Treatment of Russian Logs with Cobalt-60 Irradiation to Meet Phytosanitary Requirements for Export into the United States

Robin N. Huettel, USDA, APHIS, PPQ, Oxford, NC.

The utilization of new technologies for treatment of commodities and cargo in order to kill pests, plant pathogens, and nematodes is of utmost importance to Plant Protection and Quarantine, APHIS. Not only is the impending loss of methyl bromide a serious problem but new trade opportunities with GATT and NAFTA are changing the agency's role in protection of U. S. agriculture. New considerations in GATT agreements on sanitary and phytosanitary issues require that no longer can artificial trade barriers be used to impede movement of commodities. Further, the harmonization of trading partners in their management of pests is resulting in formation of international standards. The use of irradiation as a treatment of logs from Russia is one example of not only a new technology but how international standards can be developed for trade issues.

In order to determine which organisms posed the greatest threat to North American timber from Russia, a group of subject matter experts knowledgeable in forest pests, pathogens, and nematodes developed a pest risk assessment. This panel, under the direction of Forest Service, USDA, published the finding in the "Pest Risk Assessment of the Importation of Larch from Siberia and the Soviet Far East" USDA FS, No. 1495 (September, 1991). Another panel of subject matter experts was formed in January, 1995 to determine if logs imported from Russia could be treated with cobalt-60 irradiation to kill the pests, pathogens,

and nematodes listed in the pest risk assessment. The goal of the panel was to establish a standardized dose level for all organisms of concern. Further, these dose levels could be used by any country wishing to utilized irradiation for the importation of logs into North America.

The objectives of the panel was to establish the kind of experimentation 2. to be conducted, as well as the quantity and quality of data required for the USDA-APHIS to support or reject cobalt-60 treatment as a pest mitigation for logs from Russia. Several general considerations were put in place, including the debarking of logs and that 100% mortality level must be obtained on the most likely developmental stage that would be encountered of any organism and the stage most resistant to irradiation. The final outcome would be a dose level for each group of organisms, including insects, fungi, and nematodes that would give 100% mortality.

Research parameters were established for each group of organisms and these parameters placed in protocol format. After an external review, the protocol was given to the Russian scientists conducting the experiments. A site visit was made by the panel to observe how the data was being collected and analyzed. Much of the data has been collected on insects however the research is still underway on pathogens and nematodes at this time.