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Agricultural Research and  
the Seed Business in Hungary

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Mr. Peter Martin  
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Dear Peter:

Hungary's scientific research budget definitely favors industry over agriculture. Agriculture in 1981 contributed 17 percent of national income, but it received only 9 percent of Hungary's research budget. Nevertheless Hungary has achieved a relatively modern agricultural system. The four agricultural universities, the Ministry of Agriculture, and the Academy of Sciences all maintain farms for agricultural research. These farms experiment with new seed varieties and livestock breeds that have been imported or developed by Hungarian researchers, and adapt them to local environments. The Academy's experimental farm, at Martonvasar, about 40 kilometers southwest of Budapest, is the most important center in the country for the development of new wheat varieties and the second most important center for corn. The research there has undoubtedly contributed to the high yields of corn and wheat achieved by Hungarian farms--yields that are among the highest in Europe.

The Martonvasar experimental farm is a peaceful place in early June, after the corn has been planted and before the wheat harvest begins. Like many Hungarian farms, its lands came from territory that was appropriated by the state after World War II from the nobility. Before then, the lands of the Martonvasar farm belonged to the Brunswick estate, which has as its main claim to fame the frequent visits Beethoven made there early in the 19th century. The gardens of the estate have been maintained and concerts are still held on the park grounds in the summer, but the concerts are often disrupted by the noise of the frequent trains on the nearby Balaton-Budapest line. In the old days, the nobility ordered the trains to wait until the concert was over. Nowadays, keeping the trains rolling is more important than protecting the ears of concert-goers.

The experimental farm at Martonvasar is an independent enter-

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prise. It is formally a part of the Institute of Agricultural Research of the Academy of Sciences, but must generate its own income and cover its operating costs. It does this mainly by producing certified seeds from the varieties it has developed and tested, and selling the seeds to cooperatives and state farms around the country. Fifty percent of the wheat seed requirements of Hungarian farms and 30 percent of the seed corn requirements are sold by Martonvasar. Their sales of seed corn used to be much greater, but have declined substantially in recent years.

The story of that decline is an interesting example of international competition in agricultural technology. Several years ago, Pioneer, a major American seed company, approached Martonvasar about the possibility of a joint venture for seed corn production based on Pioneer hybrids. Martonvasar turned them down, so instead Pioneer linked up with the Ministry of Agriculture's experimental farm in Szeged, Martonvasar's major competitor for the production of hybrid seed corn in Hungary. Martonvasar was gambling that Hungarian farms would prefer Martonvasar corn hybrids to the Pioneer hybrids. Unfortunately, they were wrong and Pioneer hybrids have become by far the most popular in Hungary. Pioneer hybrid seeds are now used to produce some 70 percent of Hungary's corn crop.

The competition in hybrid corn is intense because hybrid seed corn sales are so profitable, much more profitable than sales of seed for wheat. Corn is so much more profitable not only because larger quantities of seed corn are required per hectare planted, but also because of the biology of hybridization. A corn hybrid, unlike a wheat variety, is a technology that can more easily be protected by its developers from duplication. For this reason, North American agribusinesses are eager to sell their hybrids abroad and a joint venture, with a Hungarian firm for example, may be very profitable for both partners.

Some agronomists believe that diseases will eventually attack the Pioneer hybrids and that the Hungarian hybrids will regain their prominence. Meanwhile the management of Martonvasar, which turned down the Pioneer offer, is being replaced and the farm is trying to recover from the severe economic difficulties it experienced in the last few years as a result of losing its edge in seed corn production.

Foreign seed companies are not so interested in developing and marketing wheat varieties, which once obtained, can be easily duplicated, so Martonvasar has been able to maintain its leading position in sales of wheat. The Martonvasar wheat varieties are still the most important in Hungary, especially its MV-8 variety. All their MV varieties, MV-4 to MV-10 are semi-dwarf varieties developed by crossing imported dwarf wheats with the traditional

Hungarian wheat, "Bankuti", which has good grain quality, but is tall and subject to lodging (i.e. falling over when ripe). Before Martonvasar developed the MV-8, the most widely grown wheat in Hungary was a Russian variety. But that variety proved to be susceptible to fungus in the warmer Hungarian climate.

