



Wellcome Film Project

A Question of Balance

Presented by Cooper McDougall & Robertson Ltd, UK Division, c1959.

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Filmed by JA Patrick.

Colour

Duration: 00:17:56:15

00:00:00:00

<Opening credits over fields of corn, then weighing scales>

<Unspecified narrator over shots of boor's head, then boor's head wall decoration, then pub sign>

In Britain, the wild boor is a thing of the past. Today it is most likely to be seen as a wall decoration, a trophy from a hunter's former days. Or perhaps a quiet stroll in the country will provide another example of what the animal once looked like.

<Narrator over shot of pig, then cows>

Over the years, domestication and breeding have changed it into the boor we are familiar with today, like this full brother to the supreme champion of Smithfield in 1958.

Cattle too have evolved by selective breeding, from these wild white cattle of yesterday. The change has been brought about by skilful breeding to produce the solid, blocky, beef animal now seen on the modern farm; the type of animal which best meets the requirements of the up-to-date stock breeder.

Wellcome Film Project

<Narrator over shots of cow being treated, modern henhouse, record-keeping, pig progeny testing station>

He is helped in his task by the growing improvements in methods of animal husbandry. For example, veterinary science makes full use of the latest discoveries to keep an animal in good health. The installation of modern specialised buildings and the use of up-to-date equipment which minimises the labour required for feeding, watering and cleaning out does much to encourage the keeping of adequate records of livestock performance. Not only on the farm but also at centres like the pig progeny testing stations throughout the country.

<Narrator over shots of various farm animals feeding>

To these advances, there must be added feeding. Breeding and good husbandry methods alone are of little avail without adequate supplies of good food. Whatever the enterprise, the cost of the food is a large item. Efficient management can do much to prevent food being wasted – convenient forms such as pellets prevent losses during handling before the ration is eaten by the animal. Individual feeding makes certain that all animals get enough food instead of some too much and others too little. But even so, first-class animals cannot be produced on poor quality feed.

Grass provides a large proportion of a cow's diet. *<shots of agricultural equipment>* Improvements in the use of grazing and the conservation of grass as silage and hay are the well-known results of research into feeding problems. The application of the nutritionist's and engineer's knowledge can be seen in practically any grass field at the right time of year.

<Narrator over shots of laboratory work, then farmers working with animal feeds in bulk>

But behind the scenes, detailed research has been unobtrusively devoted to the problem of feeding livestock with concentrated feeds. In this, the animal food industry is helped by the specialist laboratory, as well as its own.

Wellcome Film Project

Through this combined research, the animal food industry is continually trying to improve further the quality of its products. Some farmers are also making use of the new knowledge now available to them to mix feeds for their own stock. Just as they have always appreciated the need for water *<shot of water trough>* as a nutritional factor and have always taken care to provide *<cow drinking>* a good clean supply.

00:05:08:10

<Narrator over shots of animal feeds being manufactured, interspersed with shots of a wide range of food sources>

High quality, well-balanced feeds have to contain a large number of nutritional factors. These are energy – in the form of carbohydrates and fats, proteins, minerals and vitamins and sometimes drugs.

The carbohydrates are selected from several feeding stuffs which may have the required nutritional value. Although grain feeding is common, however, every farmer knows that no single feeding stuff is a complete ration. Cereals have to be balanced with other feeds, particularly those containing more protein.

Fish provide an excellent source of animal protein when processed and made available as fish meal. Much of this fish meal is produced in this country, but vegetable protein feeding stuffs have to be brought into this country from abroad. Vegetable proteins come from all over the world, such as ground nuts from India, coconut from Africa and linseed from South America. Some, such as soya bean, are already processed into meals and cakes; in other words the oil has been removed from the seed or fruit before shipping. Such large quantities are shipped intact and the oil is extracted or expelled in this country.

Then there is the addition of minerals, including trace elements such as manganese. These are often added to a feed to increase the levels which are present naturally.

Wellcome Film Project

Finally, a well-balanced feed has to contain the ingredients which are essential for the health and growth of a thriving animal – vitamins. Although vitamins weigh only a tiny fraction of the whole feed, their inclusion is of vital importance. What are vitamins? Put quite simply they are nutrients which are essential to life, in fact they are truly vital. The number of vitamins appears to be never-ending but fortunately the feeding stuffs used in most rations supply the majority of them and apart from a few, very specialised feeds, the only vitamins which require further consideration are vitamin A, vitamin D and vitamin B₂ which is often called Riboflavin.

00:08:28:00

<Narrator over shots of livestock in fields, usually grazing, and in barns and other indoor environments>

But some farm animals, in particular the ruminants, are not entirely dependent on the mixed or concentrate ration for all their vitamin requirements. The ruminant's digestive system has been devised to make use of the whole plant, not only the seeds or fruit, and succulent or roughage foods form a large part of a daily feed.

