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Performance, carcass quality, and gastric alterations in fattening pigs fed additives containing formic acid either coated with sorbate or mixed with lactic acid

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## Abstract

The growth-promoting effects of two dietary acidifiers based on formic acid were studied with 320 fattening pigs from ca 21 kg to ca 105 kg of body weight. The sorbate-coated formic acid contained formic acid and ammonium formate which were absorbed in diatomaceous earth and coated with potassium sorbate. The investigated liquid blend contained formic and lactic acids as the major components. These acidifiers were added to grower and finisher diets at levels of 3, 6, and 12 g kg<sup>-1</sup> of feed. The grower and finisher diets in the negative control treatment contained no growth promoters, but the grower diet in the positive control treatment was supplemented with avilamycin (40 mg kg<sup>-1</sup>). The investigated acidifiers did not influence the performance of growing pigs ( $P > 0.05$ ). In finishing pigs, all additions of the sorbate-coated formic acid improved daily weight gain compared to the negative control ( $P < 0.05$ ), whereas the feed conversion ratio was improved by additions of 3 and 12 g kg<sup>-1</sup> of the acidifier. During the total fattening period, 6 and 12 g kg<sup>-1</sup> of the sorbate-coated formic acid improved daily weight gain compared to the situation in the negative control ( $P < 0.05$ ), and 6 g kg<sup>-1</sup> improved the feed conversion ratio ( $P < 0.05$ ). The addition of 3 g kg<sup>-1</sup> of the blend of formic and lactic acids improved the daily weight gain of the finishing pigs and during the total fattening period, whereas the feed conversion ratio was improved by all the addition levels ( $P < 0.05$ ). The growth promoting effect of the two acidifiers did not differ significantly, and no significant linear or quadratic trends were found in the pigs' performance results between the addition levels from 3 to 12 g kg<sup>-1</sup>. The sorbate-coated formic acid did not influence the carcass quality of the pigs ( $P > 0.05$ ). The frequency of severe gastric alterations tended to be smaller when the diets contained 12 g kg<sup>-1</sup> of the sorbate-coated formic acid ( $P = 0.07$ ), but the results of the other acidifier treatments did not differ significantly from those in the negative control. In conclusion, both the sorbate-coated formic acid and the blend of formic and lactic acids have a growth-promoting effect in fattening pigs already in small dosages, but they do not influence carcass quality or cause gastric alterations.

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[Full text] (PDF 251 kt)

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