
C-082

Effect of free range production system on chicken carcass and meat quality traits

Massimiliano Petracci, Simone Rimini, Gerardo Manfreda, Claudio Cavani, Achille Franchini

Dipartimento di Scienze degli Alimenti, Alma Mater Studiorum, Università di Bologna, Italy

Corresponding author: m.petracci@unibo.it

There is a growing consumer interest towards poultry products coming from unconventional housing systems with outdoor access. A study was conducted to characterize carcass traits and chemico-physical properties of chickens labelled free-range (according to the EC Directive 1538/91) if compared with conventional ones. Free range female (FR-F) and male (FR-M) chickens were separately raised for 56 and 70 d, respectively, in order to obtain currently marketed product categories. They belonged to medium growing Isa strain and had continuous daytime access to open-air area from 28 d to slaughter age and indoors stocking density did not exceed 27.5 kg/sqm. Conventional female (C-F) and male (C-M) chickens belonged to a fast growing hybrid (Ross 708) and were separately raised for 39 and 50 d, respectively, under intensive conditions in a poultry house under controlled environmental conditions at a stocking density of 30-32



kg/m². Females (FR-F and C-F) and male (FR-M and C-M) birds were slaughtered into 2 separate sessions. After slaughtering, 20 carcasses for each group (FR-F, 1.2 kg; FR-M, 1.9 kg; C-F, 1.2 kg; C-M, 2.3 kg) were randomly selected for evaluating carcass cut-up yields and fifteen of them were used to assess quality properties of both breast and leg meat (skin and meat colour, ultimate pH, drip and cooking losses, AK-shear force). C birds had dramatic higher carcass and breast meat yield, whereas FR had higher wing and leg yields ($P < 0.001$). Both meat and skin of breast and leg coming from FR birds were lighter and less red and more yellow ($P < 0.001$). Even if no difference were found in ultimate pH, FR birds exhibited higher water-holding capacity (lower drip and cooking losses) in both breast and leg meat ($P < 0.01$). Finally, although shear force did not differ in breast meat, leg from FR birds were tougher ($P < 0.001$). Overall these data indicate that noticeable quality trait differences exist between free range and conventional labelled poultry products.