

More Food From Every Acre

ENGINEERED FIELDS . . . miles of endless dikes to hold back the sea . . . intricate networks of canals drain the land . . . acres and acres of black and white cattle graze in miniature green fields — that's Holland.

With a quarter of the land below sea level and nearly half below high tide, much of the land would be flooded if it weren't for the dikes. Driving through Holland it seemed that we were nearly always driving along a dike or on top of a dike. Literally thousands of pumps, most of them electric, lift the water from the canals and dump it out into the sea. Picture postcard windmills stand idle against the horizon to be used only in emergencies. Small drainage ditches surround nearly every field and even serve as fences. In the cities, streets run on either side of canals. Many cities have nearly as many canals as streets.

Various types of soil require different water tables, all controlled by the elaborate water system. In the peat areas that we saw, the water table was kept quite high to keep the peat soil from drying out and blowing away. In the heavier soils, the water table was much lower.

Holland is a very small country — about one-third as large as Indiana — with a greater number of people. Crowded into Holland, at the rate of 697 persons per square mile, are 10 million people, about three times as many people as there are in Indiana. With the highest birth rate in Europe and the lowest death rate in the world, Holland adds 200 thousand more people to its population every year.

Even with such a dense population, Holland not only produces enough food for her own growing population, but has become one of Europe's chief exporters of milk, eggs, bacon, cheese, and butter. Holland's farms are virtually factories that transform large quantities of imported and home produced grains into livestock and poultry products. About 20 per cent of the people live on farms — about the same proportion as in the United States. Most of the farms are small, with the average sized farm about 24 acres. Nearly half of the farmers have less than 12½ acres.

Holland farmers have not always been producers of specialized crops. Once they grew large quantities of grain. In the latter half of the 19th century, American farmers began growing large quantities of grain on the new land opened up in the western United States. Many Holland farmers, unable to compete with the cheap American grain pouring into Europe, went broke. Other farmers turned to intensive specialized farms and began producing dairy products, eggs, meat, flower bulbs, seed potatoes, and other specialized products.

In such an intensely farmed country, I was surprised to see so many fields of pasture and meadows. Over half of Holland is covered with dense growing, luxurious grass and clover. Because of the severe shortage of protein cake, the Dutch dairymen feed lots of well cured legume and grass hay.

A cool climate — it rarely gets over 75 degrees in the summertime — an evenly distributed rainfall, and heavy applications of fertilizer and manure spur the pastures on through the summer.

A Typical Farmstead

To see an outstanding herd of Friesland cattle, we headed for the noted dairy farm of I. N. Wassenaar, president of the Friesland Herd Association. It was Sunday morning as we nosed our car out of the north Holland city of Leeuwarden.

Around the farmstead the drainage ditch spreads out into small ponds covered with white blooming water lilies. Half hidden by clumps of trees and flowering shrubs, the typical Friesland farmstead had a neat brick, red tile-roofed house joined directly to the huge thatch-roofed barn.

When we arrived, Farmer Wassenaar was showing one of his prize bull calves to visitors from South Africa, two young men who hoped to take back a few choice Dutch cattle to their own homeland. Mr. Wassenaar greeted us in excellent English. He has made a number of visits to America, Canada, South Africa, South America, and Australia. Today the fine Dutch cattle of Friesland

go to nearly every country of Europe, South Africa, and South America. We had seen large herds in Italy that had been imported from Holland. Even in far away Israel and the Middle East most of the improved dairy cows carry Dutch blood.

In the wintertime the thirty-six dairy cows stand in line along the concrete mangers where they are tied with leather straps around their necks. The center part of the barn is reserved for hay, elevated by a built-in conveyor. Hay fields frequently are grazed early in the spring and late in the season after the hay has been cut. Because of the high moisture in the air and frequent cloudy weather, hay is cured in long rows of haystacks. Dutch farmers pile this freshly cut hay over tripods built of poles to keep it green while it dries. At harvest the Dutch farmer hitches a horse to one leg of the tripod and drags the haystack into the barn or hay shed. Many hay sheds are built without sides and with an adjustable roof that can be raised or lowered, depending on the size of the hay pile.

After taking us through the barn, now empty and scrubbed clean, Wassenaar showed us his cows grazing the nearby field. The cows run out on the flat pasture fields for about seven months during the summertime. Around seven o'clock in the morning and four o'clock in the evening, the milkers, many of them girls, go out in a horse cart to milk the cows in the pastures. We saw a few modern dairymen who had milking machines installed on their wagons. They tied the cows to

either side of the wagon while they milked them by machine powered by a small portable motor. And such cows they have! Large black and white cows with straight top lines, long, level rumps and shapely, capacious udders. On twice a day milking, the Wassenaar herd averages about 15,000 pounds of 4.1 milk.

Holland has nearly a million and a half milk cows. The average milk production is nearly 8,400 pounds. In comparison, the United States average stands at a little over 5,000 pounds. The average for Wisconsin, one of our best dairy states, is only a little more than 6,000 pounds.

