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**REPLACING SOYBEAN MEAL BY ALTERNATIVE PROTEIN SOURCES: MULTICRITERIA ASSESSMENT OF MEDIUM OR SLOW-GROWING CHICKEN PRODUCTION SYSTEMS**

**Bertrand Méda** (INRA, France), **Michel Lessire** (INRA, France), **Léonie Dusart** (Institut Technique de l'Aviculture, France), **Isabelle Bouvarel** (Institut Technique de l'Aviculture, France), **Cécile Berri** (INRA, France)

Two trials were carried out to investigate the feasibility of producing medium (MG) or slow-growing (SG) chickens while reducing or totally removing soybean meal from diets. Three feeding strategies were compared for MG system: a control (C), a low soybean (LS) and a soy-free (0%S) strategy including alternative sources of proteins (rape and sunflower seed meals, pea, faba bean). Only C and 0%S diets were compared for SG system. MG and SG chickens were reared up to 56 or 84 days of age, respectively. MG chickens were not affected by the LS strategy while the 0%S strategy negatively impacted slaughter weight, feed conversion ratio and breast meat yield. In SG chickens, the 0%S strategy had no impact on performances and breast meat yield. Nitrogen and phosphorus excretion rates increased in LS and 0%S strategies. Pododermatitis scores and mortality rates were similar among treatments. Production costs were not affected by the LS strategy while they were increased in the 0%S one by 4% and 1% for MG and SG systems respectively. Meanwhile, total greenhouse gas emissions (using Life Cycle Analysis) in the MG system were significantly reduced in LS and 0%S strategies (-12 and -27% respectively), while in the SG system, they were decreased by 41% in the 0%S one. Replacing soybean meal by other protein sources would thus be helpful to better meet consumers' expectations (non-GM feed, use of local feedstuffs...) while minimizing the negative environmental and economic impacts.

**Keywords:** soybean meal, protein source, multicriteria assessment, chicken, feeding strategy