

11. ANIMAL HUSBANDRY IN JAPAN

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The position of animal husbandry in agriculture is rather low in Japan, as compared with that in European and American countries. This has been brought by her long history where rice farming has been emphasized to an extreme extent.

With the advancement of national economy, consumption of products of animal origin has markedly been increased. At present, animal husbandry has become the nucleus of an improved structure of agriculture and is expected to make rapid progress in near future.

State of livestock farming by domestic animals

1. Dairy cattle

Practically all dairy cattle now being raised in Japan are Holstein Friesian and there are other breed such as Jersey accounting for 1% of the total. The total dairy cattle population in 1973 was 1,780,000 head, which witnessed an annual increase rate of 4.7% during the last 10 years. On the other hand, the number of dairy farmers has been declining every year with 1963 as the peak to 212,000 in 1973. This is due to the decline of dairy farms with small herd, which can be interpreted to mean that dairy farming is gradually changing from the subsidiary dairy farming to main occupation.

As for the improvement of dairy cattle the target was set forth in 1968 to increase the conformation, to replenish hind quarters, to increase milk yield and to improve milk quality. The conformation is being improved as well as the increase in body length and the replenishment of hind quarters. Further improvement are being schemed. As to breeding of milk cow, projects are carried out, taking a marked line to achieve improved breeding by making efficient use to breeding bull selected reasonably in view of characteristics of frozen semen through management of artificial insemination center in wider region.

2. Beef cattle

Beef cattle farming in Japan was originated from draft and beef cattle farming up to around 1955. However, a very rapid growth of agricultural mechanization has changed the object of cattle farming from draft cattle to beef production. On the other hand, due to socio-economic changes in the regions the beef cattle population of 2,313,000 head in 1951 which was the peak, was gradually declined to 1,552,000 head in 1967. But since then the population increased due to price hike of calf and various measures taken for promotion of beef cattle, and recovered to 1,759,000 head in 1971 which includes 186,300 head of dairy bull calves for fattening. Practically all beef cattle of Japan are Japanese Black followed by Japanese Brown, Japanese Shorthorn and Japanese Polled besides some foreign breeds. The most typical beef cattle of Japan is the Japanese Black established after a long period of selection by means of Japanese native cattle with foreign breeds such as Brown Swiss imported during 1900s. The Japanese Black is characterized by black hair and superior meat

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quality, particularly the marbling of fat in muscles. And the taste of beef is highly preferred by Japanese. The demand for beef is expected to increase along with the growth of national income, and one of the problems confronting the administration of animal industry is to increase beef cattle resources, to produce beef cattle with more meat productivity and to improve the economic conditions by increasing the size of herd. The increase of beef cattle production is one of the major policies of agricultural administration.

3. Pig

The pig population is increasing in long-term because of ever increasing demand for meat supported by the change of national diet pattern but in short-term the pig population undergoes, a periodical fluctuation so-called Pig Cycle in accordance with the fluctuation of pork price. The population as of 1973 was 7,490,000 head which constitutes about 4 times 1960's. The number of pig farms is 321,000 and average size of herd is 23.3 head. Heretofore, Middle Yorkshire and Berkshire have been raised as purebred but from 1960s the Landrace was introduced from Sweden, the Netherlands and the United States because of increased demand for more red meat with less fat, and the same has been propagated, at the same time, the crossbreds thereof with Middle Yorkshire and Berkshire have been made. Recently Large Yorkshire and Hampshire breeds have been imported and propagated, and major portion of pig for fattening purpose are the crossbreds thereof. Major races raised in recent years are composed chiefly of Landrace (23%) followed by Middle Yorkshire (2.6%), Large Yorkshire (2.4%), Hampshire (2.2%) with the rest 69% of crossbreds.

4. Poultry

Poultry industry in Japan has achieved a most remarkable development due to increased demand for egg and meat. The population of layer was 121 million and that of broiler, 80 million as of 1973. The egg production during 1971 was about 1.8 million tons eggs and the chicken meat, about 626,000 tons out of which the broiler constitutes 486,000 tons accounting for 78%. Average egg production per layer per annum is 235 eggs, and average marketed broiler weight is 1.74 kg.

