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# A Study of Growth Performance, Carcass Characteristic, Meat Quality and Association of Polymorphism in the ApoVLDL-II Gene with Fat Accumulation in the Female Broiler, Thai Native and Betong Chickens (KU Line)

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**Abstract :** Both Betong chicken (KU Line) and Thai Native chickens were the high quality of the meat and low carcass fat compared to broiler chickens. The objective of this study was to determine the growth performance, carcass characteristic, meat quality and association of polymorphism in the ApoVLDL-II gene with fat accumulation in the female broiler, Thai Native and Betong (KU line) chickens at 4-14 weeks. The chickens were used and reared under the same environment and management (100 chicks per breed). The results showed that body weight (BW) of broiler chickens was significantly higher than Thai Native and Betong (KU line) chickens (P < 0.01) through all the experiment. At 4-8 weeks of age, feed conversion ratio (FCR) of broiler chickens was significantly better than Thai Native and Betong (KU line) chickens (P < 0.01), then increased at week 8-14. The percentage of breast, abdominal fat and subcutaneous fat of broiler chickens was significantly greater than Thai Native and Betong (KU line) chickens (P < 0.01). However, Thai Native chickens showed the highest percentage of liver (P < 0.01) when compared to other breeds. In addition, the percentage of wing of Thai Native and Betong (KU line) chickens were significantly (P < 0.01) higher than broiler chickens. Meat quality was also determined and found that, pH of breast meat left from slaughter 45 minutes (pH45) and 24 hours (pH24) of broiler was significantly higher than Thai Native and Betong (KU line) (P < 0.01) whereas the percentage of drip loss, thawing loss, cooking loss and shear force was not significantly different between breeds. The polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) technique was used to genotype the polymorphism in the ApoVLDL-II gene in the broiler, Thai Native and Betong (KU line) chickens. The results found that, the polymorphism in the ApoVLDL-II gene at VLDL6 loci was not associated with fat accumulation in those studied population.

**Keywords :** ApoVLDL-II gene, Betong (KU line) chickens, broiler chickens, carcass characteristic, growth performance, meat quality, Thai native chickens
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