## **New Bolton Center**

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thesized compound similar in structure to vitamin D-may hold the answer for prepping that player for the coming game

Although vitamin D does stimulate the absorption of Ca from the diet, as well as the mobilization of Ca from bone tissue to the blood, there are problems associated with injecting it into the cow. For one thing, vitamin D can be toxic. Since it is fat soluble, a buildup of vitamin D in fat tissue can actually overwhelm the cow's ability to regulate calcium level, says Moser.

And there's also the problem of lag time. Response to vitamin D injection can be delayed for as long as three to 10 days as the vitamin travels from the liver to the kidneys

Using the vitamin D analog, on the other hand, has reduced this lag time to about 24 hours, Moser reports. And the synthetic compound is more water soluble than vitamin D, allowing it to leave the body more easily.

Dr. Moser points out that ongoing research in this area is a joint venture involving the Universities of Pennsylvania, Wisconsin and California. At present, New Bolton's project involves 100 cows representing eight to 10 herds in southeastern Pennsylvania.

## **Shipping Fever**

Shipping fever is an expensive ailment. The total annual cost to agriculture runs \$400 to \$500 million, and dairy losses in Pennsylvania alone are estimated to be \$65 million.

"And there's a substantial loss in productivity, not just death loss," points out researcher Robert Dver.

The disease commonly affects cattle three months of age or older, and dairy cattle are usually affected by a subclass known as enzootic pneumonia.

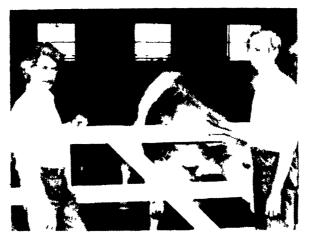
Dyer notes that shipping fever usually results from the

interaction of viruses, bacteria and stress. "There's no simple formula," he says. "We're not dealing with just one virus and one stress factor, but usually a combination.

Though vaccines and antibiotics are the commonly accepted means of dealing with the disease, Dyer stresses that these measures haven't proven to be very effective Of the 30 viruses known to affect cows, vaccines are available for only four of them, he points out

Taking a different tack, Dyer's research has involved developing techniques for collecting lung fluid and finding out what makes a cow's immune system tick. The ultimate goal of his studies is to get out of the realm of antibiotics by helping the immune system to fight the battle. "If we can boost resistance in the immune system, will we even need vaccines?" Dr. Dyer concludes

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Drs. Syed Kashmiri (left) and Phalguni Gupta with New Bolton herd declared a national resource.

## **Bovine Leukemia**

Lancaster Farming, Saturday, June 15, 1985-A33

Though there is no known cure for the fatal disease known as bovine leukemia, New Bolton researchers Phalguni Gupta and Syed Kashmiri are closing in on the development of an effective vaccine.

Bovine leukemia is a disease characterized by malignant transformation of lymphoid cells, says Dr Kashmiri, and large, swollen lymph nodes are the first signs noted in cattle stricken with the ailment.

Two kinds of leukemias have been recognized, Kashmiri points out The least common is the juvenile form that affects animals less than two years old. The adult form is found in animals over two to three years old, and is most common in the five to eight-year-old class. And it is in this latter form that a virus known to cause the disease has been isolated

Anything that transmits blood-from insects to bad veterinary practice-is capable of spreading the disease, notes Kashmiri.

The light at the end of the tunnel, says the researcher, is a newly discovered protein that actually inhibits the growth of the virus. And current research at New Bolton centers around the development of a vaccine derived from this protein

And Dr. Kashmiri points out that the outcome may well have implications for human health as well, since the viral agent is closely related to the causative agents for both human T-cell leukemia and Acquired Immune Deficiency Syndrome, more commonly known as AIDS.

Facilitating studies at New Bolton is a herd of dairy cows known to contain cows that are highly susceptible to leukemia, as well as others that are highly resistant to the disease. Recognizing the New Bolton cows as the only herd in the world containing both high- and low-risk subjects, the National Cancer Institute has declared the herd a national resource, and is providing funding for its maintenance.

