Improving slow growing parents for alternative broiler production systems

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Broiler production has increased worldwide in the past 20 years, and it is expected to continue in the future. Also, there are many advances in producing acceptable products according to the changes of consumer demands and alternative breeding systems. Consumers expect to pay more money for products produced in semi-intensive, extensive, free-range and organic systems. The use of the fast growing meat-type chickens in these production systems causes physiological and metabolic problems. Also, delaying slaughter age can lead to insufficient use of genetic capacity. Slow growing chickens are more suitable for organic and free-range breeding systems and reach to 2.2-2.5 kg live weight about in 80-120 days. In Turkey, consumer demand for organic products is increasing; production branches accrue and studies are performed on chicken meat and eggs. Also, slow or medium growing chickens will be preferred in organic and free-range meat chicken productions. In parallel with the improving consumer demands and alternative production systems, the only way of having these genotypes, which are used in this system and not available in Turkey, is to import them from abroad. The development of slow growing genotypes with basic breeding techniques will offer an expansion for the sector. Presence of animal material which can be used for this expansion is an advantage for our country. Heavy egg lines imported from Canada to Poultry Research Institute will be used for this purpose. In this study, sire and dam parent lines of the slow growing genotypes were developed by using two heavy layer lines, Barred Plymouth Rock (BAR) and Rhode Island Red (RIR), and fast growing ROSS parents. ROSS x RIR and ROSS x BAR crosses had higher live weights (2936 and 2938 g) and better feed conversion ratios (2.393 and 2.376) than RIR x ROSS and BAR x ROSS crosses (2773 and 2764 g live weight, 2.453 and 2.476 Feed conversion ratio) at slaughter age (84 days) ($P<0.01$).