# TRADITIONAL METHODS OF PREGNANCY DETECTION IN EWE AT HADEJIA LOCAL GOVERNMENT AREA, JIGAWA STATE

[€]Umar, A.M., αMuhammad, B.F., [¥]Mohammed, A., [€]Muhammad, Y., [€]Kazaure, L.A., [µ]Tamburawa, M.S. and [β]Madigawa, I.L.

[€]Department of Animal Health and Production, College of Agriculture, Binyaminu Usman Polytechnic, Hadejia, Jigawa State. αDepartment of Animal Science, Bayero University, Kano. [¥]Department of Animal Health and Production, Federal Polytechnic Bauchi. [µ] Department of Animal Science, Kano University of Science and Technology, Wudil [β]Department of Animal Health and Production, Audu Bako College of Agriculture, Dambatta, Kano.

Corresponding author: auw.umar@gmail.com +2348164727548 and +2348027374654

**Abstract**

The study seeks to characterise socio-economics of sheep farmers and identify the traditional methods of pregnancy detection in ewe at Hadejia Local Government Area, Jigawa State. Seventy (70) respondents were selected using simple sampling procedure and analysed with descriptive statistics. Majority (41.4%) of the respondents were between 21-30 years, male (57.1%), married (51.4%), had tertiary education (52.9%) and farmers (58.6%). Most of the farmers kept sheep and goat (50.0%), had 6-10 sheep (47.1%) with 6-10 years experience (40.0%) in small ruminant production and managed both ram and ewe (87.1%). The most accurate (50.0%) traditional method of detecting pregnancy in ewe is through mucous discharge from the vulva. It is recommended that further research on traditional method of pregnancy detection in ewe should be carried out.

**Key words:** Ewe, Socio-economic characteristics, Pregnancy, Detection and Traditional Methods

## Introduction

Various studies highlighted the importance of small ruminant production, (as opposed to large ruminant and non-ruminant production) not only for ensuring food security in rural regions, but also for helping to reduce poverty and overall household wellbeing (Peacock, 2005; Dossa *et al*., 2007). The emphasis is because sheep (*Ovis aries*) and goat (*Capra hircus*) are more efficient in converting non-grain feed into quality meat compared with beef, pork and poultry (Wilson, 1991). In subsistence agricultural economies, competition for productive inputs is less for small ruminants than for other livestock such as pigs, cattle and poultry (Terril, 1985). Capital investment in housing (such as iron sheets and wood) is lower for sheep production (Devendra, 1985). The smaller size of sheep also makes them more suitable for home consumption among poor households, thereby helping to improve the nutrition, animal protein requirements and food security situation of rural households (Oluwatayo and Oluwatayo, 2012).

Early diagnosis of pregnancy in livestock is useful to make culling, breeding, clinical and research purposes. Traditional methods for pregnancy diagnosis in small ruminants are through external abdomen and noting udder enlargement. However, these methods are applicable only in late pregnancy. The technique of trans-abdominal method has been used with great accuracy as a means of pregnancy diagnosis and estimation of fetal numbers in sheep (Vautial *et al.*, 2004), goat deer and reindeer (Martinez *et al.*, 2008), however information in this regard is meager in sheep and goat in developing countries. Estrus or heat is the period of time when the ewe and doe are sexually receptive to the ram and buck, respectively. Sheep and goat are seasonally polyestrous and short day breeders (Booth *et al.*, 2000). The main aim of the study was to identify the traditional methods of pregnancy detection in ewe at Hadejia Local Government Area of Jigawa state.

## Materials and Methods

The study was conducted in Hadejia Local Government Area, Jigawa State. Hadejia emirate comprises of Hadejia, Kafin-Hausa, Mallam-Madori, Birniwa, Guri, Kirikasamma, Kaugama and Auyo Local Government Areas. It covers an area of 6,580 km$^2$ and located in the north eastern part of Jigawa State. It lies between 9$^0$37$^{'}$E and 10$^0$35$^{'}$E longitude and 11$^0$57$^{'}$N and 13$^0$02$^{'}$N latitude. Seven (7) wards were selected using simple random technique and in each of the ward, ten (10) respondents were selected giving a total of seventy (70) respondents. The wards selected include Yankoli, Kasuwar kuda, Kasuwar kofa, Rumfa, Atafi, Gagulmari and Matsaro. Ten (10) respondents sampled from the seven (7) wards were served with a

structured questionnaire each, thus, seventy (70) respondents were assessed. The data collected were analyzed using simple descriptive statistics.

