Milk Production in India

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IN India the yield of milk varies from 65 lbs per cow per year in Madhya Pradesh and Vindhya Pradesh* to 1,445 lbs per cow in the Punjab. The highest yield is thus 22 times the lowest. For buffaloes, it varies from 315 lbs in Assam to 2,500 lbs in Saurashtra. The all-India average is 413 lbs for cow and 1,101 lbs for buffalo. India produces 2,130.64 lakh mds of cow milk and 2,665.61 lakh mds of buffalo milk. Out of 5,203.38 lakh mds of milk produced in India, the cow accounts for 46.71 per cent, buffalo 51.23 per cent and goat 2.06 per cent.

The per capita availability of milk per day stands at 5.26 oz. This is a little more, than half of the

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* These and subsequent calculations are based on figures given in Indian Livestock Statistics, 1952-53 (1955). Figures for States prior to Reorganisation, consumption of 10 oz recommended by the Indian Council of Medical Research, but even this low per capita production is not within the reach of 15 out of 21 (pre-reorganised) States. In Kerala (1.27 oz), and Assam (1.29 oz) per capita availability is less than one-fourth of the all-India figure; in Orissa (2.38 oz) and West Bengal (2.43 oz) it is less than half; and in others, except in Himachal Pradesh (20.4 oz), Punjab (17.43 oz), PEPSU and Saurashtra (both 14.4 oz), Rajasthan (12.31 oz) and Ajmer (1.02 oz), it is only between 1.27 oz and 7.07 oz.

UNEVEN AND LOW

More milk from cow than buffalo is produced in Assam, Bihar, Madhya Pradesh, Orissa, West Bengal, Jammu and Kashmir, Rajasthan, Kerala. Ajmer and Himachal Pradesh. Buffalo milk predominates over cow milk in Bombay, Madras, Punjab, U.P., Hyderabad, PEPSU, Saurashtra, Delhi and Vindhya Pradesh. In Madhya Bharat and Mysores the two types of milk are evenly distributed.

The production of milk in the different States is uneven and low. This is reflected in low availability. According to a National Sample Survey (NSS) 1951, the annual consumption of milk (in seers) per person was 664 in North-West India, 30.1 in West India, 24.2 in North India, 18.1 in Central India, 13.1 in South India, and 11.7 in East India. To even out this alarming disparity, provision of requisite food for milch animals, and correction of the proportion of milking to non-milking animals are necessary.

The first need is an assessment of the requirements for maintenance of cattle and of the value of the milk produced based on scientific standards. This division has its origin in the fact that the food value of a unit of milk of a given fat...
content is about the same, but the maintenance cost (per lb or kg) is higher for smaller than bigger animals. For instance the basal metabolin of a ½ lb rat is 23.0 calories or 47.2 calories per lb; but for a 8050 lb elephant it is about 3092 calories or 3.66 calories per lb. Per weight unit, therefore, the food requirement of a rat is 13 times that of an elephant. Maintenance requirement follows this law, and until this is satisfied, there will be no surplus, and the animal will draw upon its reserve.

**Total Digestible Nutrients**

An assessment of food nutrients (Total Digestible Nutrients or T D N) for maintenance and production, will provide the estimate on the basis of which the corresponding food production can be planned. This has been attempted by calculating the cost of necessary T D N required; and the provisional calculation shows that the maintenance of India's 189.53 lakh cows-in-milk involves 103.11 lakh tons T D N costing about Rs 363 crores or one crore a day. This cost is 3.4 times value of the corresponding production of milk (89.29 lakh tons); and assumes 910 crores or 8.5 times on overall basis of maintenance of 475.34 lakh milking and non-milking cows.

In the case of buffaloes, the maintenance share of 102.2 lakh milkers amounts to 79.9 lakh tons of T D N worth Rs 281 crores. This is 1.8 times the corresponding value of the production of 98 lakh tons of milk involving 44.85 lakh tons of T D N worth Rs 158 crores. On overall basis the maintenance cost of milkers and non-milkers adds up to Rs 586 crores or 3.7 times the value of production.

In terms of combined values it shows that

i. the mere, maintenance of milking and non-milking cows and she-buffaloes swallows up Rs 1496 crore out of Rs 1760 crores;

ii. out of Rs 1496 crores, non-milkers (cows and she-buffaloes) account for 852 crores or 57 per cent;

iii. out of 852 crores, non-milking cows alone swallow 547 crores or over 64 per cent.

When these costs are equated against the return from the, estimated sale proceeds from milk (at Rs 15 and Rs 23.23 per md for cow and buffalo milk) amounting to Rs 365 crores for cow milk and Rs 622 crores for buffalo milk, the cow registers a loss of Rs 105 crores on the basis of milkers only, and Rs 652 crores on overall. The buffalo shows an apparent profit of Rs 183 crores on the basis of milkers only, but it also turns into a loss of Rs 122 crores on overall basis.

Thus though according to the authors mode of calculation, cow and buffalo milk produced in India is worth Rs 987 crores, the total expenditure for its production amounts to Rs 1,760 crores involving a heavy recurring loss of Rs 774 crores. This is equivalent to 6.7 times the amount we are annually spending on importing foodgrains!

While this is the all-India picture, the condition in a good many States is considerably worse. On overall basis, the cost of maintenance of cattle and the value of milk production does not balance even in the top-ranking States on account of disproportionate maintenance cost which, in the case of cows, is 2.5 times the value of milk in the Punjab, 3.6 times that in Saurashtra, 4.96 in Rajasthan. 5.76 in U P, 6.87 in Bihar, 8.9 in West Bengal and Madras, 14.67 in Mysore, 25.7 in Vindhya Pradesh and 26.6 times in Assam. In the case of buffaloes also the maintenance cost exceeds the value of milk production and on an overall basis, it ranges from 1.53 times the value of milk for Saurashtra and 1.7 times that for Punjab rising to 7 times for Vindhya Pradesh and 12.83 times for Assam.

**Non-milkers and milkers**

One very important reason for the excessive maintenance cost is the preponderance of non-milkers over milkers. With the exception of Saurashtra, Delhi, PEPSU Punjab and Assam in which non-milking cows are proportionately less, and in Bombay in which they are even in the remaining 15 pre-reorganised States, non-milkers predominate over milkers, and in some, as in Hyderabad, they are 3.1 times, in Orissa and Mysore 2.3 times, in Kerala and Bihar 1.8 times, and in West Bengal 1.5 times the number of milkers. In the case of buffaloes, the States of Bombay, Punjab, PEPSU, Rajasthan, Saurashtra and Delhi have more milkers than non-milkers. In West Bengal, Madhya Pradesh and Madras they are evenly divided. In the remaining States, non-milkers dominate over milkers, but not to the same extent as in the case of cows.

The yield of milk is generally too low to warrant a profitable return. In the midst of lack of fodder (without which no increase of milk production can be expected) the huge horde of non-milkers compete with the milkers in their scramble for the scanty available supply. The problem is complicated by shortage of grazing and fodder land, careless management, lack of a sense of urgency, and the like. The study of some of these aspects of the problem is being pursued, and when sufficiently advanced, it is expected to throw more light on this important subject.

**Marconi Multi Channel Equipment for S E Railway**

AN order has been placed with Marconi Wireless Telegraph of Britain by Bharat Electronics for supply of a very-high-frequency multi-channel communications system for the South Eastern Railway. This is the first order given since the recent signing of an agreement between the companies for the right to manufacture Marconi multi-channel equipment in India.

The equipment to be supplied consists of 16 HM-100 terminals and eight HM-150 repeaters, with aerials and ancillary gear. It will be used to provide communications over the route connecting Adra, Tatanagar, Chakradharpur, and Garden Reach. The contract is for the supply and installation of the complete system including towers, diesel generators, telegraph equipment, and teleprinters.

**Fuel Abstracts & Current Titles**

The Institute of Fuel has recently launched a new publication entitled 'Fuel Abstracts and Current Titles.' It provides a monthly summary of world literature on all technical and scientific aspects of fuel and power and is intended to aid all those who are engaged in research in Fuel Technology and to those who are concerned with the many technical application of fuel.

The annual subscription for this monthly is £ 1-12s including index and postage. It can be obtained from the institute of Fuel, 18 Devonshire Street, Portland Place, London W.1.