

TECHNOLOGY TRANSFER ISSUES INVOLVED IN APPLICATION OF TEMPERATURE AND CONTROLLED ATMOSPHERE QUARANTINE TREATMENTS FOR FRESH COMMODITIES

LISA G. NEVEN

The development of quarantine treatments involving combinations of either high or low temperatures with altered concentrations of atmospheric gases have been ongoing for over 50 years. In many cases, these treatments have been developed in concert with those involving preservation of commodity quality such as long-term cold storage with low oxygen and elevated carbon dioxide for apples and winter pears. However, quarantine treatments being developed to replace methyl bromide for insect control has met with some resistance on the end of technology transfer. The largest hurdle in the technology transfer process is the funding for new technologies such as modified atmosphere packaging systems, in-transit controlled atmosphere systems, and heat + CA treatment systems. Although these treatments have been proven to be effective in the laboratory, in many cases, large-scale, commercial systems, have yet to be developed. In some cases, individual industries have funded the development of these technologies, but lack the funding necessary to complete the process to a commercial scale. The U.S. government and various environmental groups have a vested interest in facilitating the transfer of these emerging technologies to replace methyl bromide, and there are funding sources which may be available to complete the technology transfer process. These potential funding sources, such as the Environmental Protection Agency, USDA-National Research Initiative Competitive Grants, Small Business Administration, and others will be discussed.

In addition to barriers to funding the technology transfer process, there are problems with the commercial application of these technologies. These barriers to the commercial application of combination temperature and controlled atmosphere treatments are based on four major problems: Engineering, duration of treatment, cost of treatment, and alteration of current practices. Individual cases will be discussed concerning these four areas.

