Effect of simulated agroforestry structures on performance and range use of organic meat chickens

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Chickens provided with access to range often do not fully use the range area. The U.S. organic standards require that chickens be given outdoor access, but do not stipulate how the range area should be configured. We evaluated whether providing constructed enrichments that simulated complex agroforestry structures would increase range use by meat chickens. Slow-growing Delaware chickens were raised in floor pens (n = 17/pen) in naturally ventilated houses; a pophole in each pen allowed daily access to a grass-covered range (3.1 x 30.5 m). Feed and water were provided indoors and 15.2 m from the house. The birds were randomly assigned to one of two treatments: No enrichment (control; NENR) and Enrichment (ENR). There were 4 pens per treatment. In the ENR treatment there were roosts made of plastic pipe or screened shelters 7.6 m and 22.9 m from the house and overhead shade panels 15.2 - 21.3 m from the house. The number of birds in each quadrant of the range was counted every 7 min three times daily (0900-0945 h, 1300-1345 h, and 1600-1645 h) when the birds were 7 and 10 wk of age. There was no difference in weight gain between treatments (P > 0.05). On average, only 12% of birds used the range at any given time. The percentage of birds on range varied throughout the day, with range use higher in the morning (20%) and early evening (12%) than mid-day (5%). Overall, most birds using the range (80%) were observed in the quadrant nearest the house (0 – 7.6 m). However, in the ENR treatment more birds (16%) were observed in the third quadrant (15.2 – 22.9 m from the house) than in the NENR treatment (4%). This indicates that adding enrichments to the range encouraged birds to use the range more evenly.