

# New Import Center and Semen Imports - Steps in Improving U.S. Herds

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Domestic livestock in the United States has "tired blood."

As a matter of fact, livestock breeders have reported to officials of the Animal and Plant Health Inspection Service (APHIS) of the U.S. Department of Agriculture (USDA) that the need for new germ plasm—"new blood"—to broaden the genetic base of domestic livestock has reached a point so critical that it has become imperative to bring in exotic, or foreign, breeding stock.

The critical situation becomes evident when examining the bloodlines of domestic beef and dairy cattle, sheep and swine. Most were introduced into the United States—largely from Britain and west Europe—60 to 80 years ago. Today, scientific studies suggest that other foreign breeds may have the characteristics needed to meet current and future requirements for red meat.

To meet these needs, two actions taken are significant. In 1970, Congress passed a law (Public Law 91-239) providing for the establishment of an animal import center that would permit the importation, under USDA safeguards, of animals from countries infected with foot-and-mouth disease and rinderpest. Such imports had been previously prohibited by the Tariff Act of 1930. The new law followed by five years the action taken in 1965 to change USDA import regulations and permit importation of semen from foot-and-mouth disease and rinderpest-infected countries under strict safeguards.

Further, it has been found that the more diverse the genetic contributions of the parents, the more vigorous and productive the resulting hybrid offspring will be.

Also, by cross-breeding with certain exotic stock, animal breeders can bring about desirable changes much faster than is possible today by selection within present U.S. domestic breeds. In beef cattle, for instance, a wider selection of breeds for cross-breeding is expected to make it possible to increase the number of calves per cow by about

three percent. As a result, fewer cattle will be required to produce the beef to supply increasing consumer demands. It is expected it will be possible to breed for specific characteristics that will increase the average weaning weight per calf. When breeders can accomplish this, it will mean fewer days on feed required to bring the calves to market weight.

Another goal is to reduce the amount of waste fat on the carcass of finished beef animals to help meet the consumer preference for leaner meat. This fat reduction would accomplish one of two things: 1) increase the amount of edible beef available by 480 million pounds; or 2) eliminate the need for raising 810,000 animals. The first alternative represents an improvement in the national diet and cannot be figured in dollars and cents. The second alternative could save the industry \$208 million a year in producing the same volume of beef.

The dairy industry is expected to receive similar benefits from more effective cross-breeding through the imports at the new center. Though initial imports through the center will be limited to cattle, in time imports of swine and sheep will follow, allowing improvements also through wider selection of breeding stock.

These factors underlie the importance of exotic breeds and semen to the U.S. cattle industry. At present, USDA has had but limited facilities for taking care of exotic cattle imports. In 1972, for instance, only 86 Charolais, 141 Simmental, and one Limousin were brought in through USDA's animal Import Center at Clifton, N.J. All of these animals were born in countries designated free of foot-and-mouth disease or from parent stock imported from infected countries.

APHIS officials say such limitations will be remedied by construction of the new Animal Import Center. Procedures for moving cattle through the station are being developed now. After these have been put in operation, plans suitable for

the requirements of other species will be drawn up.

First, officials had to find a suitable site that would meet the needs for maximum security and for efficiency of operation. Congressional legislation required that the station be established on an island within the territory of the United States. Since most of the genetic strains needed in this country will very likely originate in Europe, the potential sites considered were along the East Coast, in the Caribbean, and in the Gulf of Mexico. Veterinarians representing the research and regulatory aspects of animal health inspected more than 25 proposed locations.

Guided by the legislative criteria, officials selected Fleming Key off the coast of Key West, Fla., as the most desirable site. This location does not provide every one of the many requirements outlined as an ideal location, but it does have more of them than any of the other sites investigated. In addition, it has special requirements that make it particularly suitable.

For instance, Fleming Key is the property of the U.S. Key West Naval Station. The only land access is by one bridge from the U.S. Naval Station Annex already under restricted use. The location is 160 miles from Miami by highway and almost 60 miles by air from the west Florida coast. It has been listed for many years on maps and navigational charts as a restricted area because of military activities. These factors increase security and help prevent animals and unauthorized people from approaching the site.

Another desirable characteristic is that Fleming Key does not have any domestic livestock, wild ruminants or swine. The closest wild animals susceptible to foot-and-mouth disease—the disease APHIS officials are most concerned about—are the Key deer at Key West Park more than 20 miles away. The closest livestock-raising area is more than 120 miles away.

The third characteristic is that, unlike most islands, Fleming Key can be reached from the mainland by highway as well as by commercial airlines and deep-water ocean vessels. This allows effective movement of personnel, supplies and animals into and out of quarantine.

These three factors—security, isolation and accessibility—will help APHIS maintain the most stringent security measures for animal diseases and pests. At the same time, they will contribute to a convenient and economical operation.

The Fleming Key Center will cover about 16 acres. Housing for the animals will be surrounded by two chain-link fences about 16 feet apart. A receiving center will be built inside the two fences.

An administration building will contain offices and laboratories within the enclosure, four animal-holding areas will be built. Plans call for either four separate buildings connected by enclosed walkways or for one building with four wings. In addition, there will be a storage building for feed, bedding and equipment; disposal facilities for liquid waste; and multiple incinerators for disposal of solid wastes. Other construction will provide a shop and maintenance building, water storage tank, and standby power supply.

A veterinarian-in-charge, his assistant, and seven other employees will comprise the professional staff. The rest of the staff will consist of administrative and security personnel and animal handlers. Operations and maintenance costs will be financed by charges to individual importers for each animal-day of quarantine.

