

## TECHNICAL NOTE

## NON-CLINICAL ACCUMULATION OF POLYTHENE IN THE RUMEN OF A WEST AFRICAN DWARF GOAT

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The West African Dwarf Goat (WADG) is indigenous to the warm and humid regions of Nigeria. On free range, the goats choose from a wide range of grasses and legumes, which during the dry season, may be low in nutrients. These goats are also frequently seen scavenging on the many indiscriminately located refuse dumps in the villages and small towns. This paper reports an accidental finding of a mass of polythene material in the rumen of a WADG in Uyo, Akwa Ibom State, Nigeria.

A female goat, aged about a year, which was one of 16 WADG that were used for a feeding experiment, at the Teaching and Research farm of the Department of Animal Science University of Uyo Akwa Ibom State, was incidentally found to have ingested a non-degradable material. The goats were originally purchased from farmers from different parts of the State, and stall fed, *ad libitum*, a mixture of *Panicum maximum* and *Gliricidia sepium*, supplemented with Brewers' spent grains for 8 weeks. Eight of the goats were slaughtered at the end of the experiment and used for carcass analysis.

At slaughter and skinning, a conspicuous, localised swelling was observed at the abdominal region of the carcass of one of the goats (T<sub>2</sub> R<sub>4</sub>) (Fig 1). On evisceration, it was found that this bulge was the result of an accumulation of a indigestible mass of material (Fig 2) that weighed 1.0kg after washing, rinsing and squeezing out as much water as possible by hand.

This material which appeared like an intertwined mass of rope, on close examination turned out to have been primarily composed of polythene (nylon sheets). The performance attributes of the affected goat (T<sub>2</sub> R<sub>4</sub>) in terms of body condition score<sup>2</sup>, carcass

yield and weight gain was comparatively slightly lower than that of one of the unaffected goat (T<sub>2</sub> R<sub>1</sub>) in the same treatment group. Both were fed *Panicum maximum* (*ad libitum*) and 200g dried brewers spent grains (Table 1).

Bizarre appetite, which might lead to the consumption of abnormal objects (Pica) may be triggered off by a variety of causes, prominent among which is nutritional imbalance<sup>3</sup>. It is likely that small ruminants feeding on natural grassland, especially during the dry season, may become malnourished, and therefore prone to pica. Since goats on free range are often not supplemented with minerals, especially sodium,<sup>1</sup> availability of salt-tainted materials in the environment, and the exposure of goats to such environments may facilitate the crave for abnormal object.

Biologically non-degradable, space-occupying materials reduce the effective storage and fermentation chamber of the rumen, and may also reduce the animal's ability to effectively utilize feeds<sup>11</sup>. This may be particularly true with respect to the feed dry matter intake by the animal and subsequent availability of total digestible nutrients to the animal. This might explain the lower performance attributes of the affected goat (Table 1).

This incidental finding is of great importance in the sense that it has shown the possibility of the WADG to ingest abnormal objects in its natural environment. It has also presented the goat as a good tracer of environmental pollution. Field diagnosis of gastro intestinal conditions of goats should also, in the face of this level of environmental contamination, consider nylon foreign body of the rumen as a probable differential.



**Table 1: Performance of Foreign body affected (T<sub>2</sub> R<sub>4</sub>) and unaffected (T<sub>2</sub> R<sub>1</sub>) WADG**

| Animal                        | Body Condition Score | Carcass Yield (%) | Weight Gain (kg) | Live Weight | Dressed Weight (kg) |
|-------------------------------|----------------------|-------------------|------------------|-------------|---------------------|
| T <sub>2</sub> R <sub>4</sub> | 2.4                  | 37.5              | 0.5              | 12.0        | 4.5                 |
| T <sub>2</sub> R <sub>1</sub> | 3                    | 42.5              | 0.6              | 9.4         | 4.0                 |

