

## SOME OBSERVATIONS ON THE EFFECT OF GRASS-SEED PENETRATION ON THE GROWTH AND CARCASE QUALITY OF WEANER LAMBS

P. le Roux

Matopos Research Station, Private Bag K 5137, Bulawayo

**OPSOMMING:** SEKERE OBSERVASIES OP DIE INVLOED VAN GRASSAADINDRINGING OP GROEI EN KARKAS KWALITEIT VAN SPEENLAMMERS

Rhodesië kan gerieflikheidshalwe in drie streke verdeel word wat nou saamval met die jaarlikse reënval. Die hoë reënvalstreek (760 mm) het 'n grasveld wat hoofsaaklik uit *Hyparrhenia*-veld bestaan maar *Heteropogon contortus* kom voor in sekere lokaliteite. Die matige reënvalstreek (500 tot 760 mm) het 'n grasveld wat hoofsaaklik uit *Heteropogon contortus* bestaan. Die laë reënvalstreek (250 tot 500 mm) bestaan uit gemengde grasveld (Kaart 1). Al drie streke is bebos maar onbeboste gedeeltes kom in die eersgenoemde twee streke voor. Grassaad van die spesie *H. contortus* dring deur die vel van wolskaape en indien in groot hoeveelhede aanwesig, is die karkas onaantreklik. Abscese kan voorkom en alvorens 'n karkas gegradeer word, word alle grassade verwyder. Afhangende van die hoeveelheid grassade teenwoordig kan 'n karkas nietemin afgegradeer word (Tabel 1), as 'n direkte gevolg van die verwydering van die grassade. Uit die resultate van hierdie ondersoek is dit duidelik dat grassade groei van lammers nadelig beïnvloed het; slegs 25 grassade wat die vel deurdring het, het die daaglikse gewigstoename van speenlammers met 44% laat daal (Fig. 1). Dit is ook gevind dat die grassade die uitslagpersentasie nadelig beïnvloed (Fig. 2). Die vel van diere wat deur grassaadindringing benadeel is, is beskadig want in die looiproses word die sade verwyder en klein gaatjies kan gesien word in die eindproduk.

### SUMMARY

Approximately 50% of Rhodesia is covered by veld types of which *Heteropogon contortus* constitutes a significant proportion of the grazing. If sheep other than the smooth coated indigenous types are introduced in these areas, the seeds of *H. contortus*, through hygroscopic action, penetrate the skin and, if present in any numbers, may render the carcase unattractive and cause festering. The dressing-out percentage is also lowered, and a carcase with a great number of grass seeds may be downgraded if excessively trimmed. The value of the skin is also affected because of damage by grass seeds. Twenty-five grass seeds which have penetrated the skin are sufficient to reduce the daily gain of a lamb by 44 per cent from weaning in March to slaughter in June.

It is perhaps an unfortunate fact that the majority of the country's dominant grasses have sharp, barbed seeds which cling to the coats of sheep and, through hygroscopic action, penetrate the skin into the flesh. As a result the wool is not only lowered in value but the meat is spoiled for human consumption. Woolled sheep do not do well in areas where *Heteropogon contortus* constitutes a major proportion of the grazing. Rhodesia may conveniently be divided into three main regions. (Fig 1). For a more detailed description of the various farming areas the reader is referred to a publication by Vincent, Thomas & Staples (1961). The darkly shaded region in the accompanying map generally has a rainfall of over 760 mm annually and, with the exception of small areas, is fairly well wooded. The main grass species are tall *Hyparrhenia* intermingled in some localities with other species. *Heteropogon contortus* may also occur, but especially in areas where the annual rainfall approaches 760 mm.

Over the lightly shaded region the rainfall varies between 500 and 760 mm with its greatest concentration during the summer months. In this well wooded region *Heteropogon contortus* predominates, but a certain amount of *Hyparrhenia* and *Eragrostis* spp. are also present. Treeless areas also occur in this region. The unshaded portion represents the region with an annual summer rainfall of less than 500 mm and droughts are common. The grasses in this region consist mainly of *Eragrostis*, *Aristida* and *Cenchrus* species, but *Heteropogon* also occurs where

the rainfall is sufficiently high. This region is also well wooded.

