

suitable; and the following mixtures would provide the starch equivalent and protein equivalent required for the production of a gallon of milk.

- (1) $1\frac{1}{2}$ lb. linseed.
2 lb. bran.
- (2) $1\frac{1}{2}$ lb. linseed.
2 lb. dried brewers' grains.
- (3) $1\frac{1}{2}$ lb. linseed.
1 lb. bran.
1 lb. dried brewers' grains.
- (4) $1\frac{1}{2}$ lb. linseed.
 $\frac{1}{2}$ lb. oats.
1 lb. cotton cake.
- (5) $1\frac{1}{2}$ lb. linseed.
2 lb. malt coombs.
- (6) 1 lb. linseed.
1 lb. beans.
 $\frac{1}{2}$ lb. oats.
- (7) $3\frac{1}{4}$ lb. of a mixture of 2 parts by weight of linseed, 2 parts of middlings and 1 part of cotton cake.

It is necessary to keep certain considerations in mind when feeding linseed to farm animals. Linseed is extremely rich in oil, 1 lb. of seed containing rather more than $\frac{1}{3}$ lb. of this constituent. Most of the milk-production mixtures given above, therefore, would supply, per gallon of milk, about $\frac{1}{2}$ lb. of oil. If such mixtures were used too liberally in the feeding of dairy cows, it is likely that digestive disturbances would result. Linseed oil is, moreover, rather unpalatable to dairy cows, and linseed itself is very laxative.

It would be advisable, in view of these considerations, to restrict the use of linseed-containing mixtures to the first gallon of milk, employing mixtures of a more binding nature to meet the requirements beyond the first gallon. If, under these conditions of feeding, no ill effects are noted, then the allowance of linseed mixture might be increased gradually, but, when doing this, the stock feeder should keep his cows under close observation and note particularly whether they display any tendency to scour.

CALF FEED. Linseed is particularly valuable in the feeding of calves, when added to separated or

skimmed milk as a substitute for the cream that has been removed. It may be used as boiled whole linseed or as meal in the form of a porridge. For the boiled linseed, 2 lb. of the uncrushed seed are soaked overnight in 3 gal. of water, and boiled and stirred the next day for 20 minutes. Five minutes before the boiling is finished, $\frac{1}{2}$ lb. of flour (previously mixed with water to avoid lumpiness) is added to counteract the laxative tendency of the linseed. This mixture keeps sweet for several days and is used at the rate of 1 pint added to 2 quarts of separated milk.

For the thicker porridge, 1 quart of ground linseed is scalded and stirred with 1 gal. of boiling water. This is used at the rate of 1 pint of the porridge to 4 pints of separated milk for a calf 4-5 weeks old.

WARNING. Linseed should never be used with only a mere preliminary soaking in cool or luke-warm liquid. If moistened at all, it should be boiled or steamed to avoid the risk of fermentation producing dangerous substances, which has occasionally happened when this precaution has not been taken.

LINSEED JELLY. This is made by stirring the crushed seed into boiling water (10 lb. to 20 gal. water), then adding a little cold water, bringing to the boil again and allowing the mixture to remain boiling for about 20 minutes. This jelly can be incorporated with chaff, hay, bran, potatoes, straw, damaged grain, green stuff or other similar material. A firmer jelly or a form of meal can be made by stirring bruised oats, rolled wheat, chaff, etc., into the liquor while boiling the seed.

Linseed chaff may also be boiled along with the seed or the crushed hulls may be used without any separation, but if this is done the crushing must be sufficient to bruise the actual seed.