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Breeding Practices and Trait Preferences in Smallholder Pig Production Systems in Mountainous North-West Viet Nam

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Abstract

Low and unsteady resource availability limits smallholders' possibilities to extend pig production in mountainous areas of North-West Viet Nam. One possibility to increase production efficiency is the development of appropriate breeding programmes integrating genotypes that fit prevailing production conditions and being able to perform the multiple roles of pigs. Many important functions of local breeds are embedded in non-marketable traits, often ignored in such programmes. By integrating local breeds into village breeding programmes, important genetic resources can be preserved in their natural habitat. This study aimed at understanding smallholders' breeding practices and objectives as well as trait preferences for female breeding stock in order to guide the development of appropriate breeding programmes and to assess the future role of the local Meo breed for such programmes. The study covered six villages following a production gradient from demand-driven to resource-driven pig production. A total of 140 pig keepers were approached by interviews using structured questionnaires and by choice experiments. Descriptive statistics of collected data were calculated and NLOGIT 3.0 econometric software was used to estimate trait preferences. The local Meo was the main breed of smallholders in resource-driven production systems. Though being appreciated for its productive adaptability, smallholders stated to prefer higher-yielding genotypes. Uncontrolled natural mating was predominant. In contrast, breeding practices in the demand-driven pig production system reflected smallholders' efforts to maximise the proportion of improved genotypes. Mong Cai sows were predominantly used, being appreciated for their reproductive performance and adaptability traits. Common breeding practice was their crossbreeding with exotic boars, either by natural mating or artificial insemination. Important pig breeding traits across different production systems were adaptability to fibre-rich diet and disease resistance, as well as reproductive and productive traits. Outer appearance tended to be less important. Results suggest that important traits in developing breed improvement programmes should include adaptability and performance traits. However, as smallholders' breeding practices and trade-offs between pig breeding traits differed across production systems, the integration of the Meo breed into breeding programmes only seems promising in resource-driven production systems.

Keywords: Breeding practices, choice experiments, local Meo breed, North-West Viet Nam, smallholder pig production, sustainable breeding programmes, trait preferences

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