A far reaching change has been witnessed in the races for egg purpose. The study thereof by the number of day-old chicks hatched in 1960 revealed that two breeds occupied a major portion, 61% by White Leghorn and 22% by Rockhorn but in recent years White Leghorn including foreign breeds thereof occupies a large portion.

The broiler production developed in full scale from early 1960s. The ratio of meat type in the hatched number of chicken to broiler reached 92% in 1971. Share of poultry imported increased gradually in Japan as from early days of 1960. As it is essential to develop excellent layer and broiler suited to conditions here for the promotion of poultry industry in future, the Ministry of Agriculture and Forestry succeeded in breeding of poultry of native origin with high productivity and of superior quality owing to it's efforts for improved breeding done chiefly by Poultry Breeding Station. So it is making extension and propagation of that kind of poultry through indigenous breeding stock propagation center at present.

5. Horse

The horse promotion program was initiated in Japan in early 1900s, and the horse population reached to 1.5 million head in 1906 under the Government's far reaching protective policy. However, because of the change in policy after the end of the last World War and in the types of livestock farming the number of horse

began to decline, particularly, a rapid development in agricultural mechanization displaced draft horse, bringing about a drastic decline in number in recent years. Thus, the horse population was only 78,830 head in 1973.

Table 1. Number in total of livestock and number of head per farm

Year	Dairy cattle			Beef cattle			Pig		
	No. of farms*	No. of head*	Average size	No. of farms*	No. of head*	Average size	No. of farms*	No. of head*	Average size
1955	254 (13)	421 (18)	1.7	2,280 (3)	2,636 (4)	1.2	528 (11)	825 (-1)	1.6
1960	410 (6)	824 (10)	2.0	2,031 (-3)	2,340 (-1)	1.2	799 (-15)	1,918 (-15)	2.4
1965	382 (-5)	1,289 (4)	3.4	1,435 (-14)	1,886 (-15)	1.3	702 (-1)	3,976 (15)	5.7
1970	308 (-5)	1,804 (8)	5.9	902 (-5)	1,789 (0)	2.0	445 (-3)	6,335 (17)	14.2
1973	212 (-13)	1,780 (-2)	8.4	595 (-12)	1,818 (3)	3.0	321 (-6)	7,490 (7)	23.3

Note: The figures in parentheses show the percentage in comparison to that (continued) in previous year. (- : decrease in number)

* unit 1,000

Table 2. Number in total of livestock and number of head per farm—continued

Year	Egg-chicken			Broiler		
	No. of farms*	No. of head*	Average size	No. of farms*	No. of head*	Average size
1955	4,508	45,715	10	—	—	—
1960	3,839 (-1)	54,627 (13)	14	—	—	—
1965	3,243	120,197 (11)	37	20 (-3)	18,279 (39)	812
1970	1,703 (-12)	169,789 (8)	100	17 (0)	53,742 (31)	3,161
1973	843 (-20)	121,004 (-26)	144	15 (0)	80,177 (18)	5,345

Demand and supply of livestock products

1. Milk and milk products

The dairy farming is a most remarkable developing sector of Japan's animal industry in recent years, and milk production reached over 4,930,000 tons in 1972 which accounts for about 2.6 times 1960's. The study of milk production trend during this period reveals the increase of more than 10% each year over the previous year up to 1963 to comply with the demand increase. But from 1964 to 1967 the production tended to stagnate particularly, and was on the decrease gradually from 9% to 5% and in 1968 upward again 2.6% increase was witnessed and the same increasing trend continued into 1969 with 12.3% increase. But in 1970 milk production dropped to 5.6% increase as compared with that in previous year, and in 1971 was a little on the increase of 1.2% in comparison with that in previous year, and then in 1972

is showing a little upward trend. On the other hand, the increase in the consumption of drinking milk etc. which was heretofore increasing at the rate of 10% over the previous year up to 1966, stagnated in 1967 and growth rate was gradually a little on the decrease thereafter, showing 1.5% in 1971 as compared with that in previous year. On the other hand, supply of raw milk for milk products used to vary in growth rate year in year out while trend of supply and demand of milk products as a whole showed a little shortage in supply from 1965 to 1967, a little surplus in 1968 and 1969, being well balanced as from 1970.

2. Meat

(1) Consumption of meat

Consumption in volume of meat per capita in Japan is still much less than that in developed foreign nations although it was 2.3 kg of beef, 5.1 kg of pork, 4.3 kg of chicken and 2.0 kg of other kind of meat, totalling in 14.6 kg in 1971.

