

Aladimir Zworkykin, Russian emigré, is called "the father of television" for inventing the iconoscope. father of television" for inventing the iconoscope, the camera tube that made TV systems possible.



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Japan reopens timothy hay market

WASHINGTON, D.C. -Design an export fumigation treatment that would prevent introduction of Hessian fly into Japan in baled timothy hay shipped from the United States.

SEA entomologists Charles L. Storey and Jimmy H. Hatchett, Manhattan, Kans., received this assignment because an export market worth \$7 to \$10 million annually was at stake. Timothy hay from the United States Washington had been rejected by Japan's plant guarantine inspectors because it contained prohibited plant materials.

The entomologists' research led to reopening of this market. Shipments of timothy hay in the first month were valued at about \$1 million – but their assignment was hardly routine.

Timothy is not a reported host of Hessian fly in the United States. Hessian fly is primarily a pest of wheat. Other small grains and several grasses of the tribe Hordeae - which does not include timothy - are satisfactory host plants.

The few reports of Hessian fly in Washington since the 1930's also caused agriculturists to question whether the insect is established in the state. In 1932, the fly had only been found west of the Cascade Mountains, not the area shipping most of the timothy to Japan.

And postharvest fumigation studies to kill Hessian fly had never been done. Neither had occurrence or survival of this pest been demonstrated in plant materials cut, baled, stored, and shipped with timothy hay.

The Hessian fly problem began when Japanese quarantine inspectors found stems and leaves of

Agropyron-species grasses as well as wheat and barley straw in bales of U.S. timothy hay. Japan's regulations prohibit entry of such plant materials because they might serve as hosts of the Hessian fly, a pest not established there.

Appeals to the U.S. agricúltural attache in Tokyo from both the exporters and Japanese hay buyers resulted in a request for help from the Foreign Agricultural Service to SEA and the Animal and Plant Health Inspection Service. SEA assigned a research team bringing together expertise on Storey's fumigation and Hatchett's on the Hessian fly.

Eliminating the prohibited materials from hay shipments was not practical. Agropyron-species grasses grow throughout the hayproducing area. And rotation of wheat and hay in the same fields allows establishment of volunteer wheat plans in new hay fields.

The Japanese Ministry of Agriuciture, Forestry, and Fisheries indicated it would consider amending its quarantine law. But only if ÚSDA would develop a fumigation procedure and demonstrate its complete effectiveness against test Hessian flies placed in baled hay that was furnigated under actual shipping conditions.

APHIS was also asked for a procedure to verify and document an approved treatment.

Field surveys by Hatchett in cooperation with entomologist Keith S. Pike of Washington State University, Prosser, confirmed that Hessian fly is indeed established in Washington. They found light to heavy infestations in western counties and also light to moderate numbers in central and south-central areas

where it had not been reported before.

Preliminary laboratory fumigation tests at Manhattan with aluminum phosphide indicated that some Hessian fly larvae and pupae (puparia) are extremely tolerant to treatment at 70°F (21.1°C) or below.

These tests indicated a necessary dosage rate of 300 phosphide pellets per 1,000 cubic feet (28.3 cubic meters), the maximum permitted by label registration, and an exposure time of 7 days. Smaller dosages or shorter exposure time resulted in fly survival at 50°F (10°C), the lowest hay bale temperature permitted for assured effectiveness.

The entomologists worked with the Washington State Department of Agriculture and hay producer-exporters organized by Ron T. Anderson, president of the National Hay Association, in planning research strategy and assembling shipping containers, hay, and personnel for tests meeting the strict conditions required by the Japanese.

Baled hay for fumigation tests in Washington was loaded in aluminum containers 40 feet (12 meters) long used for export shipments. The tests provided data for establishing dosage, exposure time, temperature limitations, method of aluminum phosphide treatment, and aeration of degassing procedure after fumigation.

Insects for the tests were reared on wheat seedlings in a Manhattan greenhouse. About 25,000 puparia per test were transported to Washington, where they were inserted in bales that were placed at four places in each container. After fumigation, the puparia were returned to the greenhouse in Kansas for observations on adult emergence.

The entomologists exposed



only puparia because other Hessian fly stages would not survive on nonliving plant material such as straw and grass stems in baled hay.

The furnigation procedure met the requirements established by the Japanese.

Any possible Hessian fly contamination in baled hay was effectively controlled. Fumigation concentrations were below the maximum allowable at shipment. And phosphide residues left in hay after treatment were below the internationally accepted maximum of 0.1 parts per million.

When results of the tests were presented to Japanese officials in Tokyo, they agreed to permit resumption of U.S. shipments to Japan, provided the hay is fumigated under guidelines proposed by SEA and treatment is verified by APHIS. The U.S. team responsible for negotiating the agreement included agricultural attache Dudley D. Williams of USDA's Foreign Agricultural Service (FAS), Storey, Harold S. Shirakawa of APHIS, and Anderson, representing the growers.

USDA whey standards

WASHINGTON, D.C. - The U.S. Department of Agriculture has proposed revising the U.S. standards for dry whey to include whey of higher acidity than is now eligible for grading under the standard.

The proposal provides for grading the more acidic wheys resulting from the manufacture of Italian cheeses and cottage cheese. Currently only the "sweet whey" resulting from the manufacture of cheddar cheese is covered by the grade standard.

To meet the requirements for the U.S. Extra grade, dry whey would have to meet six quality factors concerning flavor, physical appearance bacteria count, coliform count, milk fat content and moisture content.

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The revision was proposed because advances in food technology have resulted in increased market demand for dry whey for use as a food ingredient.

The proposed revision was published in the Oct. 12 Federal Register. Copies are available from the Poultry and Dairy Quality Division, Food Safety and Quality Service, USDA, Washington, D.C., 20250.

Comments on the proposal should be submitted in duplicate to the hearing clerk, Room 1077-S, USDA, Washington, D.C., 20250, where they will be available for public inspection.

The department's Food Safety and Quality Service establishes grade standards and provides official grading for many food products. Use of the standards and grading services is voluntary.