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EPIDEMIOLOGY OF ABORTION IN YAKS (*POEPHAGUS GRUNNIENS*) UNDER FARM CONDITIONS

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ABSTRACT

Gestational disorders like abortions are of great concern due to the loss of fetus in yaks. Therefore, a basic study was carried out to study the epidemiology of abortion in yaks managed under farm condition in semi-intensive system of management. Data of 254 pregnancies were collected over a period of 6 years from 2005 to 2010 from the farm records. The overall incidence of abortion was found to be 16.54 % out of which 80.95 % abortions were recorded in pleuriparous and 19.05 % in the primiparous animals. Month wise analysis showed that maximum abortions were recorded in the month of June followed by May. Maximum abortions were recorded during the late gestation phase followed by mid gestation and early gestation stage.

Key words: Abortion, yak.

Yak (*Poephagus grunniens*) has been domesticated since the prehistoric era and are found in North Western China, Russia, Tazakistan, Kazakistan, Nepal, Bhutan and India (Pal, 1993). Yak is a cold loving hairy animal. Since its domestication it is being utilized for production of milk, meat, wool, draught and means for transport to the high landers. In India, yaks are mainly distributed in the Himalayan states of Himachal Pradesh, Jammu and Kashmir, Sikkim, Uttarakhand and Arunachal Pradesh. Under traditional system of management, yaks are known for their late sexual maturity, seasonal breeding, silent heat, anoestrus and long intercalving periods. Gestational disorders like abortions are of great concern due to the loss of fetus. Abortions are frequently followed by uterine infections, delayed post partum interval and long intercalving period. Therefore, present investigation was carried out with an objective to find out incidence of abortion in the yaks maintained under farm condition in semi-intensive system of management.

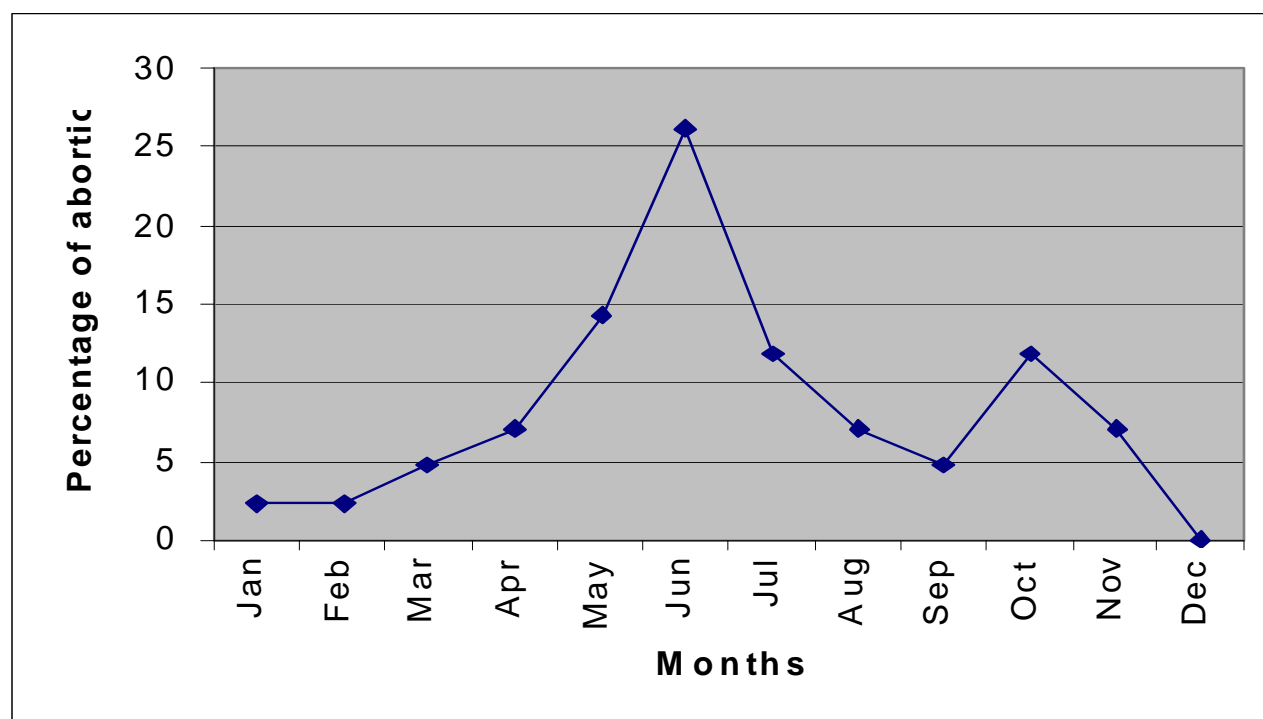
The study was carried out at the National Research Centre on Yak, Indian Council of Agricultural Research, Dirang, Arunachal Pradesh,

