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# 우모분에 의한 taurine 강화 계란 생산

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## Abstract

The experiments was conducted to investigate the effects of dietary supplementation of feather meal and pyridoxine on the taurine content of egg yolk and performance of laying hens. Feeding trial was conducted with 900 31-wk-old Hy-Line Brown layers for 4wks. The experiment consisted of six dietary treatments; control(basal diet), feather meal(FM) 3 % diet(FM 3 %), FM 3 % + pyridoxine supplemented diet(FM 3 % + Pyridox), FM 6 % diet, FM 6 % + pyridoxine supplemented diet(FM 6% + Pyridox), Synthetic taurine 0.25 % supplemented diet(Taurine). Egg production of birds fed FM 3% was highest and those of the FM diets were also higher than those of Taurine and the control. Egg weight of Taurine was significantly lower than those of FM 3 %, FM 6 % and the control but were not significantly different from those of FM 3 % + Pyridox or FM 6 % + Pyridox. Feed intake of the control was greater than those of FM 6 %, FM 6% + Pyridox or Taurine treatment but was not significantly different from those of FM 3 % and FM 3 % + Pyridox. Feed conversion of the control was significantly higher than other treatments in which that of FM 6 % was lowest. Broken and soft egg production of Taurine was highest while that of the control was lowest among treatments. Taurine content of egg yolk significantly increased by supplementation of taurine(64.7 %), FM 6 % + pyridoxine(57 %), FM 3% + pyridoxine (32.1%) and FM 6% (16.6 %). Sensory evaluation data of Taurine has shown the highest score in most of sensory attributes. It is concluded that taurine can be enriched in egg yolk by supplementation of 6 % FM diet and pyridoxine as well as 0.25 % synthetic taurine.

**Key words** : Taurine, Feather meal, Pyridoxine, Egg yolk

## 서 론

우모분은 가축사료 원료중 cystine이 가장 풍부한 원료이므로 사료에 첨가시 타우린 전구체를 공급함과 동시에 cystine이 taurine으로 전환되는데 관여하는 효소 시스템에서 조효소로 작용하는 pyridoxine을 첨가하면 타우린이 강화된 계란생산이 가능할 것이다.

본 연구에서는 taurine이 강화된 기능성 계란의 개발을 위하여 우모분과 pyridoxine 첨가가 산란계의 생산성과 난황내 타우린 함량에 미치는 영향을 조사하였다.

## 재료 및 방법

사양시험을 위하여 31주령의 산란계(Hy-Line Brown) 900수를 총 6처리구로 구성하여 처리당 5반복, 반복당 15케이지, 케이지당 2수씩(처리당 150수씩)을 완전임의 배치하였다. 사양시험은 4주간 실시하였으며, 매주 각 반복당 25개, 처리당 125개 계란을 수집한 후 난백을 분리하여 pooling한 난황은 각 반복당 1 sample씩 처리당 5 sample 총 120 난황 sample을 분석에 공시하였다. 샘플은

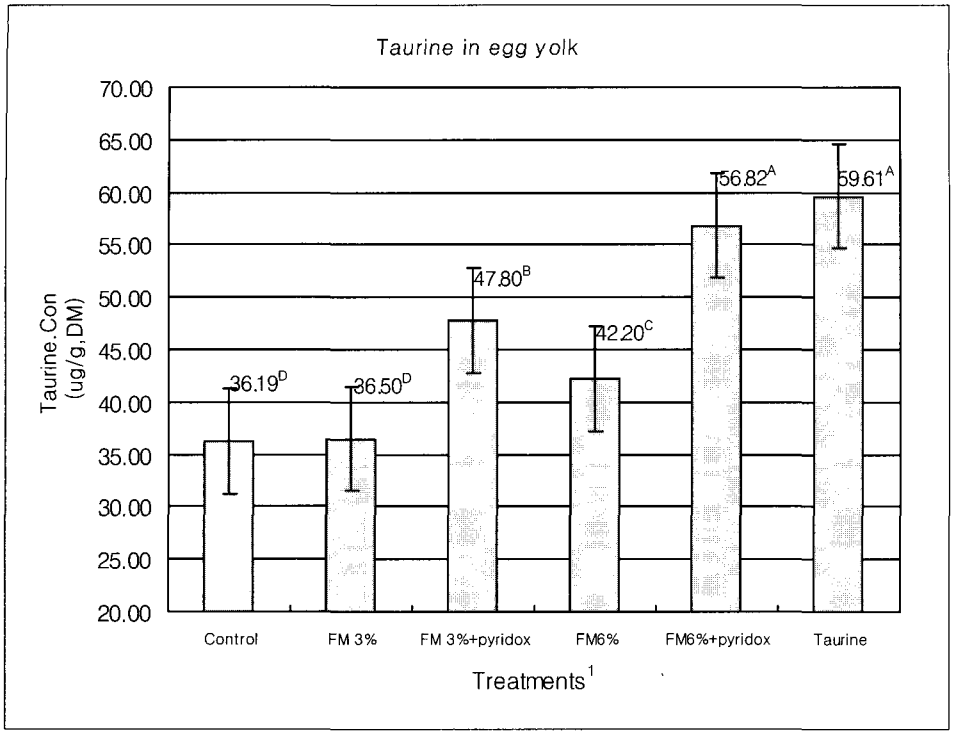


**Fig 1. Effect of dietary feather meal and pyridoxine on taurine content in egg yolk from layers fed for 4wks.**

[1] FM 3% : 3% Feather meal diet.
FM 3% + Pyridox : FM 3% + pyridoxine.
FM 6% : 6% Feather meal diet.
FM 6% + Pyridox : FM 6% + pyridoxine.
Taurine : 0.25% Synthetic taurine supplemented diet

[A-D] Means in a row with no common superscript differ significantly(P<0.01)

동결 건조후 분석시까지 -50 ℃에서 냉동 보관하였다. 산란율, 평균 난중, 연·파란율은 매일 측정하여 주별 평균을 계산하였고, 사료섭취량은 주 1회 조사하여 사료 전환율을 산출하였다.

## 결 과

▶ **생산성** : 우모분 또는 pyridoxine의 추가공급으로 산란율과 난중이 향상되었지만 합성 taurine 0.25 %을 첨가했을 때에는 난중이 낮게 나타났으며 연·파란율이 증가하였다.

▶ **Taurine 함량** : 우모분의 cystine이 taurine으로 전환되는데 pyridoxine의 첨가 효과가 컸으며 계란 난황내 타우린 함량은 합성 taurine 0.25 % 첨가구가 가장 높았고(64.7 % 강화) 우모분 처리구 중에서는 FM 6 % + Pyridox 첨가구가 57 % 강화되어 가장 높게 나타났다.

▶ **관능평가** : Taurine 첨가구가 모든 속성에서 가장 높은 점수를 나타내 기호도가 가장 좋은 것으로 평가되었다.

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