

## In-Depth Look at Veal Production

**Anthony H. Andrews, B. Vet. Med., Ph.D., M.R.C.V.S.**  
*Public Relations Officer*  
*British Cattle Veterinary Association*

"Veal production is of a size significantly disproportionate to the attention, publicity and interest which it produces in the profession and the general public. But it is a real industry." Thus **Philip Paxman** (Volac) opened up the session on veal production for the British Cattle Veterinary Association audience of about 70 during their April meeting at the Lancashire College of Agriculture, Myerscough. Mr. Paxman went on to say that its importance worldwide was in the disposal of surplus bull calves and skim milk powder. The type of meat had the least saturated fatty acid content and in Britain over the last few years the intensive crate system had changed to a yard system. Veal was derived from fattening dairy calves to produce a carcass of 105-120 kg, giving a tender, high quality, light-coloured meat with little marbling. It had an easily covered, delicate flavour useful for succulent dishes. Besides the milk-fed calf, which accounted for about 40,000 calves in 1984, there was also the bobby calf of the Ayrshire or Channel Island breed slaughtered at seven days old with a carcass of 20 kg and which was used for manufacturing. The value of the trade in Britain is £16 million annually with 8,000 tonnes of milk produce used and allowing employment of 200 people. About 4,000 tonnes of veal are produced annually in the United Kingdom, resulting in about one per cent of meat production, and the amount consumed per head of the population is 0.25 kg.

Traditional to veal, Mr. Paxman said, was the conflict between the demands of grazing of dairy and beef cattle and the annual calf crop. The weaning of calves in spring and autumn meant a supply of milk-fed animals of high quality. In the 1960's interest centred on feeding calves with milk by-products, particularly in Holland, and the Dutch system with individual wooden crates and a controlled environment was instituted. In some cases an iron-deficient diet was fed and the animals were kept in semi-darkness. The extremes of the system have long since disappeared and only about 5,000 calves per year are produced in crates. Exports of calves for veal production had also occurred and are now at a level of about 200,000 per year. If in fact there were no exports then up to 1,000,000 extra calves would have been available in 1980-1983 and at the export price of £100 maximum, the value at slaughter would be £350 million, with an added value of £250 million and an employment opportunity for 1,250 people.

When the crate system was introduced the crates had slatted floors with 24" width and were 5'6" in length. There were problems with the system, including that the capital costs are high and the stockman spends most of his time



*Left to right: Joe Brownlie who presented the award winning paper at the Congress. Michael Vaughan, 1985-86 President and Professor A. Steele-Bodger.*

mucking out. However it is possible to rear veal calves in a deep litter system and this is now the main system of British production. The costs of housing are reduced and there is a lower labour input. Hereford cross Friesian calves were suitable for the system. Veal used to be sold via the Smithfield Market but now the meat is often available in supermarkets. In many cases Volac owns the calves, having them reared on other farms, often of the family type. The Company provided a dossier on management and advised in veterinary matters. With Hereford cross heifers their initial weight was 90 lbs, increasing to 400 lbs with a carcass of 230 lbs and a killing-out percentage of 51. The returns on the calf are £246.10 and total costs of the system are £226.50, resulting in a margin of £19.60. Mr Paxman then went on to predict the future. He suggested that veal production could result in 75- or 80,000 calves per annum. If the number of calves for export were reduced or prohibited then there would be a substantial further uplift in production. The yard would be used in other countries and at present it has been adopted by America and Australia, and is being tried in Holland.

The husbandry and economics of veal production were discussed by **Professor John Webster** (Bristol Veterinary School). The major problem with veal production was animal welfare. In all production systems there was a need for freedom from factors such as malnutrition, thermal and physical discomfort, injury and disease, fear and distress, and suppression of "normal" behaviour. Professor Webster then outlined work undertaken over the last three years.

Studies had involved the use of crates plus dry roughage as opposed to deep straw, with *ad libitum* milk from an automatic dispenser. The group system could also involve the use of slats and bucket, or the use of straw and bucket feeding. It was also possible to restrict milk feed of calves in groups by means of transponders placed on the necks of the calves. The calves took about three hours to learn how to operate the computer at a week old. A second system, called the "milk and cookies" system, involved allowing access to restricted milk substitute as well as a dry starter feed, fed with an out of parlour feeder. Looking at the behaviour of calves sucking and those in straw yards and crates, those in the crate spent most time lying down and least time sleeping. Drinking behaviour was highest in yard calves fed *ad lib.* and more time was spent ruminating and eating in the suckler calf situation. Self grooming was most common in the straw yards and least in the suckler calves. Sucking other calves was most common in the crate system and least in the suckler animals. However, both calves in crates, with and without straw, spent some time licking inanimate objects, but although high, the degree of mouthing activity in the day was still less than for suckler calves and those in yards. Thus it could be argued the behaviour of calves in crates was not abnormal.

When comparing the system of bucket feeding in crates and yards as well as yard *ad libitum*, controlled and controlled plus cake feeding, some interesting results were produced. Thus the crate system, with or without slats, produced a high death and cull rate (9 per cent) with much illness (63 per cent of calves), and the disease problems were mainly of the gut with a high level of bloat. Bucket feeding in yards was not a success as there was a high mortality (21 per cent) with many animals ill (71 per cent) and a large number of the alimentary problems were in animals over 10 weeks old with a weight of 150-160 kg, and so in consequence a severe financial loss. In the *ad libitum* system in yards, deaths (8 per cent) and disease (60 per cent) were similar to those in the crate system. In the controlled animals there were no culls or deaths and the disease level was 29 per cent, with disease problems being various. In the controlled milk intake there was again no mortality or culling and only 19 per cent were ill, from varying causes.

In a comparison between Friesian calves in crates with and without straw and in yards fed by bucket or teats, the average killing out percentage was best in calves in crates without straw or the teat feeding in yard with daily live weight gain in the latter being best and worst in the former. The milk powder consumed was about 50 kg more for the *ad libitum* yard system as opposed to the crate or restricted yard system. This meant that the feed conversion rates for milk substitute were worst in this *ad libitum* yard group, followed by the restricted crate system. Using Hereford cross Friesian calves in yards, fed milk or milk plus solids,

daily liveweight gain was better in the latter (1.12 kg versus 1.02 kg). The milk powder consumed was higher in those not on solids (213 kg versus 178 kg) resulting in a poor feed conversion ratio (1.71 versus 1.42).

Looking at the economics of the system, the total returns for Friesian calves crated were £225 per calf with total costs of £205, resulting in a difference of £20. But mortality and cull costs were £33 thereby leaving a margin of -£13. In yard systems, Friesian rearing, the return was £236 but costs were £243, making a difference of -£7 which rose to -£37 once mortality and culls were considered. In the Hereford cross Friesian cattle with a good *ad libitum* system the total returns were £200 and the costs £202 producing a deficit of -£2 and with the deaths and culls this rose to -£29. Using a controlled system of milk feeding in yards plus dry feed resulted in a return of £201 with costs of £185, making a margin of £16, which reduced to a gross margin of £13 when mortality and culls were included.

Later on the members went to look at a veal unit using the *ad libitum* yard system with Hereford cross Friesian calves. The farm, belonging to **Mr C. Collinson**, was introduced by his veterinary surgeon, **Roger Herdman** of Bilsborrow. The calves came in at two weeks old when 40-45 kg and they left at 16 weeks at 158-190 kg. The calves were bedded on deep straw and usually developed a nutritional scour in the first 10 days of life. Digestive upsets often occurred in well grown animals and a small proportion of animals developed a toxæmia and septicaemia. Respiratory disease usually occurred early at 5 to 8 weeks and it was important to ensure a good flow of air with a low ammonia intake. Most problems arose on still, muggy days. Lameness was sometimes seen at 8 to 10 weeks old and these cases were joint orientated and it was considered they might be due to rapid calf growth. The concentration of the milk substitute is increased from 9 per cent at 5 weeks to 17-19 per cent at week 16. On the visit the calves seemed quiet and contented and provided a good shop window for veal production. This was particularly so as the farm also had a shop where the end product could be purchased.

**At the British Cattle Veterinary Association Annual General Meeting held at the Lancashire College of Agriculture, Myerscough, on Wednesday 17th April 1985, the following officers were elected:**

<b>President</b>	<b>Mike Vaughan</b>
<b>Junior Vice President</b>	<b>Ian Hutchinson</b>
<b>Senior Vice President</b>	<b>Bryan Jeffrey</b>
<b>Honorary Secretary</b>	<b>David Watson</b>
<b>Honorary Treasurer</b>	<b>Ian Baker</b>
<b>Programme Secretary</b>	<b>Andy Forbes</b>
<b>Clinical Research Officer</b>	<b>Robin Pepper</b>
<b>Public Relations Officer</b>	<b>Tony Andrews</b>