\* Body Condition Score was on a scale of 1 (very thin) to 5 (Obese)<sup>2</sup>



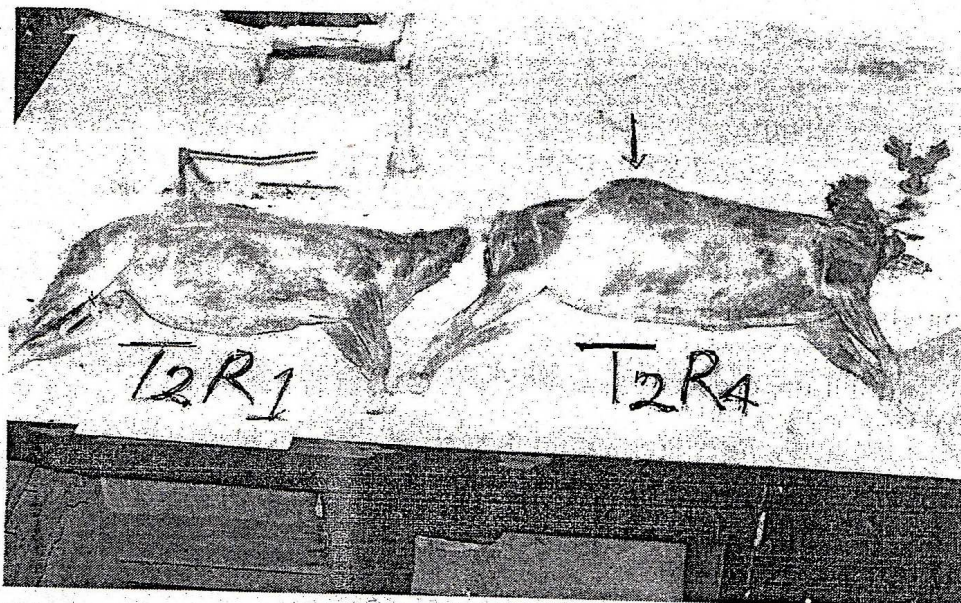


Fig 1: A BULGE ON THE ABDOMEN OF THE CARCASS (ARROW)

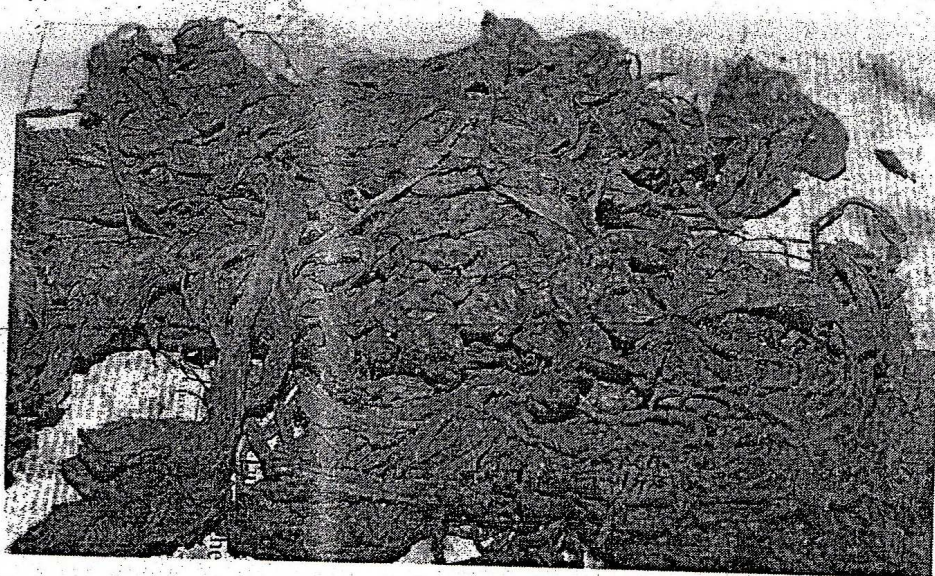


Fig 2: MASS OF POLYTHENE MATERIAL



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