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Leafy spurge overview and summary of federal regulatory efforts

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Leafy spurge is a herbaceous deep rooted perennial plant that was introduced into the United States (U.S.) sometime during the early 1800's to the late 1890's. More specifically ballast material from ocean going ships in the early recorded history of the U.S. was off-loaded onto the eastern coast prior to returning to Europe, loaded with raw materials. During the time frame of 1870-1880 immigrants from Russia came to North America and brought with their personal belongings, seed grains, to begin a new life on this continent. Larger shipments of wheat seed were made from Russia as additional land in North America was placed into farming. Included with these grains were varying amounts of leafy spurge seed. During this same time seed from grasses that had served settlers well in northern Europe and Russia was introduced into the plains to improve rangeland production. Smooth brome from Russia proved to be a more cold-hardy variety and was widely spread throughout the plains states. Included in this massive seed distribution program was a significant amount of seed from leafy spurge. Similar accounts have been made from importation of seeds from the European continent.

The question is obvious, if leafy spurge is a weed, why was the seed allowed to come into the U.S.? Leafy spurge is not a plant of economic importance in those parts of the world. Natural control mechanisms prevent this plant from becoming a weed with the devastating impact as we know it here in the U.S. This natural control, which is long term, is an important component of a management strategy against leafy spurge.

The Animal Plant Health Inspection Service (APHIS), received and accepted a proposal from R. Lorenz in 1986 which accepted the agency into a biological control based management program designed to reduce leafy spurge populations below economic levels. The program is a cooperative effort with scientists from the Cooperative States Research Service and Agriculture Research Service. Federal resources in 1988 significantly increased the activity and direction of this program. Six species of insects which attack leafy spurge at several locations on the plant have been introduced from foreign collections. These include four flea beetles whose larvae feed on the root system. A stem boring beetle that feeds both in the stem and roots. Finally, a shoot tip gall midge which reduces the amount of seed that a plant can produce. The results of the flea beetles are

very encouraging in that releases in 1989 are now well established with significant impact on leafy spurge populations. Several new species of flea beetles are currently being screened for future release. A clear winged moth, whose larvae are root borers, is a very exciting new possibility since these insects are also strong fliers.

A new and important component for success in biological control of leafy spurge is the active participation of the personnel within each state. