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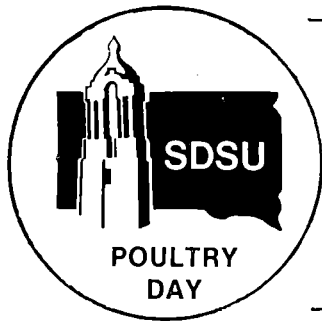
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SOME EFFECTS OF DIFFERENT LEVELS OF DISTILLERS
DRIED GRAIN WITH SOLUBLES AND OATS ON FATTY
LIVER HEMORRHAGIC SYNDROME
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The recent view regarding the etiology of Fatty Liver Hemorrhagic Syndrome (FLHS) is that it is supposed to be nutritional in origin. Previous research at Georgia had shown that a fermentation by-product added to a layer diet helped to reduce the incidence of FLHS. At this station, oats have been shown to contain some protective factor against FLHS.

The aims of the present experiment were to study the effect of different levels of distillers dried grain with solubles and oats on FLHS. One-third of the birds on each diet were force-fed at 120% of normal intake to effect liver fat accumulation and possible rupture of liver tissue with subsequent hemorrhage.

In this experiment, four different diets were used. The basal diet was the usual corn-soy type of ration containing 16% protein. In diet two, a major portion of the corn and some soybean meal were replaced by oats. For the third diet 20% of the corn and soybean meal were replaced by 'Solulac', a product containing 70% distillers grain and 30% distillers solubles, and in diet four 30% of the diet was 'Solulac'. The first part of the experiment was conducted with 84 Hy-line hens 51 weeks of age at 21 birds per diet. Egg production, feed consumption, egg weight and albumen height were recorded and analyzed for three 28-day periods as shown in Table 1.

Considering the average figures, the hens on diet two showed the poorest production performance. Hens on diets three and four containing the 20 and 30% levels of fermentation by-product showed somewhat reduced production.

At the end of the first phase, one-third of the birds from each diet were selected at random and forced-fed at 120% of their normal intake for 21 days. At the end of this regime, all birds were sacrificed and the livers were collected, weighed and scored for hemorrhage. Average production and liver parameters are shown in Table 2.

Diet two with oats and diet four with 30% 'Solulac' showed some beneficial effect against FLHS. Hens on these diets showed a higher rate of egg production and less liver weight and liver hemorrhages as compared to hens on diets one and three. Force-feeding at 120% of the normal intake again reduced production and increased liver weight and hemorrhage as has been reported before.

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Table 1. Effect of different levels of distillers grains and oats on production parameters (Average for three 28-day periods)

Diet	Hen-day production %	Hen-day feed consumption g	Egg weight g	Body weight kg	Haugh unit	Feed/dozen eggs g
Basal	72.8	114.7	65.4	1.9	67.4	1.9
Oats	53.9	100.5	66.1	1.8	72.1	2.4
Solulac, 20%	67.3	115.5	65.6	1.8	68.8	2.1
Solulac, 30%	65.5	116.1	65.2	1.8	66.5	2.2

Table 2. Effect of force-feeding and different levels of distillers grains and oats on liver and production parameters (Average of three weeks)

Diet	Hen-day production %	Hen-day feed consumption g	Egg weight g	Liver weight (wet basis) g	Liver score	Final body weight kg
Basal	53.0	125.6	64.6	36.9	1.6	1.9
Oats	63.9	134.9	66.5	32.2	1.1	1.8
Solulac, 20%	56.7	136.4	68.2	35.9	1.6	1.9
Solulac, 30%	61.9	139.7	69.4	31.3	1.1	1.8
<u>Ad libitum</u>	62.4	111.4	67.7	33.1	1.2	1.7
Force-fed	51.6	177.0	65.9	35.9	1.7	2.0