

accompanied by increase in milk and butterfat yield and loss in body weight. Underfed cows were also dosed iodinated casein, and their fall in serum magnesium was accelerated, while their milk yield rose and body weight still further declined. One underfed cow's serum magnesium fell from 1.8 milligrammes per cent. to 0.6 milligrammes per cent. after seven daily doses of thyroprotein. It is suggested tentatively that a negative balance in energy metabolism in lactating cows is a contributory factor in the development of ketosis and grass-staggers.

Tall-fescue Poisoning in Cattle.—Peripheral necrosis in cattle grazed on tall-fescue grass (*Festuca arundinacea* Schreb) has been ascribed to contaminating ergot (*Claviceps purpurea*).

Experimental feeding of cattle with hay made from tall-fescue grass which had caused an outbreak of lameness in dairy cows produced peripheral necrosis in one of three cows and transitory lameness in a second cow. The hay contained no ergot sclerotia, and it therefore appears that tall-fescue grass itself contains some substance which will cause peripheral necrosis.

Attempts to produce lesions in rats, rabbits, or cockerels which would act as a guide in attempts to extract the responsible substance have so far proved unsuccessful.

Pig Projects

Economics of Meal-feeding.—Results from an experiment using individually-fed Berkshires indicate that pigs below 70 lb. live weight may be fed up to 1½ lb. of concentrate per day; up to 1 lb. per day, between 70 lb. and 90 lb. live weight; and up to ½ lb. per day for pigs from 90 lb. to 110 lb. live weight. At this rate of feeding no monetary loss would result from the outlay upon meal.

Results from group feeding of Large Whites up to 70 lb. live weight showed that a definite profit of 0.6d. per gallon of milk fed would accrue when supplementing is at the rate of 1½ lb. of concentrate per day, 0.4d. per gallon when 1 lb. of concentrate is fed, and 0.3d. per gallon when ½ lb. is fed. From 71 lb. to 90 lb. live weight both 1 lb. and ½ lb. per day show a margin of 0.1d., but 1½ lb. is definitely not profitable.

Because of milk shortage, group results are not available beyond this point.

Although all pigs received as much milk as they could consume in five feeds per day, the feeding of meal supplements effected a substantial saving in daily milk intake. This saving was as high as 1.5 gallons per day between pigs receiving 1½ lb. meal per day and those receiving milk alone. Increasing meal supplements increased the savings effected. This held for both individually-fed and group-fed pigs.

Daily weight gains were slightly increased by increasing meal supplements in the case of individually-fed pigs and materially increased in the case of group-fed pigs.

The feeding of meal in these quantities enables sows to be farrowed earlier in the spring and the weaners to make rapid early gains and thus reach a weight at which they can cope with the spring milk flush. The feeding of meal to summer and early-autumn litters enables them to reach porker weights before winter and also release milk for feeding spring-born baconers.

Effect of Housing and Pasture on the Efficiency of Food Conservation.—Though complete data are not yet available it appears that no significant saving in milk per pound of live-weight gain can be effected by allowing fattening pigs access to pasture. Neither the type of housing nor the level of feeding provided influenced the economy of live-weight gain. The types of houses under comparison were the Danish and the open-fronted fattening-house, both of which are much superior to average farm equipment, but about which there is much controversy.

Incidence of Crooked Jaw in Pigs.—At the request of the New Zealand Pig Breeders' Association the incidence of the abnormality known as crooked jaw in Berkshire pigs was investigated in the Northland area, from which breeders had reported considerable trouble.