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P McNamara

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HOME MIXING OR PURCHASED FEEDS?

by P. McNAMARA, Adviser, Pig Husbandry

FEED is the largest single cost in pig production, so any saving which can be made will be of major importance.

Over the past three years the use of manufactured pellets and meals has increased tremendously, and there is no doubt that these products have produced excellent results, so much so that almost every pig farmer at some time asks himself the question "Should I mix my own or use purchased feeds?"

Prepared pellets and meals
Formulated to give correct balance for various classes of stock, prepared pellets and meals are convenient to feed and easy to handle. No equipment is required for feed preparation, and apart from a storage shed no outlay is required. The manufacturers must declare certain analysis information on the bag, but this does not include the ingredients used.

The cost of these rations will vary from $60-$80 per ton according to formulation, and various discounts for bulk delivery, cash settlement, etc., are available. To this cost must be added transport, which may amount to as much as $10 per ton.

Farm milling and mixing
To obtain the best results pig feeds must be accurately formulated and correctly mixed, and for this certain basic equipment is necessary. It is not sufficient to put the grain through a grister, feed it to the pigs and sprinkle meat meal on top.

Storage of grain
Bulk storage is necessary so that grain can be purchased when available and at advantageous prices.

Standard silos are marketed, but many farmers have constructed home-made storages from materials such as metal mesh and hessian.

The following storage space is required for whole grains:

<table>
<thead>
<tr>
<th>Grain</th>
<th>Cu. Ft. Per Ton</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>48</td>
</tr>
<tr>
<td>Oats</td>
<td>75</td>
</tr>
<tr>
<td>Barley</td>
<td>51</td>
</tr>
</tbody>
</table>

Feed consumption varies considerably from farm to farm, but a rough guide to quantity required on a 50 sow herd producing 14 baconers per sow each year would be:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 Sows</td>
<td>125</td>
</tr>
<tr>
<td>700 Baconers</td>
<td>175</td>
</tr>
<tr>
<td></td>
<td>300</td>
</tr>
</tbody>
</table>

Storage of supplements
Supplements include protein concentrates, minerals and vitamins, none of which will be in bulk. A dry storage area, preferably raised on a platform on a level with the feed for the hammer mill is desirable. On most farms the quantity of these ingredients will not be great at any time.

Hammer mill
The amount of feed to grind and the time available for grinding will regulate the size of mill used. Low capacity automatic mills are available which require no attention while operating, but most milling done on farms is with a high capacity mill requiring an operator.

Worn hammers and screens are common faults in hammer mills, resulting in poorly ground grain.

Mixing
For large quantities of feed mixing a mechanical mixer is essential. Vertical
and horizontal types are available but the vertical type is the most common. Small quantities can be mixed on a good concrete floor, a thorough mix being obtained by turning three times.

Mix mills
Several makes of mix mills are available, incorporating the milling and mixing process in one machine. They are usually mobile and enable the meal to be delivered to various points and discharged by auger. Machines with a high capacity and considerable throughput are required to justify high capital outlay.

Storage of meal
Normally it is convenient to mill and mix once or twice a week, but longer intervals may be desirable. Storage must be provided and the size of the bin for ground grain can be calculated from the following figures:

<table>
<thead>
<tr>
<th>Grain</th>
<th>Cu. Ft. Per Ton</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>76</td>
</tr>
<tr>
<td>Oats</td>
<td>104</td>
</tr>
<tr>
<td>Barley</td>
<td>70</td>
</tr>
</tbody>
</table>

These bins will usually be elevated so that bags or feed trolleys can be filled by gravity. The ground grain is blown up into them or augered from the mixer.

Pelleting
In some circumstances farm pelleting is desirable. Pelleting is usually a slow process compared with milling and mixing and some type of controlled delivery from the storage bin to the pelleter is required. Capital and running costs of pelleting plants are high and use of ingredients is regulated to a certain extent by the ability of the machine to make good pellets from them.

It will depend upon individual circumstances how much of this equipment is required; the cost might well vary from only a few hundred dollars to several thousand. This cost must be considered in determining the total cost per ton of milling and mixing. The labour cost involved, plus any other costs such as electricity and fuel, must also be added.

The amount spent on equipment must be related to the total throughput—the greater the throughput the less the overhead per ton.

In farm study costings, the cost has varied from $8 to $2 per ton, excluding labour.

Ingredients of home-mixed rations
In Western Australia most rations are based on wheat or barley and, in some cases, oats. The method of determining the "best buy" is outlined in "A Guide to Pig Feeding," Department of Agriculture Bulletin No. 3517.* In the same bulletin the selection of protein feeds is discussed. Large savings can be obtained by purchasing these ingredients in bulk lots at appropriate times.

The addition of minerals and vitamins is important but even with good equipment it is difficult to incorporate the small quantities needed in the mix. To overcome this difficulty, a premix using the amount of vitamins and minerals required in a ton of meal with 100 lb. of pollard should be made.

The pollard is spread on the floor and the various minerals and vitamins are sprinkled over it. It is then turned well with a shovel and bagged up.

This premix is added to the ingredients of the main mix and is thus incorporated throughout the ration.

Cost of home mixed ration—an example

\[
\begin{align*}
1,500 \text{ lb. barley} @ \$1 \text{ per bushel} & = 1,500 \times 2 \times 1 = 30.00 \\
350 \text{ lb. wheat} @ \$1.80 \text{ per bushel} & = 350 \times 3 \times 1.80 = 18.30 \\
150 \text{ lb. meat meal (55 per cent.)} @ 6 \text{ cents per lb.} & = 150 \times 6 \times 0.55 = 49.50 \\
\text{Vitamins and minerals} & = 2.50 \\
\text{Cost of ingredients} & = 52.00 \\
\text{Add milling and mixing average cost} & = 4 \times 56.00 = 224.00 \\
\text{Total cost} & = 30.00 + 18.30 + 49.50 + 2.50 + 52.00 + 224.00 = 338.30
\end{align*}
\]

The above ration is a very simple one using few ingredients. More complex rations might include several sources of protein and cost considerably more to produce. If this produced a corresponding increase in growth rate it could be justified.

Rations must be judged not only on their price but in terms of the results they produce in growth rate and conversion.

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