The capacity of the center at any one time will be 500 animals. This will consist of 400 imported animals plus 100 domestic contact animals. They will be mixed and held in that ratio—four imports to one contact animal. The purpose is to supply susceptible animals to test for the presence of communicable diseases.

Imported animals will be held under quarantine for five months, with a one-month period for cleaning and disinfecting after the animals are released. This means that a total of 800 imported cattle can be handled per year.

Animals must enter and leave quarantine at the same time. If any quarantined animals should be denied entry, all or a part will be denied depending upon the disease involved. Qualifications for animals imported have not been fully developed.

However, officials stress that qualifications will be at least as restrictive as those in effect in Canada. In 1965, Canadian officials developed procedures for importing animals from countries with foot-and-mouth disease. Canada set up import stations at Grosse Ile, a Canadian island in the St. Lawrence River. Later, at St. Pierre, a French-owned island off the coast of Canada, they established a second center. By January 1972, Canada had imported more than 2,350 animals through these stations and had incorporated them into the national herd with no disease problem.

With procedures similar to Canada's, officials believe that limited importation from countries infected with foot-and-mouth disease may be safely brought into the United States. Breeders will then be able to make selections of breeding stock from the country of origin to meet the needs of the U.S. consumer program.

It has been estimated the center will cost a total

of \$6.7 million, but continuing inflation would affect that estimate. Construction will take about a year. Target date for completion is 1975.

Officials stress that the new center's operation will not conflict with the regular animal import centers located at Clifton, N.J., Miami, Fla., and San Francisco, Calif. These stations will continue to handle animal imports from countries where foot-and-mouth disease does not exist.

In the meantime, importation of semen from exotic breeds continues. As an indication of the scope of this activity, in 1972 importations of cattle semen from these breeds amounted to approximately 2.2 million ampules. Two thirds of this amount came from Canada. Imports also were received from Italy, Germany, France, Australia, and Switzerland.

Of the exotic breeds represented, Limousin topped the list, followed closely by Simmental, then Chianina, Maine Anjou, Murray-Gray, Devon, Salera, Welsh Black, Gelvich, Norman, Blonde Aquitaine, and Lincoln Red.

Of course, semen can not be imported at the risk of introducing a livestock disease or pest not now in this country. Frozen semen, for instance, provides a specially favorable medium for preserving infectious agents for undetermined periods of time and for potentially world-wide distribution. A single bull can be the source of 100,000 ampules of semen a year.

Because of the potential danger of such wide distribution of infection, USDA has established

regulations that must be met before semen is allowed to be imported into this country. Semen cannot be imported from countries infected with rinderpest or foot-and-mouth disease unless certain conditions are met. For instance, semen collections must be under the supervision of an APHIS veterinarian. This includes inspection at the farm-of-origin, checking for isolation, taking blood samples, shipping to the United States, testing at USDA's Plum Island Animal Disease Laboratory, storing under quarantine, and ultimate release. The bull also must be tested for such diseases as tuberculosis, brucellosis, and contagious bovine pleuropneumonia.

USDA has also been considering for some time the desirability of regulations which would set standards for donor sires whose semen would be shipped interstate. After consultation with leaders in the U.S. cattle industry, USDA published a proposed regulation in the September 30, 1970, Federal Register. Under this proposal, donor sires must be free from evidence of communicable diseases and pass a physical examination given by an accredited veterinarian within 60 days of the first semen collection. Numerous comments—both for and against—were received from interested parties, including suggestions for improvement. The proposal is under review.

With construction of the new animal import center at Fleming Key and with continued importation of semen from exotic breeds, officials foresee far-reaching benefits for the U.S. cattle industry and for the U.S. consumer.

**Economics of Dairy Herd Management**  
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Dairymen with herds in the lowest production group received an average wage of 81 cents per hour. From there the wage moved steadily upward to \$4.71 for herds averaging 14,532 pounds of milk sold per cow. Dairymen in the top production group received a slightly greater return per cow, but the additional hours required to get this return caused the wage rate to taper off.

Obviously, it isn't a simple matter to achieve these higher levels of milk production. If it were, a great many more dairymen would have herds producing at high levels. Skill, rate of expansion, an individual's starting point, the willingness to work, disease and capability of those in dairy service organization and consulting roles all enter the picture. Yet the fact that many are there indicates that it is possible.

Table 4  
Effect of Level of Milk Sales on Returns to the Dairy Enterprise\*  
389 Southern Michigan Holstein Herds on Telfarm, 1970

	POUNDS OF MILK SOLD PER COW						
	Under 10,000	10,000-10,999	11,000-11,999	12,000-12,999	13,000-13,999	14,000-14,999	15,000 and Over
Number of farms	23	44	72	96	84	44	26
Ave. Pounds milk sold/cow	8,976	10,587	11,464	12,512	13,424	14,532	15,762
Number of cows	62	58	71	62	64	59	55
Income/cow							
Milk and cattle sales	\$628	\$721	\$797	\$891	\$916	\$990	\$1,103
Cost/cow							
Total nonfeed	366	390	384	411	412	436	492
Feed disappearance	356	355	394	414	427	440	495
Total cost	\$722	\$745	\$778	\$825	\$839	\$876	\$987
Returns/cow							
"Wage" per hour of operator and family labor	\$0.94	\$0.24	\$19	\$66	\$77	\$114	\$116
	\$0.81	\$2.05	\$2.91	\$3.82	\$4.23	\$4.71	\$4.61

\*Income and cost figures include those charged to cow herd and dairy replacements.