In all regions the production of grass seeds is strongly seasonal and the quantity of seeds produced

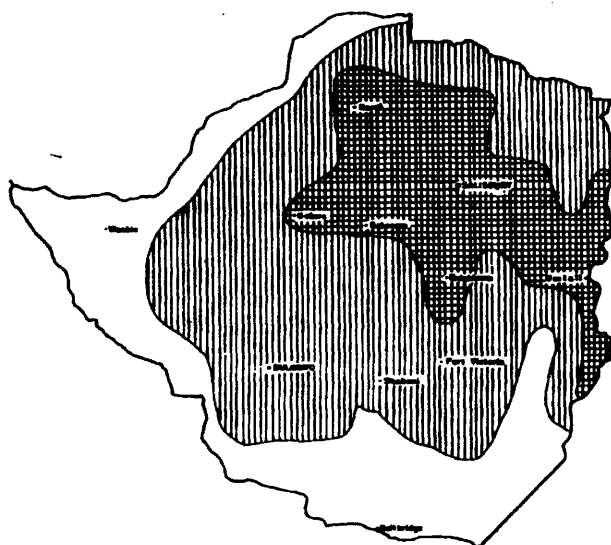


Fig. 1. The high, medium and low rainfall regions of Rhodesia

**Table 1**

*Number of carcasses down graded due to excessive trimming to remove grass seeds  
(Cold Storage Commission Abattoirs)\**

	Umtali	Salisbury	Bulawayo	Fort Victoria	Total
Number slaughtered	3 027	7 026	25 320	6 613	41 986
Number down graded	39	497	763	36	1 335
Percentage down graded	1,3	7,1	3,0	0,5	3,17

\* Data collected between March 1971 and August 1972, and supplied by the Chief of Animal Production

No reliable figures distinguishing between wool-bearing and smooth-coated types are available, but it may safely be accepted that the former is in the minority. The number of sheep down-graded may assume a different and significant importance when only the wool-bearing types are considered and the numbers down-graded are expressed as a percentage of those sheep likely to be affected by grass seeds.

In Table 2 evidence is advanced to show that the indigenous types are more resistant to grass seed penetration than exotic types or their crosses. Blackhead Persian lambs had, on average, one grass seed per carcass as compared to the average of 36 found on the carcasses of the Dorper-type lambs. The skins of Blackhead Persians were, on average, 27 per cent heavier than the skins of the Dorper types and although no actual measurement of the thickness of the skin was taken, the skins of the Blackhead Persians were thicker than those of the Dorper types, a fact well known to the leather industry.

*Wool quality and skin damage*

In seasons when grass seeds are plentiful, considerable difficulty is experienced in shearing sheep because of the woody nature of the seed. Because of the presence of grass seeds the value of the clip is reduced to uneconomic levels. The skins of sheep, generally considered to be a valuable part of the fifth quarter, are also damaged by the seeds.

**Table 2**

*The average number of grass seeds per carcass and the average mass of the skins at slaughter of Dorper-type and Blackhead Persian castrated male lambs*

	Dorper-type males	Blackhead Persian males
Average number of grass seeds per carcass	36	1
Average mass of fresh skins (kg)	1,99	2,55

When the skins are cured the grass seeds in the skin are removed leaving tiny holes. The damage so caused considerably reduces the value of the product (plate 2).

*The effect of grass seeds on the growth and dressing-out percentage of lambs*

The lambs were weaned in March each year. This date also coincides with the commencement of the ripening of the grass seeds. From birth to weaning no interference from grass seeds is experienced, but from weaning to slaughter in June, sheep infested with grass seeds have a reduced growth and their movement suggested considerable discomfort.

