# Economical analysis of sheep meat production systems in tropical and temperate pastures of the southern region of Brazil

C .S .Barros[1] ,A .L .G .Monteiro[2] ,C .H .E .C .Poli[3] ,J .R .Dittrich[2] ,M .A .M .Fernandes[4]
[1] UFPR ,E-mail : carinaveter@ gmail .com ; [2] UFPR ; [3] UFRGS ; [4] UFPR

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**Introduction** The objectives of this study were to identify sheep meat production systems with less production cost and high profitability and analyze economic return of lamb finishing systems in tropical and temperate pastures in South of Brazil .

**Materials and methods** The experiment was conducted in two stages in Southern Brazil ,during 2003 to 2006 .Stage 1 (field stage) : experiments conducted at LAPOC-UFPR to compare finishing systems for slaughter lambs weighing 32 kg .Systems : lambs weaned at 60 days old and finished on tropical pasture ; lambs not weaned but left on pastures ; lambs not weaned and left on pastures with creep feeding supplement (1% BW ,daily) .Lambs were also weaned at 42 days old kept on ryegrass pasture , without supplementation or with 1 ; 2% BW/day and *ad libitum* supplementation .The supplement was concentrate 20% CP on DM basis ,the same one used in creep feeding .The tropical pasture was *Cynodon* sp .cv .Tifton 85 and temperate pasture was *Lolium multiflorum* .Stage 2 (economical analysis) : a flock of 150 ewes was used for economic evaluations .The fixed cost (depreciation ,interests of the invested capital) ,variable cost (materials ,pasture ,labor ,feeding supplementation ,transport , slaughter ,tax ,conservation ,and general expenses) ,total production cost (fixed+variable) ,and income were calculated .The profitability was : net margin/ (incomen-variable cost+depreciation) x 100 .The calculation was based on Lopes & Magalhães (2005) .

**Results and discussion** The variable cost was greater that fixed in all the systems in all years .The finishing systems with supplementation on pastures demanded more initial investment and resulted in higher production cost due the concentrate cost . The animal sales for reproduction and culling were important to total income .The economic result (income-total cost) were positive on the systems where lambs were kept with mother with or without creep feeding in tropical and temperate pastures , and lambs weaned at 45 days old finished on ryegrass pasture with *ad libitum* supplementation .The *ad libitum* system resulted in lower total ration intake than the 2% one due to shorter finishing time to reach slaughter weight .Lambs weaned with no supplement and with 1% of daily supplementation resulted in higher mortality ,lower carcass yield ,and longer finishing time which resulted in lower income and net margin .

**Table 1** *Total production cost (US $/ha) ,total income (US $/ha) and profitability (%) of sheep production system .*

| Production systems | Total cost | Total income | Profitability |
|---|---|---|---|
| Lambs weaned at 42 days old finished on ryegrass pasture | 2061 .50 | 1719 .40 | -0 .4 |
| Lambs weaned at 42 days old kept on ryegrass with 1% BW/day supplementation | 2137 .91 | 1939 .20 | 7 .0 |
| Lambs weaned at 42 days old kept on ryegrass with 2% BW/day supplementation | 2259 .44 | 2238 .44 | 14 .0 |
| Lambs weaned at 42 days old kept on ryegrass with *ad libitum* supplementation | 2246 .10 | 2330 .65 | 17 .9 |
| Lambs kept on ryegrass with *creep feeding* (1% BW/day) | 2291 .32 | 2329 .14 | 16 .5 |
| Lambs kept on ryegrass pasture with mother | 2119 .61 | 2279 .31 | 21 .7 |
| Lambs weaned 60 days old finished on Tifton 85 | 2073 .54 | 1980 .03 | 11 .2 |
| Lambs kept on Tifton 85 with *creep feeding* (1% BW/day) | 2249 .59 | 2292 .49 | 16 .3 |
| Lambs kept on Tifton 85 with mother | 2093 .22 | 2278 .79 | 22 .0 |

Supplementation was concentrate 20% CP on DM ,the same of creep feeding .

**Conclusions** The aspects of higher input in the total production cost of all sheep production systems were labor and feeding .Less production cost was observed with weaned lambs finished on pastures .However ,this system produced less profitability due higher mortality and lower carcass yield .Lambs kept with mother on tropical and temperate pasture were very interesting options for South Brazilian farmers ,because of good economical return .Systems with weaned lambs on ryegrass ,*ad libitum* daily ration supplements produceded high profitability and was economically practicable .

**References**

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