Seasonal Faecal Production Potential of Livestock Grazing Heterogenous Natural Range and Cropfields of Semi-Arid Nigeria

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Key words : grazing livestock ,faecal production ,semi-arid

Introduction In semi-arid Nigeria ,arable crop farming and livestock rearing are the main occupations of the people . The large ruminant livestock population in the area could therefore be exploited to encourage organic farming . This research was conducted to investigate the faecal production of grazing livestock during different seasons .

Materials and methods This experiment was conducted between July 2002 and June 2003 in Zamfara reserve (6°45′-7°10′E and 12°00′-13°10′N) ,north-western Nigeria . Indigenous breeds of cattle ,sheep and goats were used for the study . They consisted of 36 male animals i .e . 12 bulls ,12 rams and 12 castrated bucks . The animals were grazed on the natural pasture in the reserve . After every five weeks ,beginning July 2002 ,animals were fitted with harness and faecal bags . Faecal samples were collected during five days ,after an adaptation period of one week ,which gave a total of 600 collections per species . Each day faeces were collected at 06 .00 ,12 .00 and 18 .00 hours . Total daily collection per animal was bulked and weighed . Sub samples (10%) were oven-dried and weighed . Data were analysed with ANOVA and ,where there were significant differences between treatment means ,New Duncan Multiple Range Test method was used for comparison (SAS 1988) .

Results and discussion The mean daily faecal production of cattle ,sheep and goats during the course of the experiment are shown in Figure 1 . Faecal production was highest in March (LDS) and lowest in August (LRS) for both cattle and sheep . Goats produced their highest amount of dry faeces in May (ERS) and lowest in August (LRS) . The seasonality of minimun and maximum production of fresh faeces were similar for all livestock types except for goats ,which showed maximum production in March (late dry season (LDS) . Both fresh and dry faeces production differed significantly ($p<0.05$) between the periods .This contrasted with the report of Powell and Williams (1993)-more faecal output was recorded during the dry season in the present study .

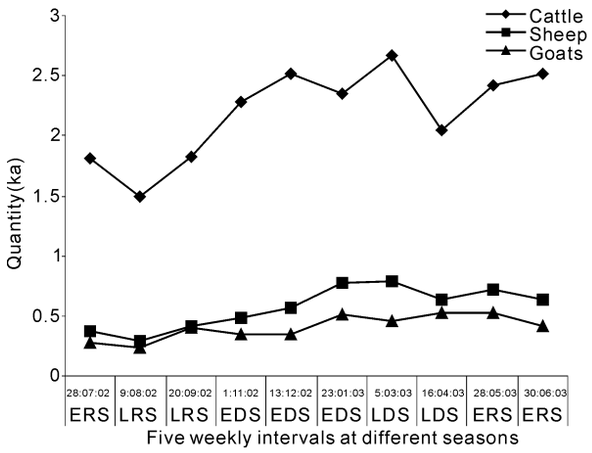

Figure 1 *Mean daily faecal output (dry weight) of cattle ,sheep and goats through different seasons .*

Conclusion This study indicates that grazing livestock in the semi-arid region produce more faeces in the dry season .

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