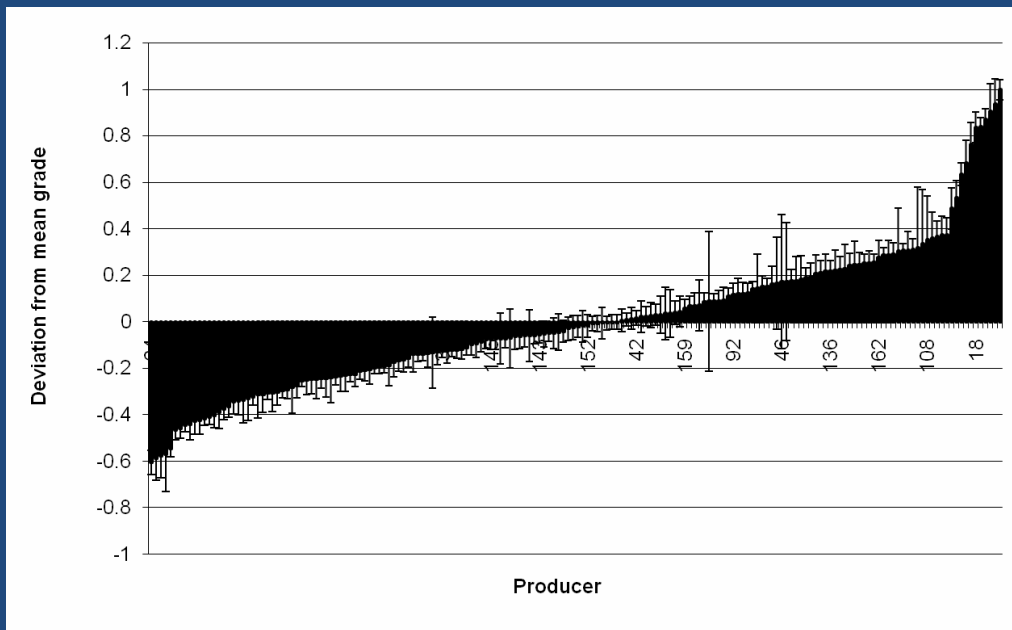
- Grading results were analysed by a mixed model, involving the fixed effects of year and month, the year by month interaction and the random effect of producer. ASREML software (Gilmour et al., 1999) was used for this purpose.



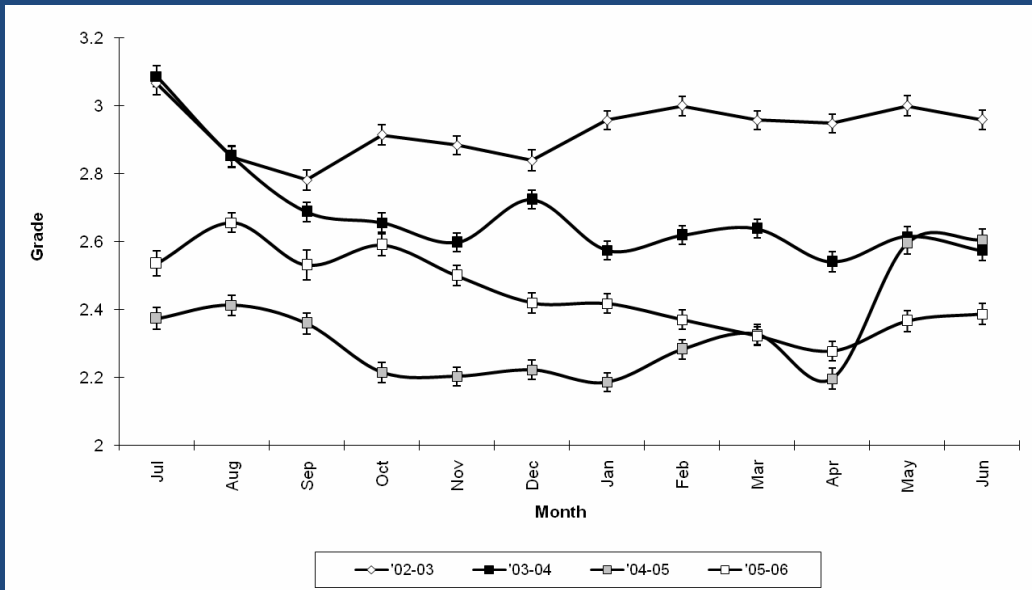
- **Figure 1. Primary causes for the downgrading of ostrich skins. Individual slices of the pie are annotated with the percentage of skins that were downgraded for that specific reason.**



- Figure 2. Secondary causes for the downgrading of ostrich skins. Individual slices of the pie are annotated with the percentage of skins that were downgraded for that specific reason.



- **Figure 3. Solutions for 176 producers for average skin grading over a period of 4 years, ranked from the best to the worst. Standard errors are depicted by vertical lines on the solutions of individual producers.**



- Figure 4. The interaction between month and production year for average skin grade during the production years of 2002-03 to 2005-06. Standard errors are depicted by vertical lines around the individual means.