I noticed that there were no fences around the fields, only small, narrow drainage ditches. Mr. Wassenaar told us that few people build fences in Holland and that even during the summer when the ditches are nearly dry, the cows do not cross them. Any adventurous rogue who thinks the pasture greener on the other side is promptly sold before she teaches the other cows. With the deep, luxurious grass and clover mixed pastures, perhaps the cows find no reason for crossing the ditches.

Heavy applications of fertilizer — pre-war Holland used an average of 56 pounds of nitrogen* per acre on their soil compared with about 2 pounds in America — and the rich, alluvial soils built up by centuries of flooding of the Rhine and Maas rivers, give phenomenal yields of grass and crops. In 1949 the average wheat yield was 61 bushels, oats 88 bushels, and potatoes around 400 bushels.

Wassenaar went on to explain to us, "While the Frieslands make up most of the cattle of Friesland Province and over two-thirds of all cattle in Holland, there are two other important breeds — the red and white Meuse-Rhine-Ysel that looks very much like the Friesland except that they carry more beef and then there is the less important dual-purpose, Groningen.

"My milk goes in to the nearby town of Leeuwarden where it is used as whole milk, but much of the milk produced in Holland is made into the famous Edam and Gouda cheeses that are sent to countries all over the world. More than a fifth of the milk in Holland is made into export butter. In the early days, cheese was made by the women on the farm, and farm boys frequently selected their wives not so much for their good looks but because they could make good cheese. It was a good *keezzer* that had the most suitors. Now, of course, we make our cheese in modern dairy plants, most of them operated cooperatively."

Flood Control

Pride of Hollanders is the seemingly endless miles of dikes, canals, and ditches that drain the land and hold back the sea. A quarter of the land is below sea level and nearly half would be flooded by the tides and high water if it were not for the dikes. Literally thousands of pumps, most of them electric, lift the water and pour it into the sea.

In the days of the Romans, the Zuider Zee was

merely a number of lakes, but with the land sinking at the rate of eight inches every 100 years, more and more of the fields were flooded or destroyed by the waves. Land reclamation began before 1300, but it was not until 1500 that the sturdy Dutchmen were able to build dikes as fast as the land sank. It was not until the last century that they began to gain on the encroaching sea.

The Dutch engineers told us that plans were under way to drain nearly half of the remaining Zuider Zee. When these projects are completed, they will add over a half million acres of badly needed land, increasing the total cultivated land by 10 per cent and furnishing homes for 300 thousand people. That is very important in such a densely populated country where every acre must produce its dead level best.

With many mouths to feed and a limited amount of land on which to grow crops, the Dutch farmer makes every acre count. One cannot help but be impressed by the tremendous yields he gets from his fields and from his livestock. His greatest emphasis is on yield per acre.

This is in sharp contrast to America. Here our emphasis has been on production per man hour. There is no doubt about it that when it comes to the amount of food grown per acre, the good European farmer beats us all hollow.

We visited farms in northern Italy in the rich Po River Valley that last year produced 170 bushels of hybrid corn per acre. We saw many fields that

had produced 140 bushels. How do they get such high yields? First, they pile on the manure and fertilizer and then they irrigate their fields. Of course, these were the better farmers.

Most American farmers have more machinery than European farmers. That means that they use a lot less labor. Here in America a grain or general purpose farmer can easily farm 200 to 400 acres by himself or with one hired man. If he is a dairy farmer with that much land, he will probably have no more than two hired men. On a similar Italian farm we saw 35 workmen. Most European farms that size might have as many as twelve workmen, at least five or six.

Only on British farms will you find anything like American mechanization. The smaller Scotch farm might actually have more power per acre than you do. Nearly every farmer has a tractor in the rich farming section of Aberdeenshire, even though some of the farms may be no larger than 60 acres.

The large farmers that we visited in the Fens in England, the low muckland along the English channel, have a lot of modern farm equipment. For instance, Smith Means lives near Outwell in Norfolk. He grows turnips, wheat, barley, oats, and sugar beets on his 600 acre farm in the Fens. Completely mechanized, he has three tractors, a pickup baler and a complete line of other power equipment. He would be a very good farmer even by American standards.

As a whole, however, British farmers have not learned how to use their machinery to as good advantage as we do. We saw numerous men riding grain drills behind the tractors and large tractors pulling four-foot mowers. This is probably because they have not used power equipment as long as we have and have not learned yet how to make the most possible use of it. However, unless the American farmer is a far better than average farmer, his yields per acre will not measure up to the European farmer who throws on heavy applications of fertilizer and even irrigates his field when necessary.

The American farmer is just now learning to make every acre count. As our population increases in America and farmers are called upon to produce more food, it will be necessary that we too learn to put every acre in the most profitable crops and get the highest possible yields per acre. In this way every acre becomes larger. This is American agriculturists' greatest frontier.