


Penn State

Entomology



Food Science

# Poultry Pointers

Agricultural & Biological Engineering      Agricultural Economics

**"BIRD LEGS" IN SPACE**

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Professor of Poultry Science

In a previous article ("Dem Bonz, Dem Bonz," 12/12/92 38(5):C3), I mentioned the fact that NASA is very interested in studies on bone metabolism.

The major reason for this interest is something we earthlings take for granted — gravity. Here on earth, gravity has a profound effect upon the physical aspects of our body.

A good way to visualize this phenomena is to determine how high you can jump and how long you can stay in the air — probably not very high (inches) and not very long (seconds). Compare this with videotapes of astronauts floating around the cabin of a spaceship trying to hang onto objects or to eat.

Sounds neat? The astronauts are paying a price for this neat experience. Since they are not under the influence of gravity, their bodies are subject to some severe stresses.

There are two major problems associated with long-term travel in space. To date, we have only experienced short-term space travel, considering that it takes 18 months to reach Mars.

One of the problems associated with space flight is tremendous shifts in body fluids. Because we are no longer subject to gravity, the fluid in our body shifts to the upper part of our torso. This creates "bird legs," stuffy noses, and puffy faces.

Appearance aside, translocation of body fluid has potentially severe physiological implications. These include cardiovascular changes, loss of weight, and decreases in blood volume. Of particular interest to scientists at Penn State is the decreased delivery of hormones and nutrients to tissues affected by this shift in body fluid. What are the implications of these changes? How can they be counteracted? Engineers and biologists are trying to answer these questions.

The second major problem associated with prolonged space travel is loss of bone. Again, on earth, standing and walking exerts physical stresses on our bones and mus-

## Leiby On Vegetable Growers Program

SCRANTON (Lackawanna Co.) — Robert Leiby, Lehigh County extension agent, will speak on "profitable potato production practices" at the Northeast Vegetable Growers meeting on Thursday, February 4 at Thompson's Dairy Bar on the Newton-Ransom Boulevard in Lackawanna County from 9:30 a.m. to 4:30 p.m.

Arranged by Cooperative

cles which serve to stimulate the continual buildup and breakdown of these tissues. Under conditions of microgravity (space), this stimulus is not present and breakdown exceeds buildup. It has been projected that a trip to Mars might totally obliterate an astronaut's bones.

As with fluid shifts, scientists are trying to develop countermeasures which will allow astronauts to maintain bone during prolonged space travel.

There are some encouraging developments. First of all, it appears that after a period of time bone losses stabilize, so the projected scenario may not be as bad as originally painted. Secondly, exercise equipment is being designed to help astronauts keep physically active. Finally, scientists are developing strategies which will minimize bone loss and restore bone formation.

The results of this research will have important implications for humans on earth as well as broilers and turkeys in poultry houses.



Robert Leiby

Extension and the Lackawanna County Horticultural Association,

the meeting is open to all vegetable growers.

Reservations are \$10 and can be made with the Lackawanna County Cooperative Extension, 200 Adams Avenue, Scranton, PA 18503 or call (717) 963-6842 by February 1.

Other topics on the program include tomato and sweet corn varieties, insect and disease control on vegetables, safe use of pesticides, and information on the new Chemsweep program of the Department of Agriculture for the collection of unusable ag chemicals in Lackawanna and Wyoming counties. Training credits will be provided for recertification of private applicators of restricted use pesticides who register before the meeting begins.

## Call It 'New Holland n.v.'

NEW HOLLAND (Lancaster Co.) — The corporate identity of N.H. Geotech N.V., the Fiat Group company formed in 1991 to head Fiat activities related to tractors, farm machinery and construction equipment, is being renamed New Holland n.v., incorporated in the Netherlands with a coordinating office in London, England.

The New Holland-based farm and industrial equipment manufacturer Ford New Holland, Inc., an operating division of New Holland n.v., will not be affected by the name change, nor will the brand names of Ford and New

Holland.

Corporate officials said the revision reflects the worldwide image of New Holland as a name synonymous with quality, development, innovation, and service.

With annual revenues of about \$4 billion, New Holland n.v. operates on all continents through its affiliates, distributors, and joint ventures. Its products are marketed under recognized brand names such as Ford (agricultural and industrial tractors), New Holland (agricultural machinery), FiatAgri (agricultural tractors and machinery), and Fiat Hitachi (construction equipment).

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## Beef Evening

LEESPORT (Berks Co.) — Beef producers in the Berks, Lebanon, and Schuylkill County areas will want to attend the February 2 Beef Educational Evening.

It will be held at Trainer's (Midway) Diner on Rt. 78/22, Exit 5. The program will feature Lou Moore, Penn State extension economist, who will discuss the agriculture outlook for the United States and the world for the 1990s.

Moore, who just returned from trips to Poland and other European countries, will relate how changes in other countries will affect beef producers in our area.

In addition, Dr. Lynn Sammons, Willow Creek Animal Hospital, will discuss vaccinations and John's certification for beef herds.

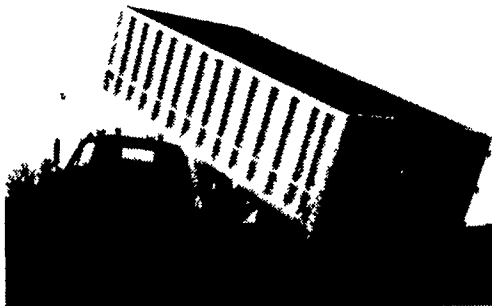
The program will begin with a beef dinner beginning at 5:30 p.m. with the talks at 6:45 p.m. The evening is sponsored by Penn State Cooperative Extension and the Berks/Southeast Cattlemen's Association.

Registration is \$6 for the dinner and no charge for the program. To register and for more information, contact Clyde Myers at the Berks County Agriculture Center, P.O. Box 520, Leesport, PA 19533, (215) 378-1327.

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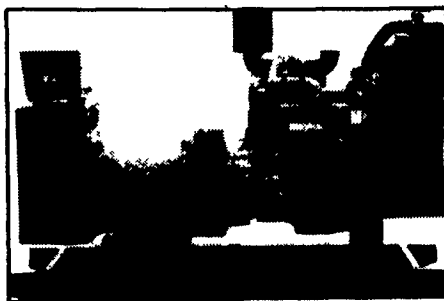
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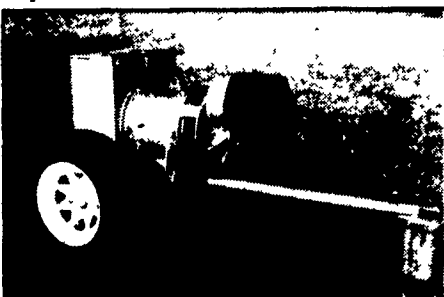
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