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On-Farm Evaluation of Fast and Slow Growing Genotypes for Organic and Pasture Poultry Production Systems

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Abstract : Organic poultry production is becoming increasingly popular in the United States with approximately 17% increase in the sales of organic meat and poultry in 2016. As per the National Organic Program (NOP), organic poultry production system should operate according to specific standards, including access to outdoors. In the United States, organic poultry farmers are raising both fast growing and slow growing genotypes for alternative productive systems. Even though heritage breed birds grow much slower compared to commercial breeds, many free range producers believe that they are better suited for outdoor production systems. We conducted an on-farm trial on a working pasture poultry farm to compare the performance and meat quality characteristics of a slow-growing heritage breed (Freedom Rangers, FR), and two commonly used fast growing types of chickens (Cornish cross, CC and Naked Neck, NN), raised on pasture, in side by side pens segregated by breed (n=70/breed). CC and NN group birds were reared for eight weeks whereas FR group birds were reared for 10 weeks and all the birds were commercially processed. By the end of the rearing period, the final body weight of FR group birds was significantly lower than both the fast growing genotypes (CC and NN). Both CC and NN birds showed significantly higher live weight, carcass weight as well as fillet, tender and leg yield ($P < 0.05$). There was no difference in the wing and rack yield among the different groups. Color of the meat was measured using CEILAB method and expressed as lightness (L), redness (a*) and yellowness (b*). The breast meat from FR birds was much redder (higher a* values) and less yellow (lesser b* values) compared to both the fast growing type of chickens ($P < 0.05$). Overall, fast growing genotypes produced higher carcass weight and meat yield compared to slow growing genotypes and appear to be an economical option for alternative production systems.

Keywords : fast growing chickens, meat quality, pasture, slow growing chickens
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