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Feeding ground rough rice, etc. to horses, mules, hogs and dairy cattle: a preliminary report

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Agricultural Experiment Stations

OF THE

Louisiana State University

AND

A. & M. College

BATON ROUGE

Feeding Ground Rough Rice, Etc.

TO

Horses, Mules, Hogs and Dairy Cattle.

A PRELIMINARY REPORT.

W. H. DALRYMPLE

Director
Feeding Ground Rough Rice, Etc. to Horses, Mules, Hogs and Dairy Cattle.

A PRELIMINARY REPORT

Since the reduction in the price of rice, a great many inquiries have been received by the Experiment Station from farmers, and others, in the rice-growing sections of the State with reference to the feasibility of utilizing rough rice, especially, but also Brewers’ rice, as a feed for animals, with the view of enhancing the value of the product.

The majority of the inquiries have been as to the danger, if any, of feeding the rough rice; and the Station is issuing this preliminary report as early as possible in order to give rice farmers, and others who may be interested, the benefit of the results of some feeding tests just concluded, so far as the danger of rough rice is concerned.

It may be stated, however, that while the recent tests were made with hogs and dairy cattle, the Station conducted a test with mules a few years ago, the results of which were published as Bulletin No. 122.

Two Station mules, which might be classed as "cotton mules," were used, and the feeding continued for about six weeks. The initial total day’s ration was composed of the following:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Lbs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground rough rice</td>
<td>2</td>
</tr>
<tr>
<td>Cracked corn</td>
<td>6</td>
</tr>
<tr>
<td>Cotton seed meal</td>
<td>1½</td>
</tr>
<tr>
<td>Blackstrap molasses</td>
<td>4</td>
</tr>
<tr>
<td>Lespedeza hay</td>
<td>12</td>
</tr>
</tbody>
</table>

In order to exercise caution in feeding the rice, we began with the small amount mentioned above; but each succeeding week the amount of rice was increased and the corn decreased, until, during the last week the animals were receiving 8 pounds of rice, which was a complete substitution of the rice for the corn; or about 60% of the concentrated part of the ration was composed
of ground rough rice. The day’s rations were always divided into three portions.

The principal conclusions arrived at from this test were:

"That rough rice, when ground, and forming one of the ingredients of a mixed ration, may be fed with safety and benefit to horses or mules.

"That the day’s ration may be composed of at least 8 pounds of ground rough rice for horses or mules doing moderately heavy work, and approximating 1,000 pounds live weight.

"That the other ingredients in the test rations proved suitable to mix with the ground rough rice, although other available feeding materials, if of the required composition to balance the ration, might be just as satisfactory.

"That when the prices of cereal (feeding) grains are high, etc., and other conditions warrant, ground rough rice may be found of considerable economic value as a feed for horses or mules, if intelligently and systematically used."

The general health and condition of the two mules remained excellent throughout the test, with no indications, whatever, of any injurious physical effect from the rough rice.

While rough rice is probably fed in the unground state, better results may be had by grinding it, as the grain is hard, and much of it is liable to pass through the animal undigested, which, necessarily, is a waste. Consequently, we always recommend grinding, for best results.

Further, rice, alone, does not furnish all of the elements required, by the working animal especially, to maintain its muscular development, and, therefore, ought to be mixed with some other ingredient, or ingredients, of a more nitrogenous nature, to balance the ration. Besides the grain combination already given, one or two more mixtures may be helpful in suggesting how ground rough rice, and Brewers’ rice may be used to advantage in the feeding of horses or mules:

1. 76% ground rough rice; 10% cotton seed meal; 14% alfalfa meal.
2. 60% ground rough rice; 30% brewers’ rice; 10% cotton seed meal.
3. 40% brewers’ rice; 10% cotton seed meal; 25% black-
strap molasses; 25% alfalfa meal, or short-cut peavine hay.
4. 33⅓% each of oats, cracked corn, and brewers' rice.
5. 33⅓% each of brewers' rice, rice bran, and oats.

Whenever available, it would be well to feed, as roughage, with any of the above mixtures, some of the leguminous hays, such as peavine, alfalfa, clover, or lespedeza. Other roughages may be used, however, but the grass hays or the straws, being deficient in the protein element, will not balance the complete ration as well as will hays from the legumes mentioned.

The illustrations marked 1, 2, 3, 4 and 5 are not mixtures, but mixtures, the amount of which may be fed according to requirements.

**WARNING.**

We have already heard of some bad results this season from feeding rice to working mules. However, the very best grain feed in the world is liable to produce digestive troubles in working horses or mules if not fed intelligently and with system; and rice is no exception. The main cause of trouble has been, and is, that the work stock have been given too much of their grain feed at a time, and are not fed often enough. It is much safer to divide the day's ration into three feeds, than to feed only twice a day, as the former comes nearer to the natural way the horse or mule, with its relatively small stomach, feeds; and it can make much better use of its feed, and with much less risk of indigestion, colic, etc., following.

A useful guide in feeding horses and mules is to allow, depending upon whether the work is light, medium, or heavy, from 1 pound to 1½ pounds of the concentrated or grain part of the ration, for each 100 pounds live weight of the animal, per day.

Up to 1,000 pounds, or so, live weight, this method answers very well; but as a small animal eats more, relatively, than a large one, some judgment is necessary when using this method in the feeding of heavy horses or mules, or one is liable to give them too much for their own good, besides wasting feed.