This is three times consumption in volume of meat as of 1960. It seems that meat requirements will be on increase fairly quickly even hereafter, with an increase in national income, modernization of way of living, etc.

(2) Supply of meat

Beef: Volume in output of beef was on the decrease as from 1964 due to cut down in number of head of cattle raised following the change in formula of raising of beef cattle from draft cattle to beef cattle, showing the minimum in 1967 and in on the increase as from 1968.

Especially marketing of fattened bull calves from dairy cow is remarkably on the increase, making ratio of beef from dairy cow to that from meat cattle 51:49 in 1972.

Pork: So far as pork is concerned, there can be seen a pig cycle in which price and number of head raised would vary with about 3-4 year cycle each. On the other hand, number of farm households raising hog is on the decrease annually while number of head of hog kept per farm household is on the increase, up to 23.3 head in 1973.

Output of pork will, it seems to us, be on the increase steadily even hereafter, being instigated by ever growing demand of pork at home.

Poultry meat: Output of chicken is considerably on the increase in recent years, showing a growth rate of about 18% and over a year for the decade from 1962 to 1972. Especially an increase in output of broiler is so remarkable that it is up to 78% in 1972 making broiler reach one half of chicken while chicken was principally meat of full grown fowls and broiler was only 28% ten years ago.

3. Egg

Consumption of egg amounts to about three hundred piece a citizen a year in 1972. Break down of output in total of egg is: about 3% are for breeding, 64% for use in households in general, 22% for use in business at hotels, restaurants, etc., and 14% for use in processing mayonnaise, breads, cookies, etc. Trend in consumption in recent times shows that egg requirements for use in business, processing are a little on the increase while those for use in households in general is brought almost to standstill.

Feed

1. Feed demand

The scale of feed demand and supply is fast expanding each year in Japan in parallel with the rapid growth of her livestock industry. Particularly, the demand increase for concentrated feed for pig and chicken is phenomenal. As shown from

supply of feed, volume of imports of concentrated feed centering on feed grains is on the increase. This is due to the fact that agriculture in Japan has developed centering on rice and that production of feed grains is not abundant owing to low productivity.

The total feed demand in 1973 is estimated to be 23,222,000 tons in TDN (total digestive nutrient) which is about twice that of 1960. The ratio of concentrated feed and roughage in the said feed demand shows the roughage as 30.6% at 7,103,000 tons in TDN and 69.4% for concentrated at 16,119,000 tons. Trend is the increase in the ratio of concentrated feed and the dependency on import is also increasing that in 1973 the ratio is expected to reach 68.4%. Major imported feed grains are corn, grain sorghum as raw material of mixed feed.

2. Roughage

Supply of roughage is estimated at about 6,900,000 tons (TDN) at 1972, about 4,800,000 tons of which are supplied from an established grassland about 300,000 hectare wide as well as lands under forage crop about 740,000 hectare wide and the rest 2,100,000 tons are from by-products of farm and wild grass lands.

Accordingly, ratio of roughage feeding of milch cow is estimated at about fifty per cent; it becomes, however, one of political objectives to raise that ratio up to about seventy-five per cent.

To attain that end, the government is carrying out grassland development project in accordance with the long term plan and is also putting stress on the steps to be taken for growing more forage crops on agricultural land.

Demand and supply situation of rice in our country is showing a remarkable surplus in supply recently, facing us to take orthodox steps for adjustment of production of rice as well as steps for conversion of rice into other crops as from 1971. As one of those steps, conversion of rice into forage crops is strongly encouraged, setting out as its goal two hundred thousand hectares of land under forage crops by 1975.

Discussion

Kassim Ismail, Malaysia: You mentioned in your paper that the efforts are now being made to increase the milk yield and at the same time to improve the milk quality.

Could you clarify to us whether percentage butter fat and solids-not-fat are two of the components under consideration. How far have you been successful in your selection towards the improvement of milk yield and at the same time butter fat of the milk. The inheritance of these two traits are known to be working against each other.

Answer: It is true that milk yield and milk quality are generally negatively correlated. However, we do not think improvement of both traits is impossible, although it will not be easy. By the way, for milk quality, more emphasis is placed on solids-not-fat than on butter fat percentage.