

## *Grass by the Tons*

**I**N GERMANY I visited the farm of Otto Feury, a few miles east of Munich, near the cross-roads town of Steinhöring. To get to his farm, we turned off the main road east of Munich and headed out on a small winding gravel road that took us past large farmsteads crowded on small knolls, through small forests of dense growing pine trees with overhanging limbs that nearly swallowed up the road. At last, after asking our directions several times, we drove up to the three-story, ancient-looking stone house. In the courtyard I met Mr. Feury. I had first met him when he visited American farms about a year ago on an Allied government-sponsored trip to America.

Like most Bavarian houses, the house and barn were connected and along with another building for farm hands, surrounded a court. Built many years ago, the roof of the cow barn, like some of the rooms of the house, was stone vaulting. *Thail-ing* consists of 250 acres. The average sized farm for this section of Bavaria is 25 acres. One-third of it is in forest, one-third in cultivated crops, and one-third meadows — and such meadows! I

saw 100-year-old permanent pastures that still were covered with thick growing stands of grass and clover.

Said Mr. Feury when I quizzed him on how he kept old meadows in such good shape, "We must take care of our meadows. They, along with our forests, furnish most of our living." I could believe it as we walked out over the rich turf. "We put on seven to ten tons of manure every three years," he went on to explain. "Each spring we spread 250 pounds of superphosphate, 125 pounds of potash, and 100 pounds of nitrogen fertilizer. We have our fields divided into eight small pastures. The milk cows graze in a pasture for three days, then we follow up with the calves and horses for two days. After this, we mow the field, harrow it to spread the manure, and add nitrogen and superphosphate. Or we may add liquid manure if it is rainy and then we don't put on fertilizer. This means that we get around to each pasture at least five or six times every summer."

In England I visited a farm that was cutting orchard grass for hay. They were getting three tons of hay per acre with a protein analysis of 15 per cent. That field had had 1,000 pounds of balanced fertilizer applied at seeding time. Many English pastures may be top dressed with nitrogen three or four times during the grazing season. The good Holland farmers figure three cows to every two acres, and that may include land for hay.

The European and British farmers are head

and shoulders above us when it comes to growing grass. I just haven't seen pastures and meadows here in America that look anything like those I saw in Europe.

True, the northwestern European farmer and the British farmer may get more rain during the summertime than we here in the central states, and he has cooler weather, ideal for grass. But in the hot, dry fields of the Po River Valley, clover is irrigated. Sprinklers play over pasture fields in the valleys of Norway where it is much cooler than in America.

With the scarcity of protein, the British and European farmer turns to his pasture and hay fields to supply his cattle and sheep with needed protein. In Norway the cows may be fed a salted herring a day to increase the protein in the ration. By putting on extra heavy applications of nitrogen, the European farmer boosts the yield of protein of his grasses and legumes. I saw alfalfa fields in England cut at the very beginning of bloom, then top dressed with nitrogen to give them an added kick to start off growing again. As a whole, the European farmer cuts his grass at a much earlier stage than we in order to boost the percentage of protein. I saw dehydrated grass that was running 18 per cent protein.

Nearly everywhere in Europe, the milk cows during the winter months eat high protein grass silage or grass mixed with legumes. In Italy they feed ladino clover-grass, in England orchard grass,

and in Scandinavia a mixture of grass and red clover. The European farmer utilizes his plant proteins in legumes and grasses to the fullest advantage.

It works out about like this. By changing the cattle every week, you get about 15 per cent more grass than if you use only four or five changes of pasture. You can figure on getting about 25 per cent, sometimes even more, on top of this when you give the cows a new pasture every day.

In Great Britain, Holland, and other parts of Europe, as well as New Zealand, they give their cows a new pasture every morning and night. Why? The cows are on the pasture when it is at its very best. The grass and legumes recover much sooner if they are grazed quickly and then allowed to rest.

On new pastures, cows eat grass like a lawn mower cuts. The cows spend their time eating rather than tromping down grass in a search here and there for lush tufts. Very little uneaten grass is spoiled by manure and the manure is spread more evenly over the field. The cows eat all of the grass and don't leave patches of uneaten grass or weeds.