India. The yak farm is located at 2750 m above mean sea level (91°40'E longitude and 27°0'N latitude) in the Nyukmadung area of the West Kameng district of Arunachal Pradesh in India. The animals in the farm were managed under semi-intensive system of management. These were allowed to graze during day time and were fed concentrate mixture composed of maize grain, wheat bran, mustard cake, mineral mixture and salt as per the live body weight. All the animals had free access to water through out the day. The study was based on calvings/abortions from 2005 to 2010 of yaks that ranged from 3 to 8 years of age. A total of 254 pregnancies were recorded during this period of 6 years. Herdsmen were on duty 24 hour a day throughout the year to record the parturition or abortions. The stage of gestation at the time of abortion was classified as early stage (below 3 months), mid stage (3-6 months) and late stage (above 6 months), respectively.

The overall abortion recorded during the period of study was found to be 42 out of total 254 pregnancies (16.54 per cent). Maximum abortions were recorded in the year 2009 (30.16 per cent) and minimum during 2007 (1.92 per cent). Month wise analysis showed that maximum abortions were

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FIG. 1. Month wise distribution of abortion in Yak



recorded in the month of June followed by May (Fig. 1). A total of 80.95 per cent abortions were recorded in pleuriparous animals while only 19.05 per cent were recorded in the primiparous animals. Maximum abortions were recorded during the late gestation (50.00 per cent) followed by mid gestation (41.67 per cent) and early gestation stage (8.33 per cent). The incidence of abortions and prenatal losses of fetuses in yak cows was reported to vary from 5 to 10 per cent in Sichuan yaks (Cai and Wiener, 1995). The average abortion rate was 5.7 per cent of 971 gravid yak females studied at Lagu Yak stud in Tibet. In Datong Yak Farm in Qinghai region, the normal calving rate was 85.9 per cent out of 2357 pregnant females (Nivsarkar *et al.*, 1997). It is difficult to suggest the exact cause of the high incidence of abortion in this herd. It might be due to smaller sample size in the present study, heat stress or presence of some infectious disease in the herd. Detailed studies are however, warranted to establish the exact cause or combination of the causes of this. In this study maximum abortion were recorded during May and June months. Krishnan *et al.* (2009) worked out the Temperature Humidity Index (THI)

of around 52 is the comfortable upper limit for yaks in the same group of experimental animals. They further opined that when THI exceeds 52, the yaks experienced the heat load or heat stress. The THI exceeds 52 from the months of May to September at the altitude of 2750 m above MSL (Krishnan *et al.*, 2009). Therefore, it may be one of the reasons for maximum abortions during these months. They further opined that the traditional practice of moving yaks to further higher altitude during summer is aimed at reducing the heat stress. Similar to present findings, Mehrotra and Dey (1998) also reported that maximum abortions occurred in pleuriparous animals in comparison with primiparous in a herd of dairy cattle. Hunter (1982) reported the higher embryonic mortality in cows as compared to heifers. Maximum abortions were recorded during the late stage of gestation in the present study. One of the reasons for this may be because most of the early stage abortions go unnoticed when animals were maintained in pasture during day time. In agreement with the present findings, Prabhu and Chatterjee (1970) also reported the occurrence of average 70 per cent abortions in later stages of pregnancy.

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