**Results**

Majority (41.4%) of the respondents were between 21-30 years, male (57.1%), married (51.4%), had tertiary education (52.9%) and farmers (58.6%). Most of the farmers kept sheep and goat (50.0%), had 6-10 sheep (47.1%) with 6-10 years experience (40.0%) in small ruminant production and managed both ram and ewe (87.1%). The most accurate (50.0%) traditional method of detecting pregnancy in ewe is through mucous discharge from the vulva.

Table 1: Socio-Economic Parameters of the Respondents

| Parameter | Frequency | Parameter | Frequency |
|---|---|---|---|
| Age (Years) | | Education Status | |
| 10-20 | 24 (34.3) | Primary | 01 (01.4) |
| 21-30 | 29(41.4) | Secondary | 19 (27.1) |
| 31-40 | 08(11.4) | Tertiary | 37(52.9) |
| 41-50 | 04(05.7) | Arabic | 13(18.6) |
| >51 | 05 (07.2) | **Total** | **70(100.0)** |
| **Total** | **70(100.0)** | Occupation | |
| Sex | | Civil Servant | 17(24.3) |
| Male | 40(57.1) | Farming | 41(58.6) |
| Female | 30(42.9) | Trading | 12(17.1) |
| **Total** | **70(100.0)** | **Total** | **70(100.0)** |
| Marital Status | | | |
| Single | 25(35.7) | | |
| Divorced | 09(12.9) | | |
| Married | 36(51.4) | | |
| **Total** | **70(100.0)** | | |

Figures in the parenthesis are the percentages

**Discussion**

The result showed that male farmers were dominant (57.1%). The finding implies that men are the owners of small ruminants in the household. Another reason may be attributed to societal customs and norms in Sub-Saharan African Countries where males control household productive assets (Faizal and Kwasi, 2014). The large proportion of male farmers is very crucial for transferring and adoptions of technology since men are mostly the decision-makers in most African Societies (Turkson and Naandam, 2006).

Table 2: Categories of animal reared

| Parameter | Frequency | Percentage |
|---|---|---|
| Sheep | 12 | 17.1 |
| Goat | 10 | 14.2 |
| Cattle | 09 | 12.9 |
| Sheep and Goat | 35 | 50.0 |
| Sheep and Cattle | 02 | 2.9 |
| All of the above | 02 | 2.9 |
| **Total** | **70** | **100.0** |

Table 3: Number of sheep owned per respondent

| Parameter | Frequency | Percentage |
|---|---|---|
| 1-5 | 16 | 22.9 |
| 6-10 | 33 | 47.1 |
| 11-15 | 16 | 22.9 |
| 16-20 | 04 | 5.7 |
| 21-25 | 01 | 1.4 |
| 26-30 | 00 | 00 |
| **Total** | **70** | **100.0** |

Table 4: How long (years) has the respondent been in the business?

| Duration (Years) | Frequency | Percentage |
|---|---|---|
| 1-5 | 27 | 38.6 |
| 6-10 | 28 | 40.0 |
| 11-15 | 11 | 15.7 |
| 16-20 | 04 | 5.7 |
| **Total** | **70** | **100.0** |

Table 5: Do you manage both ram and ewe?

| Parameter | Frequency | Percentage |
|---|---|---|
| Yes | 61 | 87.1 |
| No | 09 | 12.9 |
| **Total** | **70** | **100.0** |

Table 6: Which traditional method of detecting pregnancy is more accurate?

| Parameter | Frequency | Percentage |
|---|---|---|
| Palpation | 03 | 4.3 |
| Udder enlargement | 21 | 30.2 |
| Restlessness | 10 | 14.2 |
| Frequent urination | 01 | 1.3 |
| Mucus discharge from vulva | 35 | 50.0 |
| **Total** | **70** | **100.0** |

Similar results have been reported across sub- Sahara African countries (Turkson and Naandam, 2006; Baah *et al*., 2012; Oladeji and Oyesola, 2012; Umar and Kazaure, 2012; Ayalew *et al*., 2013). In contrast, Fakoya and Oloruntoba (2009) reported a high female participation of small ruminant farmers in Osun-state, Nigeria.