Cows normally do what is called *selective grazing* if they run in large fields. They will continue to eat down the better grass and legume plants and turn up their noses at the ones they don't like.

Eventually good grasses and legumes are either killed out or weakened by continuous grazing,



Fig. 9—These Israeli youngsters live on a kibbutz, a communal farm. Most of the communal farm land is owned by the Jewish National Agency which rents it to the farmers (Chap. 10).





Fig. 10—This French farmer spends much of his time going from one small plot of land to another since his farm consists of many small patches scattered over a wide area. This problem, caused by land inheritance laws, plagues much of central Europe (Chap. 11).

while the weeds and poorer grasses continue to thrive and eventually take over.

### **Strip Grazing**

In England they call it *strip grazing*. Here's how it is done. Fields are generally divided into permanent pasture fields, say 150 yards long and 50 yards wide. Cows are kept on a small portion of the large field by an electric fence.

The cows are turned on the new pasture when it is from six to nine inches high. That's the time that grass has its highest feeding value, and grass and legumes are growing fastest. Enough cows are turned on the plot so they will have it eaten down in a day's time. An acre will feed from 40 to 80 head at first. Later in the season, it will furnish feed for fewer cows.

In the fore and aft plan, a lane is first fenced off with an electric fence along one side so the cattle can get to water. Then the electric fence is put up to give a strip the necessary size. You will have to use a little care not to get the strip too narrow to start off, or the cows will horn each other. It may be necessary to have a little larger strip for safety's sake than the cows will clean up.

The fore or front fence is moved up at least once a day. Some dairymen will move it up when the cows go out to graze in the morning and move it up again when they are turned back in the pasture at night. As the strip moves across the field, a back, or aft electric wire is used to keep

the cattle off the land that has been previously grazed.

The back fence is moved up every week. With a little experimenting, it is a simple matter to figure out how much space to give the cows so they will have the strip all eaten down to two or three inches high.

The half clock method works about the same way, except that the electric fence goes out like spokes from a wheel from the area with the water tank. Again the front wire is moved at least once or perhaps twice a day, in the morning and at night, and the back wire is brought up every week. After the cows are taken off the field, it is topped with a mower, the droppings spread with a harrow, and the pasture top dressed with nitrogen and phosphate.

Strip grazing has already come to California. It undoubtedly will be used more and more in this country.

For the most part, the northwestern Europeans have spent more time breeding adapted varieties of grasses and legumes than we have. We are just now setting up the machinery in America to do this job.

The European has another trick to grassland farming. So far in America we have thought largely of growing mixtures of grasses and legumes that do well on certain types of land. The northwestern European farmer is ahead of us here. He



thinks not only about what will grow well on the land, but plans a pasture rotation of various mixtures to furnish him grass when he needs it. If he wants to put up silage in the spring, he has a field that makes good silage. His pasture mixtures are planned so that he has a continuous grazing season during the summer.

I visited a farm a few miles north of London. The farm kept 20 dairy cows. The pasture land was divided into 10 blocks of five acres each. Eight of the blocks were used for pasture. In these blocks were grown five different pasture mixtures. The farmer had drawn out a chart so that he would know how to graze his cattle intelligently.

Two blocks were planted to perennial rye grass and white clover which came on early for early grazing. By the time the cattle were through there, they were ready to move onto orchard grass and white clover fields. These fields had been cut early in May for silage. Nitrogen had been added so that it was up big enough to pasture by the end of June when the rye grass was playing out. The fields of orchard grass and alfalfa were used for drouth insurance. They were ready to graze during the dry period of August and September. If there was plenty of rain, he would put the grass from them in the silo. If the weather was dry, he needed it to graze the cows through the dry period. Two other blocks were used to graze late in the fall.

By planning his pasture program this way, this English farmer insured himself a continuous supply of good forage the year around.

To my knowledge, few if any people in this country are using such a program. Yet it is the one way to insure a continuous supply of good quality pasture, hay, and silage the year around.