

## Influence of Homomycin Added Feeding on Domestic Fowls and Anthelmintic Effect on Ascarids

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### Introduction

The author reported previously that a long time administration of Homomycin 0.5-0.75% added basic feeding to domestic fowls, infected with the tapeworm belonging to *Raillietina*, inhibited the growth of the tapeworm and, as a result, finally the tapeworm was excreted. However, in order to put this anthelmintic to the practical use, an influence of this drug on the domestic fowl, on the egg-production of laying hens and anthelmintic effect on ascarids were to be investigated.

In order to clarify the above-mentioned points, the author carried out an experiment to medicate the feed-mix formulation containing Homomycin to ascarid-infected laying chickens

### Materials and Methods

Twenty fowls, two years old Rockhorn for use of picking eggs, are divided into two groups, ten fowls each, and the experiment was carried out from August 7, 1964 to September 29, for 50 days. The experimental group was fed with Homomycin 0.5% added feeding and the control group with the ordinary basic feeding without Homomycin.

Thus, the ratio of increasing body weight between the two groups, average amount of feeding a fowl a day, the ratio of the weight of eggs and the egg-production rate were investigated. For the infection state of ascarids at the end of experiment, on September 29, 1964, twenty fowls were killed and the remained ascarids were calculated.

### Results

Table 1 shows the body weight, the ratio of

increasing body weight, average weight of eggs, average amount of feeding and the egg-production rate during the administration of Homomycin added feeding. The average ratio of increasing body weight, weight of eggs, amount of feeding and ratio of egg-production in the experimental group are 4.8%, 52.9g and 106.7g, respectively, whereas those corresponding in the control group, 4.6%, 51.2g and 107.2g, respectively. The difference in the above-mentioned data between the two groups is not statistically significant. Furthermore, there were fowls which stopped producing eggs for 12 days in the experimental group and there were fowls which stopped producing eggs for 23 days in the control group. However, the former recovered to lay eggs again, but the latter never did until the end of the experiment.

At postmortem examination on the 50th day after the medication, the survived tapeworms in their small intestine were investigated. The result is shown in table 2.

### Discussion

The fowls used in this experiment were all two years old fowls for egg production, so it was impossible to investigate the influence of Homomycin on the growth of the fowls. However, the average amount of feeding a fowl a day in the experimental group was less than that in the control group; in spite of this fact, the increase of body weight and egg weight in the former was bigger than in the latter. From the above result, it seems safe to say that Homomycin would give favorable influence on domestic fowls and on the egg production.

On the other hand, concerning anthelmintic effect on ascarids, from the fact that number of

Table 1 Body weight, ratio of increasing body weight, ratio of egg production between the two groups

Chicken no.	Body weight (g)				Ratio of increasing body weight (g)	Average weight of egg (g)	Average amount of feeding (g)	
	7 Aug.	6 Sep.	20 Sep.	29 Sep.				
Experimental group	1	1550	1700	1650	1670	7.2	53	108
	2	1760	1820	1910	1920	8.2	52	105
	3	1890	1880	1940	1940	2.6	54	108
	4	1730	1710	1730	1740	0.6	52	105
	5	2100	2220	2240	2250	6.8	54	110
	6	1810	1820	1810	1820	0.6	53	108
	7	2080	2110	2140	2150	3.2	53	108
	8	1550	1590	1630	1630	4.9	51	105
	9	1770	1820	1870	1880	5.8	53	105
	10	1760	1800	1900	1910	7.8	54	105
Average	1800	1847	1882	1891	4.8	52.7	106.7	
Control group	11	1910	1920	2020	2020	5.4	53	108
	12	1790	1790	1810	1810	1.1	51	107
	13	1980	1930	1970	1980	0.0	54	108
	14	1670	1710	1790	1800	7.2	50	105
	15	1550	1600	1650	1650	6.1	49	105
	16	1830	1820	1910	1900	3.6	50	110
	17	1810	1930	2010	2000	9.5	54	112
	18	1560	1660	1700	1700	7.1	50	105
	19	1810	1890	1900	1910	5.2	50	107
	20	1620	1690	1730	1720	5.9	51	105
Average	1755	1794	1849	1849	4.6	51.2	107.2	

Table 2 Number of remained ascarids at autopsy

Experimental group		Control group	
Chicken no.	No. of remained ascarids	Chicken no.	No. of remained ascarids
1	0	11	0
2	0	12	2
3	0	13	0
4	1	14	0
5	0	15	0
6	0	16	1
7	0	17	1
8	0	18	0
9	0	19	3
10	1	20	0

remained ascarids in the experimental group was less than that in the control group, it is considered that 0.5% addition of Homomycin would be an anthelmintic effect on ascarids. But, in spring when the rate of ascarids infection increases, 0.5-0.75% addition of Homomycin is administered to a number of ascarids-infection chickens and the rate of anthelmintic should be compared in the future. This remains unsolved in our study. Thus, it will be necessary to determine the minimum quantity of Homomycin for anthelmintic effect on ascarids.

### Summary

1) Twenty fowls, Rockhorn, two years old for egg production, were divided into two groups and Homomycin 0.5% added basic feeding was administered to the experimental group and basic feeding without Homomycin was administered to the control group. The increase of body weight, weight of eggs, amount of feeding a

fowl a day, ratio of egg production and remained ascarids between the two groups were compared and the influence of Homomycin on the fowls investigated.

2) Average amount of feeding a fowl a day in the experimental group was less than that in the control group, but increase of body weight, weight of eggs and ratio of egg production in the former was superior to that in the control group. It can be proven by this fact that Homomycin 0.5% added feeding present favorable influence on the fowl.

3) The remained ascarids at autopsy was less in the experimental group than in the control, therefore, Homomycin shows some anthelmintic effect on ascarids.

### References

- 1) Sawada, I. (1966): Anthelmintic effect of Homomycin on the chicken tapeworm, *Raillietina cestillus*. J. Nara Gakugei Univ., 14, 19-23.

## Homomycin 添和飼料が鶏におよぼす影響および蛔虫駆虫効力

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本研究は抗生物質の一種である Homomycin を微量添加した飼料を採卵用の鶏に長期間にわたって投与して Homomycin が鶏に如何なる影響を及ぼすかを検討する一方鶏蛔虫の駆虫に効力があるか否かを調査したものである。

1) 採卵用2年鶏ロックホーン種20羽を10羽ずつの2群にわけ、試験区には Homomycin を0.5%の割合で基礎飼料に添加したものを与え、対照区には基礎飼料のみを与えて、両群の鶏の増体量、卵量、一日一羽あたりの飼料の摂取量、産卵率および残存蛔虫数を比較して鶏体

におよぼす Homomycin の影響を検討した。

2) 試験区の一日本平均飼料摂取量が対照区のそれに比して少量であつたのに、前者の増体重、卵重および産卵率が後者のそれらより僅かではあるが優れていたことは Homomycin 0.5%添加飼料は鶏体に対して何ら悪影響を与えるものではないことが判明した。

3) 解腸時における残存虫体数は試験区が対照区より少数であつたことから、Homomycin は蛔虫に対してもある程度駆虫効力を有する。