Breeding for meat sheep in France

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Abstract

Selection of meat sheep in France is based on within breed collective breeding programs. Selection criteria and phenotypes collected in the national performance recording system depend on the type of breeding program. A comprehensive selection scheme includes 3 key steps with genetic evaluations: (1) on-farm evaluation of maternal abilities and meat qualities evaluations based on (2) individual testing and (3) progeny testing. On-farm evaluation of maternal abilities is based on both prolificacy and mothering ability, assessed by one weighing per lamb around 30 days of age. On the whole, 330,212 ewes had on-farm phenotypes in 2016, in 1,230 flocks from 46 different breeds. These figures represent roughly 5% of the whole meat sheep population. Meat qualities are evaluated on young rams in central test stations; the criteria are growth rate and weight at typical age assessed by weighings, fat and muscular development at typical age assessed by ultrasonic measures (fat thickness and muscle depth) and by muscle scoring (shoulders, back-loins and legs). A total of 3,794 rams were evaluated in such stations in 35 breeds in 2016. Finally, 194 rams from 9 breeds were progeny-tested for meat qualities; phenotypes are collected on lambs in fattening unit and at slaughtering at fixed age: growth rate during fattening, conformation assessed by morphological development, carcass conformation and rib eye muscle, dressing percentage, fat (external fat extent, internal fat amount, loins fat amount, back fat depth at last rib). Besides this pattern of breeding schemes and the phenotypes currently collected, different traits are on the way to be included in the selection criteria for some breeds, such as resistance to parasites, behavior, mortality/vigor of the lambs, longevity. One of the main challenges within the prospect of the new zootechnical European regulation is to reinforce the collective organization of meat sheep genetic improvement, especially through efficient breeding organizations.

Keywords: meat sheep, recording, genetics, phenotypes