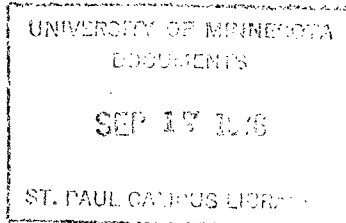


MAGR
GOVS
MN 2000 EP-no.110

Minnesota¹

Agricultural Extension Service²

Pamphlet 110³



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PROTEIN PEPS UP PRODUCTION



**BALANCED
FEEDING**

**SPEEDS UP
PRODUCTION
OF MEAT, MILK, AND EGGS**



MAKES FEED GO FARTHER



CUTS LABOR AND OTHER COSTS



*IMPROVES FINISH AND
SELLING PRICE*



GREATLY INCREASED acreages of soybeans and flax will be good news to Minnesota livestock men even if much of their land in feed crops must be diverted to cash crops grown largely to meet wartime oil demands.

Flax and soybeans are not only oil crops; they are high-protein crops as well. Because of them, the supply of protein feeds, such as soybean and linseed oil meal, will be increased at least a third this winter.

This is not only an opportunity for livestock men to balance their rations—it is a **patriotic responsibility**.

Why?

1 The war effort will be served if the protein meal, by-product of a speeded-up oils-for-war industry, is moved from the crushers and into feeding channels **as rapidly as possible**.

2 The price of protein feeds will be favorable in relation to grain, and their increased use will help conserve our rapidly diminishing grain reserves. Protein furnishes feed in itself, and it increases the productiveness of other feeds.

3 Liberal use of proteins is just about the surest way of maintaining production of the meat, milk, and eggs needed so badly to win the war.

Feeding Oil Meal

HOGS—If the cost per pound of protein is cheaper, soybean and linseed oil meal can well make up a large part of the protein supplement for hogs, replacing most of the tankage. Soybean oil meal is a slightly better protein than linseed oil meal for pigs, but both are satisfactory. Linseed oil meal should never be fed alone, however.

Feeding with pasture—Soybean oil meal may replace tankage almost entirely for pigs on pasture. A mixture of half soybean oil meal and half linseed oil meal is suitable.

Winter dry-lot feeding—For unweaned pigs, tankage or meat scrap should make up about 50 per cent of the protein.

For growing and fattening pigs, about 10 per cent ground alfalfa meal and 50 per cent tankage is necessary while soybean and linseed oil meal can make up the rest of the protein supplement. Brood sows in addition should have 20 per cent alfalfa leaf meal.

If there is plenty of skim milk or buttermilk (a gallon a day per pig), no other protein supplement is necessary.

DAIRY COWS—Dairy cows respond quickly to a liberal protein ration, especially when poor quality or nonlegume and corn fodder must be fed. Young stock do better, and calves can go on a milkless ration sooner if fed a strong oil meal ration. Some wartime rations for cows follow:

With	Grain	Soybean or Linseed Oil Meal	Salt	Bone meal
	Pounds or Parts			
Good legume hay	800	100	9	9
Limited or no silage	1,000	100	11	11
Mixed hay or limited legume (with or without silage)	800	200	10	10
No legume hay (with or with- out silage)	800	300	11	11

1. Salt and bone meal should always make up one per cent of the ration.

2. Corn, wheat, barley, and oats may be mixed in any convenient proportion. However, wheat should not exceed one half the ration.

3. Soybean oil meal, ground soybeans, cottonseed meal, or linseed oil meal may be fed interchangeably.

4. In the legume hay ration, feed 1 pound of grain for each 2 pounds (1 quart) of milk produced over 18 pounds (2¼ gallons) per day for Holstein, Brown Swiss, Shorthorn, and Ayrshire cows and for each 2 pounds over 12-15 pounds for Guernseys and Jerseys.

5. For the mixed hay and nonlegume rations, feed 1 pound of grain to 2½-3½ pounds of milk produced by medium-testing breeds and 1 pound of grain to every 2-3 pounds of milk for Guernseys and Jerseys.

POULTRY—High protein feeds make up at least 20 per cent of any mash mixture for poultry. Combinations of meat scrap, milk, and soybean oil meal give better results than when any one is used alone.

For the laying ration, some animal protein is necessary for best results. However, soybean oil meal may be used up to 15 per cent (with 7½ per cent meat scrap) provided the ration contains 1 per cent bone meal and ½ per cent limestone.

Buying Protein Feeds

Buy protein feeds according to the guaranteed analysis. Divide the price per 100 pounds by the per cent protein. For example, 44 per cent soybean oil meal at \$2.25 per 100 pounds would cost 5.1c per pound of protein ($\$2.25 \div .44$); 37 per cent linseed oil meal at \$2.00 per 100 pounds would cost 5.4c per pound of protein.

For breeder and chick rations, better results will be obtained by substituting dried milk for about one sixth of the soybean oil meal. Dried milk should make up 2½ per cent of the ration.

BEEF CATTLE—Feeding a protein supplement to fattening cattle pays. It reduces the amount of other feed necessary for 100 pounds gain, gains are faster, finish is better, and selling price is higher.

With common roughages, such as prairie hay, timothy, or corn fodder, feed 1½ pounds of protein supplement per head per day.

With legumes as most of the roughage, 1 pound of the supplement per head per day is sufficient.

If corn silage is fed, even with a good legume, 1½ pounds of protein supplement is necessary.

As protein supplements, soybean and linseed oil meal are equally palatable and produce as rapid gains, but linseed oil meal gives a better finish. If soybean oil meal is cheaper than linseed oil meal, however, it may be used more advantageously. Either may be used alone as the protein supplement.

SHEEP—For fattening lambs, soybean and linseed oil meal are equal in feeding value.

With grain and nonlegume roughage, the ration is short on protein and minerals. Feeding ¼ of a pound per day of the following mixture provides both:

800 pounds soybean or linseed oil meal

100 pounds ground limestone or ground oyster shell

100 pounds salt

With grain and alfalfa as the ration, a protein supplement usually does not pay although it does give a slight increase in gain. However, if the price of soybean or linseed oil meal is equal to or lower than grain, feeding ⅕ of a pound of either as a protein supplement pays.

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Cooperative Extension Work in Agriculture and Home Economics, University of Minnesota, Agricultural Extension Division and United States Department of Agriculture Cooperating, Paul E. Miller, Director. Published in furtherance of Agricultural Extension Acts of May 8 and June 30, 1914.

UNIVERSITY OF MINNESOTA



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