Cows, for example, eat grass which, like all green foods, contains carotene, and this is converted into vitamin A within the animal body. Unfortunately, animals vary in their ability to carry out this conversion but cattle and sheep eat so much green food that additional vitamin A is not usually required.

Chewing the cud is associated with what is called rumination, and this is another characteristic of ruminants which affects their vitamin requirements. In the paunch, ruminants have their own factory for making the vitamin B group and these hardly ever have to be added to their rations. But even early-weaned calves cannot safely be classified as ruminants until they are several months old, and until then their diet must contain a plentiful supply of vitamin A, vitamin D and vitamin B₂. In this respect, calves are more nearly like pigs than poultry which always require the addition of vitamin supplements to their food supply.

Wellcome Film Project

Because vitamin supplements are an accepted part of a livestock ration nowadays, serious vitamin deficiencies are unusual, even in stock reared intensively.

These birds are six weeks old but they are obviously in poor condition. Accidentally, vitamin A was omitted from their rations; a deficiency of any vitamin reduces the growth rate and when the shortage is prolonged, as it was here, the difference between a normal and a deficient bird of the same age becomes apparent, even without weighing. Growth, to produce meat, is perhaps one form of production, eggs are another.

<Narrator over shots of egg production and eggs>

Profitability in egg production is not just a matter of how many eggs are laid. Eggs are handled many times, they have to be collected and carried to the packing room where they are allowed to cool before being placed into crates. The crates then have to be loaded onto a lorry, and all this happens even before they start their journey to the packing station. A normal, well-formed egg shell is a good container. Some hens, however, have their own idea on shape and size and oddments like these are found everywhere.

Some of the abnormalities may be due to disease but among this collection several of the eggs are broken. Breakages are often due to flaws in the shell which, as long as adequate minerals are provided, could well indicate the need for the inclusion of more vitamin D in the feed. It is these thin areas in the shell which render eggs liable to breakage and they represent one source of loss to the poultry farmer.

00:12:23:00

<Narrator over shots of hens and pigs alternately>

Wherever livestock are kept, food bills always account for a large proportion of the cost. A bird or animal is not a very efficient factory for converting animal food into

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human food and anything that will help to improve the efficiency will add to the profitability.

Even in the worst climates, animals kept out of doors will be exposed to some sunlight; as a result, vitamin D is formed on the skin to be absorbed into the animal's body. If we can find a space, *<shot of people sunbathing on a sandy beach>* the beach is a good place for us to acquire vitamin D from the sun and so it's a pity that vitamin D can easily be washed off when bathing. Few pigs *<back to shots of pigs in field, then eating from trough>* go bathing so they should get more benefit from the sunlight. But even those kept outside until weaning have afterwards improved their food conversion when vitamin D was added to the rearer ration.

Riboflavin also has a considerable effect on food conversion, especially in fattening pigs. The optimum level depends upon the temperature *<shots of pig sty>* and this is affected by the structure of the house where the pigs are kept. The better the insulation, the less riboflavin required; but even so, the addition of riboflavin to practical diets has improved the food conversion.

If all the necessary vitamins are provided, the profitability of livestock can be improved.

<Narrator over shots of vitamins for animal feeds being researched and prepared>

How can this provision be guaranteed? Simply by making the best use of the available facilities in choosing the correct vitamin supplement. Vitamins are required in such small amounts that it is not possible to just add the vitamins themselves to the ration and be certain that they are efficiently dispersed. It is a skilled job to blend them into a bulk which will make their final inclusion into the compound feeds less difficult.

The development of vitamin products requires painstaking and extensive research which has to be followed up by a rigid control of the materials in the laboratory and at

Wellcome Film Project

the factory, even though it may involve a complicated analysis to ensure that each bag of supplement contains the guaranteed amount of vitamin.

All these efforts, however, would be wasted if the supplement is not used at the correct rate. And if the best possible use is to be made of the supplement, it is necessary to compose the ration with the most suitable mixture of feeding stuff. It is a skilled job to formulate compounds, one demanding calculation as well as practical knowledge. This knowledge is available to those who seek advice as to what a balanced ration should contain, and what additives are necessary, especially vitamins.

<Narrator over various shots of farm livestock>

It is as simple and as difficult as that. In the rearing of livestock there are three lines of approach, and they are all interdependent. Breeding for the shape of animal that provides the type of product the consumer requires. Housing in the best possible way including the use of up-to-date equipment to minimise labour problems and to encourage the keeping of adequate records of livestock performance. Not only by giving livestock enough to eat but also by providing them with food of the highest quality. Food which contains all the ingredients for maximum animal production at the lowest possible costs. These are the factors which make animal production a profitable enterprise on any farm.

<End credits>

<In addition to those listed at the beginning>

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