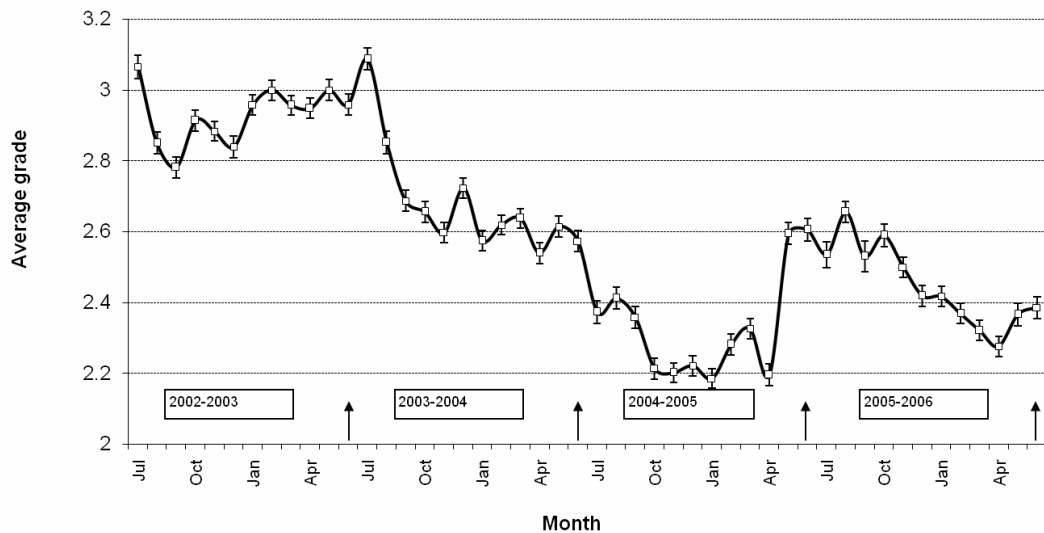


Figure 5. Predicted values for months for the entire experimental period. Standard errors are depicted by vertical lines around the individual means. Arrows indicate start/end of production seasons.

The average monthly grading was not related to the number of skins processed per month ($R^2 < 0.01$; Figure 6). The lack of a relationship between number of skins and average grading do not support the contention that grading becomes more strict when the number of skins on offer are high, or more relaxed when skins are in short supply.

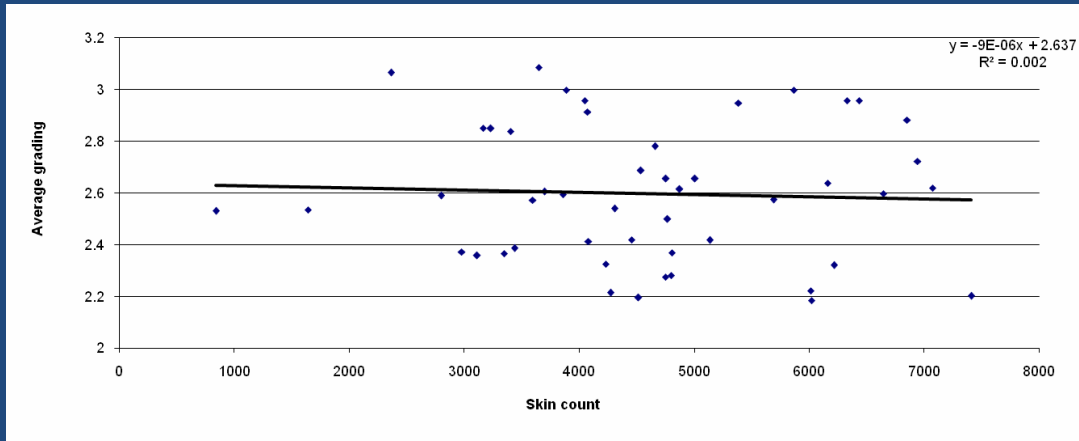


Figure 6. The relationship between average skin grading and the number of skins produced on a monthly basis.

DISCUSSION

- Damage accounted for the vast majority of cases where skins are downgraded.
- Either raw or healed lesions were the major primary and secondary causes of skins being downgraded.
- The high level of damage due to raw or healed wounds can be attributed to the fact that ostriches are maintained in free-range production systems in the Southern Cape.
- Previous results suggest that skin damage at an early stage was persistent to slaughter age.
- Scratch marks are probably the result of toenail inflicted damage at a young age.
- Kick marks probably result from toenail damage later in life.
- Removal of toenails effectively reduces both scratch and kick marks at slaughter age up to 50% in skin grading.
- Other environmental structures, such as fences, vegetation or buildings can also contribute towards skin damage.

- Concerns were raised by the graders of ostrich skins that the incidence of tick marks, white spots and pitting are on the increase.
- Aetiology of pitting and white spots is poorly understood at present requires further study.
- Hair follicles and small nodules were shown to have a genetic basis.
- Age also plays an important role pertaining to nodule shape and nodule size.

- Marked variation in skin grading were reported between producers.
- Suggested that some farmers possess better farming skills than others.

- Overall grading did not show consistent seasonal trends when assessed across years. However, a highly significant interaction between year and month were evident from the data.
- Gradual improvement in skin grading from June 2003 to April 2005.
- Ostrich production in the southern Cape relies heavily on the availability of pastures as an affordable source of roughage.
- The deterioration in skin grading during the autumn and winter of 2005 was associated with farmers maintaining slaughter birds for a longer period in the hope of being able to increase the income from the skins by slaughtering heavier birds with larger skins.

CONCLUSIONS

- It is evident that skin grading is complex, and many factors contributed to the realisation of good grades for ostrich skins.
- It is of utmost importance that emerging ostrich producers attempt to minimize the risk of skin damage by following specific production systems for slaughter birds. The findings will also help to refute beliefs that producers may have had towards the industry as pertaining to the subjective grading of skins and thus the income awarded their product.