**References**

Ayalew, T., Duguma, B. and Tolemariam, T. (2013). Socioecomic and Farm Characteristics of Smallholder Cattle Producers in Ilu Aba zone of Oromia Regional State, South Western Ethiopia. *Global Veterinaria*, 10(5):607-613.

Baah, J., Tuah, A. K., Addah, W. and Tait, R. M. (2012). Small Ruminant Production Characteristics in Urban Households of Ghana. *Livestock Research for Rural Development. Volume 24, Article #86.*Retrieved September 15, 2013, from http://www.lrrd.org/lrrd24/5/baah24086.htm.

Booth, K., Lexer, D., Palme, R., Troxler, J. and Waiblinger, S. (2000). Milking of Brown Swiss and Austrian Simmental Cows in a Herringbone Parlour or an Automatic Milking Unit. Appl. Anim. Behav. Sci. 88, 209–225.

Devendra, C. (1985). Prospects for Developing Small Ruminant Production in Humid Tropical Asia. Expert Consultation on Increasing Small Ruminant Production. Soria, 8-12, July, 1985.

Dossa, H. L., Gauly, M. and Wollny, C. (2007). Smallholder's Perceptions of Goat Farming in Southern Benin and opportunities for improvement. *Tropical Animal Production*, 39:49-57.

Faizal, A. and Kwasi, O. (2014).Socio-economic Characteristics of Subsistent Small Ruminant Farmers in Three Regions of Northern Ghana. *Asian Journal of Applied Science and Engineering*, 3(3):351-364.

Fakoya, E. O. and Oloruntoba, A. (2009). Socio-economic Determinants of Small Ruminants Production among Farmers in Osun state, Nigeria. *Journal of Humanities, Social Sciences and Creative Arts*, 4:90-100.

Martinez, K., Langbein, J., Schmied, C., Lexer, D. and Waiblinger, S. (2008). Heart Rate Variability in Dairy Cows—Influences of breed and milking system. Physiol. Behav. 85, 195–204.

Oladeji, J.O. and Oyesola, O.B. (2012). Small Ruminant Production among Farmers in Iseyin Local Government Area of Oyo State, Nigeria. *Journal of Agricultural and Food Information*, 3:256-265.

Oluwatayo, I. B. and Oluwatayo, T. B. (2012). Small Ruminants as a Source of Financial Security; A Case Study of Women in Rural Southwest Nigeria. Institute for Money, Technology and Financial Inclusion (IMTFI), Working Paper 2012-1. Accessed May 2012, available at www.imtfi.uci.edu/imtfi_2010_oluwatayo.

Peacock, C. (2005). Goats — A pathway out of Poverty. *Small Ruminant Research*, 60(1), 179-186.

Terril, C.E. (1985). Prospect for Increasing Small Ruminant Production. In: V.M., Timon, & J.P., Hanrahan, (Eds.), Small Ruminant Production in the Developing Countries. Proceedings of an Expert Consultation, Sofia, Bulgaria, 8-12 July, 1985.

Turkson, P. K. and Naandam, J. (2006). Constraints to Ruminant Production in East Mamprusi Districts of Ghana. *Ghana Journal of Agriculture Science*,39:155-164.

Umar, A. M. and Kazaure, L. A. (2012). Socio Economics Characteristic of Yankasa Sheep Trades and Marketing Activities in Hadejia, Jigawa State – Nigeria. **In**: Akpa, G.N., Dairo, R.A.S., Bawa, G.S., Solomon, I.P., Amaefulele, K.U., Odunsi, A.A. and Ladokun, A.O.(eds). **Agricultural Transformation: Strategies and Policies for Livestock Development in Nigeria.**Proceedings of the 17th Annual Conference of the Animal Science Association of Nigeria (ASAN-NIAS) held at International Conference Centre, Opposite Radio House, Area 8 Abuja, Nigeria. 9th to 13th September, Pp. 254-257(ISSN= 978 3477722).

Vautial, L., Neuffer, I., Kaufmann, C., Hauser, R. and Wechsler, B. (2004). Milk Cortical Concentration in Automatic Milking Systems Compared with Auto-Tandem Milking Parlors. *J. Dairy Sci*. 89, 3447–3454.

Wilson, R.T. (1991). Small Ruminant Production and the Small Ruminant Genetic Resource in Tropical Africa. Animal Production and Health Paper. Rome, Italy, Food and Agriculture Organisation.