



Tropentag, September 14-16, 2010, Zurich

“World Food System —
A Contribution from Europe”

Variation in Reproductive Performance of Sows Kept by Smallholder Farmers in Xishuangbanna, Southern China

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Abstract

Despite millions of people who escaped poverty due to China's economic development, still many suffer from a low standard of living. Among these are people who earn their income in the agricultural sector, which employs 69% of the Chinese population but only contributes 10.9% to the country's GDP. In Xishuangbanna, China's most southern prefecture, about 600,000 people, many of them farmers, are spread over 19,700 km² of mountainous rural areas. Their mostly mixed farming systems combine annual and perennial crops and livestock. A previous study of the reproductive performance of pigs under local management in the area revealed firstly an overall low productivity and secondly a high variation in the number of piglets per litter and age of first parturition of sows. To determine the reasons for this variation, this study allotted the performance-tested pig farms to three major regional livestock production systems, namely Lowland (n=87), commercial rubber farms with marginal subsistence livestock production, Midland (n=57) farms with annual crops plus higher livestock density and highly diverse Highland (n=46) farms with a semi-commercial pig production branch. It was hypothesised that the coefficient of variation (CV) of the tested parameters is smaller within groups than for the total population of 182 sows.

Litter size (piglets) was 5.6 (CV 34%), 5.7 (39%), 3.4 (18%) and 5.7(35%) and age at first parturition (days) was 340 (14%), 404 (34%), 304 (59%) and 353 (34%) for sows of the groups L, M, H and the total population, respectively. A lower variance could thus only be found in litter size of sows on H farms and age at first parturition on L farms. Sows from M farms showed a lower performance and a higher variance than the total population. L farmers keep smallest number of pigs (2.4; 62%) and showed good performance while H farmers (with 5.0 pigs; 70%) had lowest litter size, which is a hint for extensive utilisation. In general, the variance might be due to the genetic diversity of pigs or farmers' heterogeneous feeding practices; the latter are presently investigated in more detail.

Keywords: China, pigs, reproductive performance, smallholder