

EFFECT OF DIETARY SUPPLEMENTATION WITH SILKWORM (*BOMBYX MORI L.*) OIL ON FATTY ACID PROFILE OF RABBIT MEAT

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I. OBJECTIVES

The experiment was conducted to investigate the effect of the dietary incorporation of oil extracted from silkworm (*Bombyx mori L.*) pupae in rabbit diets, as a complete replacement of sunflower oil, on the fatty acid (FA) composition of rabbit hind leg meat.

II. MATERIALS AND METHODS

For this purpose, sixty-four 7-wk-old Pannon White rabbits were assigned to 2 feeding groups ($n = 32$ rabbits/group): the first group received a standard commercial pelleted diet containing 1.30% sunflower oil (Control), and the second group received a diet in which sunflower oil was completely replaced with 1.30% silkworm oil (SWO). Rabbits were pair-housed in wire-mesh cages ($n = 16$ /treatment) and fed with the experimental diets until slaughter (10 wk of age). After slaughter, one rabbit/cage was randomly selected ($n = 16$ rabbits/group), and the hind legs were excised and used for FA profile determination. Data were analyzed by a one-way analysis of variance with diet as the fixed effect.

III. RESULTS

The dietary inclusion of SWO affected the FA profile of the hind leg; both $n-6$ and $n-3$ fractions were affected; meat from the SWO rabbits displayed a lower $n-6$ and a higher $n-3$ percentage, respectively ($P < 0.0001$), compared to the Control group. This led to a lower, and therefore better, $n-6/n-3$ ratio in rabbits fed with the SWO diet. The main single FA responsible of this change were linoleic ($P < 0.0001$) and linolenic ($P < 0.0001$) acid among the $n-6$ and the $n-3$ FA, respectively. Despite this, the total saturated fatty acid, monounsaturated fatty acid, and polyunsaturated fatty acid proportions remained unaffected by the dietary treatment, but thrombogenic index of meat was improved ($P < 0.0001$) with the dietary incorporation of SWO.

IV. CONCLUSION

SWO showed to be a promising feed ingredient for growing rabbits as it improved the healthiness of rabbit meat lipids.

Keywords: silkworm oil, rabbit nutrition, rabbit meat, fatty acids