Seed production is a complex business. Martonvasar first develops and field tests its new varieties, but its 3,000 hectares are not enough to grow all the wheat and corn seed required for commercial production. So Martonvasar contracts with 15 other state farms to produce the rest of the seed. Growing wheat and corn seed under contract is very profitable and there is competition among the state farms for these contracts. Some idea of how profitable it is may be had by comparing relative prices for seed and feed corn; for example a state farm can receive 4,000 forints per 100 kilograms from selling seed corn, in contrast to only 400 forints per 100 kilograms from selling corn to be used as feed. After harvest, the state farms bring the seeds to Martonvasar's modern production plant for final processing, quality testing and certification. The seeds are bagged and prepared for delivery to farms.

Seed production is of course very labor-intensive. Martonvasar and the state farms solve some of their seasonal labor requirements by enlisting soldiers and by hiring school kids to do the unskilled field work. The wages paid to seasonal labor are low, but there are other compensations. At Martonvasar, the laborers can use the swimming pool provided for the farm's permanent workers. Meals also are provided by the farm's canteen. (For the school kids who don't get enough to eat of the first two courses, there are unlimited portions of lard sandwiches available. The lard sandwiches seemed to be a very popular item on the day we were there. It was clear that lard continues to be a popular food in Hungary and that the statistics showing high lard consumption are probably accurate.)

Martonvasar also breeds both dairy and beef cattle. Their livestock breeding program is, however, purely secondary to the seed production activities. According to Endre Bobok, manager of the farm's beef cattle branch, they breed cattle mainly to make money from feeding the by-products of the wheat and corn produced on the farm. For that purpose, Bobok finds the traditional Hungarian breeds to be particularly valuable. The Hungarian Grey, a breed which originates from the Asian steppes, can tolerate cold winters and grazes well on the wheat and corn stalks left in the fields after harvest. When crossed with the Hungarian Red and White breed, the Grey gains weight fast and yields a quality of beef pleasing to western consumers, especially to Italians.

Endre Bobok is still able to sell some beef to Italy, despite

the European Economic Community restrictions on beef imports from Hungary, but finds sales to Arab countries to be more lucrative. Russian buyers, too, frequently visit the farm, but the Russians have a reputation in Hungary of being mostly "window shoppers" for Hungarian cattle, only rarely do they buy.

To fulfill the increasing demands of the Arab market for beef, the Hungarians may be turning to the American Hereford breed. The Arabs are starting to import beef rather than mutton from Hungary. Because the quartered carcasses of Herefords are about the same size as the sheep carcasses the Hungarians have been shipping to the Middle East, the Hungarians are able to use the sheep carcass containers also to ship beef.

It is striking how much foreign (mainly western) technology is used on Hungarian farms. Even some Hungarians say that a major reason for Hungary's agricultural success has been the widespread importation of western, especially American, technology. That contribution is especially notable on the dairy farms. In Martonvasar, as in almost all dairy farms in Hungary, the American Holstein-Friesian breed predominates. Of Martonvasar's 700 dairy cows, 300 are purebred Holsteins, the rest are first or second generation Holstein crossbreeds. The milking machines, pumps and coolers are all of Swedish manufacture and even the cows' ear tags are imported from New Zealand. The feed is mixed with imported American protein concentrates and John Deere machinery is used to chop silage.

The only things not imported seem to be the cow barns, built 100 years ago by the owners of the Brunswick estate. The barns are truly impressive, massive stone buildings with high ceilings and excellent ventilation and the cows thrive in them. The three 100-year-old barns are in far better condition, are more efficient to clean and provide a healthier environment for the cows than do many of the barns the farm built 20 or even 15 years ago, some of which are equally palatial-- as one foreign visitor last year asked, "Why has a socialist country built castles for its cows?" It's true the Hungarians are now building more simple kinds of barns, without so many interior walls or enclosures for the cows. But it's taking them a long time to find new solutions to the problems of large-scale animal production.

Sincerely yours,



Lana L. Hall