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Pea and rapeseed meal in protein reduced diets for broilers

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Two feeding trials with male Ross308 broilers were carried out to determine the effect of increasing rapeseed meal levels (RSM), increasing pea levels or the combination of both as substitutes for soybean meal (SBM). In addition the diets of trial number two were considerably lowered in protein content (XP content: starter: 22.4%; grower: 20.4; finisher: 18.5%). Each trial involved 3 phases (phase 1: 0.-10. day; phase 2: 10.-24. days; phase 3: 24.-35. days).

Trial number one was conducted with 1296 broilers. SBM was replaced by either RSM (Feeding Group 2 (FG2) 10%, FG3: 15%), peas (FG4: 10%, FG5:20%) or a combination of both (FG6: 10% RSM/10% peas, FG7: 10%/20%, FG8: 15%/10%, FG9: 15%/20%). A RSM and pea free diet served as the control (FG 1). The second trial was carried out with a total of 1368 broilers. Compared with trial number one the SBM substitute levels were 5% higher for RSM and 10% higher for peas: RSM (FG3: 15%; FG4: 20%) peas (FG5: 20%; FG6: 30%) combination of RSM and peas (FG7: 15%/20%; FG8: 20%/30%; FG9: 20%/30%). SBM free diets were provided to FG8 in phase 3 and in phase 2 and 3 to FG9. Two RSM and pea free diets served as the control (FG1 and 2). FG2 diets were reduced in XP content. Apart from lysine, methionine, threonine these diets were additionally supplemented with arginine, valine and isoleucine. In both trials the SBM-substitutes in the feed mixtures of phase 1 were halved.

Results show that the relatively high contents of lysine in peas on the one hand and the methionine levels of RSM on the other hand complement each other well. In trial one a combination of 15% RSM and 20% peas was possible without any detrimental effects on performance. However trial number two proves negative effects on performance if RSM levels are above 15% in diets. Animals fed XP reduced diets (FG2) showed better performances in trial two than FG1.

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