The following relationship was established between growth rate of lambs between weaning and slaughter, and of the number of grass seeds on the carcass at slaughter (Figure 1):-



**Plate 2** *Festering caused by grass seeds*

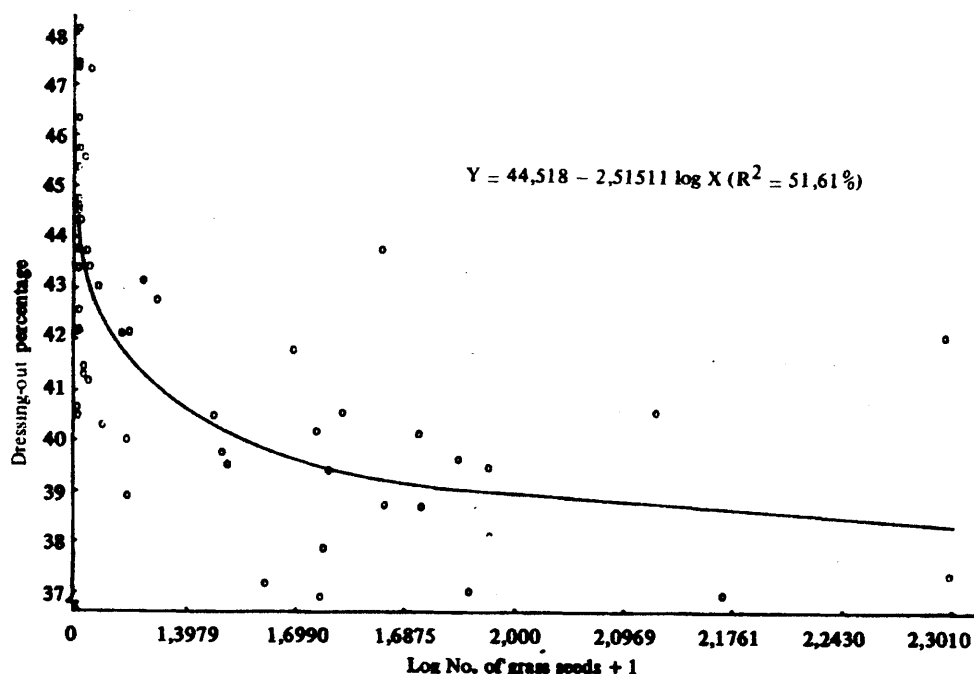


Fig. 3. The relationship between number of grass-seeds found on carcass and the dressing-out percentage

Table 3

*Dressing-out percentage and carcass grades of eight month old Dorper-type castrated male lambs*

Carcass grade .....	Super lamb*	Choice lamb	L2	L3	L4
Number of carcasses	3	40	25	3	5
Dressing out percentage	44,2	42,69	41,34	39,22	37,89

\*For definition of grades see Rhodesia Government Notice No. 240 of 1972.

large areas for hay and then grazed the sheep on these areas, or pen-fattened the slaughter stock during the period the grass seeds were troublesome. Crossbreeding has also received attention. The indigenous types are upgraded to improved the carcass but when wool becomes a problem the sheep are bred back to the smooth-coated types. All these measures are of a temporary nature and the only

permanent solution to the problem is a programme of breeding smooth-coated mutton-type sheep.

#### Acknowledgements

I wish to express my sincere thanks to Mr M.F. Franklin of the Biometrics Branch for the calculation of the regression equations and to Mr H.K. Ward for his comments and suggestions.

#### References

- JARVIS, E.M., 1905. The selection and care of animals for breeding purposes. *Rhod. agric. J.* 3: 55-60.
- MACKENZIE, H.L., 1958. A comparison of the value of Blackhead Persian, Dorset Horn and Dorset Horn x Blackhead Persian rams as sires of progeny from Blackhead Persian ewes in the medium rainfall areas of Southern Rhodesia. *Rhod. agric. J.* 54: 33-55.
- VINCENT, V., THOMAS, R.G. & STAPLES, R.R., 1961. *An agricultural survey of Southern Rhodesia, Part I.* Government Printer, Salisbury.