

FATNESS QTL ON CHICKEN CHROMOSOME 5 AND INTERACTION WITH SEX

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After former identification of fatness QTL on chicken chromosome 5 new experiments were carried out in order to refine the QTL location. A new 3-generation familial design was established by crossing lean and fat chicken lines. Up to 407 F2 progeny (males and females) were obtained in 4 F1-sire families. They were recorded at 9 weeks of age for body weight and abdominal fat weight. Genotyping of 7 GGA5 microsatellite markers were performed in the FO and F1 breeders as well as in 48 extreme individuals for fattening (males and females) in each sire-F2 progeny. QTL analyses were performed for abdominal adipose tissue weight corrected for body weight. The results confirmed the presence of fatness QTLs on chromosome 5 and revealed a QTL x sex interaction. By crossing one F1 sire heterozygous at the QTLs with lean line dams, 3 recombinant BC1 males were produced and their QTL genotype were assessed in BC2 progeny. The QTL x sex interaction was confirmed in the BC2 progeny and the location of the female QTL was refined to less than 8 Mb at the distal part of the chromosome 5. It was also evidenced that fat QTL alleles were segregating in both lean and fat lines.