W. H. Dalrymple.
HOG FEEDING TESTS WITH GROUND ROUGH RICE AND BREWERS' RICE RESPECTIVELY.

Conducted by E. L. Jordan, A. F. Kidder,
Assisted by L. E. Long.

SUMMARY.

The primary object of these tests was to find out if ground rough rice and brewers' rice, respectively, might have any deleterious effect upon hogs consuming them, so as to be able to reply to inquiries bearing upon the subject.

Eighteen shoats, averaging six months of age, about 140 pounds in weight, were used, and the feeding period lasted forty-two days.

The hogs were divided in two lots of nine each, and these further divided into three lots with three hogs in each subdivision, or pen.

LOT ONE, WHERE GROUND ROUGH RICE WAS FED.

Pen I. Three hogs received tankage and corn meal as a standard ration.

Pen II. Three hogs received tankage and ground rough rice, the rice entirely replacing the corn meal.

Pen III. Three hogs received tankage and equal weights of ground rough rice and corn meal.

Each mixture was fed from a self-feeder.

The hogs in Pen 1, in both Lot 1 and Lot 2, or six hogs, each receiving tankage and corn meal, made an average daily gain of 2.04 pounds.

Those in Pen 2, receiving tankage and ground rough rice, made 1.86 pounds.

Those in Pen 3, getting tankage with ground rough rice and corn meal, made 2.19 pounds.

All of the nine hogs remained in excellent health and condition throughout the 42-day test.

The three animals receiving tankage and ground rough rice were not finished quite so well as the others, but as they were found infested with worms, this may have interfered, somewhat,
with the more perfect digestion of the rough rice.

These three hogs consumed 943.5 pounds of ground rough rice in the 42 days, which was about 86% of ground rough rice in the ration, without any sign, whatever, of injury to the digestive organs, as proved by post-morten examination.

LOT TWO, WHERE BREWERS’ RICE WAS FED.

Pen I. Three hogs received tankage and corn meal as a standard ration similar to those in Pen 1, Lot 1.

Pen II. Three hogs received tankage and brewers’ rice, the latter replacing, entirely, the corn meal.

Pen III. Three hogs received tankage and equal weights of brewers’ rice and corn meal.

Self-feeders were used as in Lot 1.

The hogs in Pen 1, getting tankage and corn meal, were averaged with those in Pen 1, Lot 1, in the daily gain in weight of 2.04 pounds.

Those in Pen 2, receiving tankage and brewers’ rice, made 2.05 pounds.

Those in Pen III, receiving tankage, brewers’ rice and corn meal, made 2.30 pounds.

The hogs receiving tankage and brewers’ rice consumed 1,036 pounds of the latter in the forty-two days.

The nine hogs in Lot 2, like those in Lot 1, remained healthy and vigorous throughout the test.

Eight of the test hogs were slaughtered, and there was very little, if any, difference in the flavor of the meat; their average dressed weight was 75%.

The daily gains in weight, in all cases, were considered exceptional.
FEEDING GROUND ROUGH RICE TO DAIRY COWS

Test Conducted by R. C. Calloway.

SUMMARY.

Twelve cows were selected, at the Experiment Station Dairy Farm, based upon their average milk yield, and divided into two groups for the purpose of this test.

Before keeping their records, the cows had a preliminary period of twenty-one days in order to get them accustomed to the feed.

One group of six cows was given a standard ration from a mixture of 350 pounds of unbolted corn meal, 100 pounds of 7% cotton seed meal, and 100 pounds of wheat bran.

The second group of six cows, or the one receiving the ground rice, was fed from a mixture of 350 pounds of ground rough rice, and 100 pounds of 7% cotton seed meal.

The roughages fed to both groups of cows were similar, and included good corn and soybean silage, and good bright clean hay.

The test period ran for sixty days.

The average daily ration consumed by the six cows receiving corn meal, cotton seed meal and wheat bran was 10.4 pounds.

That consumed by the six cows fed ground rough rice and cotton seed meal was 9.7 pounds.

The average daily milk yield per cow, during the 60-day period, in the group receiving corn meal, cotton seed meal, and wheat bran, was 24.5 pounds.

That of the group getting ground rough rice and cotton seed meal, was 22.5 pounds.

It will be noticed that the cows consumed slightly less of the rice and cotton seed meal mixture than of the corn meal, cotton seed meal and wheat bran, and yielded 2 pounds less milk per day. This may be accounted for, in some measure at least, by the fact that the rice and cotton seed meal, alone, lacked the palatability of the other mixture; and it is reasonable to presume that, if the animals had eaten as much of the one mixture...
as of the other, their milk yield might have been about the same. It is probable, also, that the addition of a small quantity of molasses, say, might have made the difference by increasing the palatability of the rice and cotton seed meal mixture. The results show, however, that the mixture containing the rice compared quite favorably with the other mixture, which contained what might be termed "all standard dairy feeds."

The chief object of this test, like that of the others referred to in this report, was to find out if any injurious effects would result from the feeding of ground rough rice to cattle, especially when used as an ingredient of the cow's ration. In this case, 80% of the mixture was composed of the rice, which was fed for 60 days, plus the preliminary period, and with no ill effects, whatever, that could be observed on the digestive organs of the animals.

Note.—Besides the results summarized in this brief report, a considerable amount of data, of a more or less technical character, was obtained from these tests, which the Station hopes to be able to publish at a later date.