



## WHEAT AS A FEED FOR LIVE STOCK

Wheat has long been regarded as a milling grain of the first order but its suitability for feeding purposes is not so generally recognized by live stock feeders. Nevertheless experimental evidence and practical experience indicate that this grain may be a satisfactory and economical feed for live stock when mixed with other feeds. In periods when a wheat surplus exists or when the crop has been damaged by frost, rust or unfavourable weather at harvest time, the importance of giving wheat a place in farm rations merits consideration.

### RELATIVE FEEDING VALUE OF WHEAT

Analyses indicate that wheat compares closely with the other cereals. It contains roughly 14 per cent protein, 2 per cent fat, 69 per cent nitrogen-free extract, 2.5 per cent fibre and 1.7 per cent ash. It is thus lower in fibre and richer in protein than barley; markedly lower in fibre than oats; and lower in fat and higher in protein than corn. The fact remains, however, that all the cereal grains are rather low in protein and mineral matter, too low in good quality protein and bone building minerals to meet the needs of growing animals. Hence, the importance of supplements, of which more will be noted.

The lower grades of wheat contain less starch but a higher percentage of protein and slightly more fibre. Feeding values are not affected by grade of wheat nearly so much as milling qualities would be. Grading of wheat is influenced by such factors as colour, and condition of bran, characteristics which do not influence materially the feeding value. The biggest economic advantage is likely to result from the feeding of the lower grades of wheat; nevertheless, there are occasions such as the present, when a part of the surplus of milling wheat may profitably be fed to pigs and other live stock.

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## GENERAL CONSIDERATIONS

Wheat is fully as palatable as the coarse grains more commonly used for feed. Live stock will often take it in preference to barley.

When mixing wheat with other grains, it should be done on a weight basis, rather than by measure, because wheat weighs considerably more per bushel.

Wheat should never be ground finely for feeding. Coarse grinding or rolling is preferable because it reduces the tendency to pastiness and hence to digestive disorders.

When the market value of wheat warrants its use as a feed, it should be considered as an additional feed to augment the supply of feed grains. The addition of wheat to the farm grown coarse grains will often materially increase their feeding value.

## WHEAT FOR PIGS

Wheat like all other grains has individual characteristics and limitations in pig feeding, which require that it be used with judgment. This grain has been used in large proportions with apparent satisfaction but some experimental evidence suggests that under certain conditions hogs so fed may be penalized in carcass grade for excessive fat even when marketed at 200 pounds live weight. However, when a mixture of grains is used there should be no danger of carcass penalty traceable to wheat when it constitutes not over 60 per cent of the feed mixture.

Wheat, like all the cereal grains, requires the addition of a protein, mineral and vitamin supplement. Too meagre protein allowances lead to slow growth and inefficient feed utilization, while failure to provide sufficient minerals and vitamins may result in crippled pigs.

The farmer who has dairy by-products has a satisfactory protein supplement available. Where these feeds are not available, some other protein supplement should be provided. The combined protein-mineral supplement which is used successfully at the Advanced Registry Pig Testing Stations consists of:

Tankage or meat meal . . . . .	50 parts
Linseed oil meal . . . . .	25 parts
Fish meal . . . . .	15 parts
Iodized salt . . . . .	5 parts
Limestone or bone meal . . . . .	5 parts

There are many satisfactory commercially prepared protein concentrates of this type for the man who does not wish to mix his own. Failing a mixed supplement or milk, tankage or meat meal is the most suitable of the widely available sources of protein. For the prevention of crippling, feed one tablespoonful per pig per day of a standard feeding oil (cod liver oil, pilchard oil, etc.) until the pigs weigh 100 pounds.



## SUGGESTED RATIONS FOR GROWING PIGS UP TO 100 POUNDS AND FOR NURSING SOWS

Farm grains plus skim-milk or buttermilk at the rate of 3 pounds per pound of grain. For most satisfactory results, oats, if used, should not constitute more than one-third of the grain by weight, nor wheat more than one-half.

or

Farm grains as above, 88 parts, plus combined protein-mineral supplement, 12 parts.

or

Farm grains as above, 90 parts, plus tankage or meat meal, 10 parts.

### RATIONS FOR MARKET HOGS OVER 100 POUNDS

Farm grains plus skim-milk or buttermilk at the rate of 1 to 1½ pounds per pound of grain. Wheat should not constitute more than two-thirds of the grain mixture.

Farm grains as above, 94 parts, plus combined protein-mineral supplement or tankage, 6 parts.

For pregnant sows any mixture of farm grains containing not more than two-thirds wheat when combined with protein supplements as recommended for market hogs over 100 pounds should be satisfactory.

It is important to remember that the proportions of grain and supplements contained in the above recommendations are by weight not volume.

**Special Considerations in Feeding the Pregnant Sow.**—Many of the losses in young pigs are directly traceable to careless feeding of the pregnant sow. In addition to the protein supplements outlined above, the sow's winter ration should include a standard feeding oil at the rate of one tablespoonful per day. Well cured alfalfa hay, if available, should be supplied. A reasonable amount of exercise is desirable and *care should be taken to prevent sows becoming over-fat.*

### WHEAT FOR OTHER LIVE STOCK

**Beef Cattle.**—Wheat is primarily a fattening feed and can therefore be used quite extensively by beef producers. With legume hay for roughage, wheat can be fed generously. For fattening market cattle it is safer to feed it mixed with grains of a bulky nature. Oats are particularly suitable for feeding with wheat. It is advisable to include a high percentage of oats at the beginning of the feeding period and gradually increase the proportion and amount of wheat or other heavy grains as the period advances. Wheat should be rolled or coarsely ground for cattle.

Beef cows which are being wintered on roughage of low quality frequently require some grain feed. A small allowance of wheat in combination with oats or chaffed roughage will give good results.



**Dairy Cattle.**—Cows in milk require a generous ration which is rich in digestible nutrients, and particularly rich in proteins and minerals. When legume hays form all or part of the roughage fed to dairy cows of average producing ability, the need for costly, high-protein feeds is somewhat reduced and the cereal grains including wheat can be used more widely. Wheat may be used to replace the coarse grains and bran in the ration of the milking cow to the extent of one-third of the total grain ration.

**Sheep.**—Wheat has been fed extensively to fattening lambs and wintering ewes. It is frequently fed in the unground state, although the hard milling grades should be coarsely ground or cracked for general sheep feeding. A mixture by weight of one part wheat and two parts oats would be suitable for ewes and for lambs during the early part of the fattening period. As the lamb feeding period advances, the proportion of wheat may be increased until three parts wheat and one part oats is being fed.

**Horses.**—The best single grain for horses is unquestionably oats, although, if necessary, wheat may be used in the ration, especially for work horses. Wheat should be rolled or coarsely ground for horses and may be used with the greatest safety when fed in conjunction with a bulky feed like oats. The addition of wheat to the ration should be made gradually.

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This pamphlet is intended to emphasize the usefulness of wheat in live stock feeding. In its preparation workers in live stock production and nutrition in various parts of Canada have collaborated; the material included therein is based on data from Canadian sources and takes cognizance of feeding practices in both Eastern and Western Canada.

Further information on feed and feeding practices is available from Provincial Departments of Agriculture, Agricultural Colleges, Dominion Experimental Farms, and live stock offices of the Dominion Department of Agriculture.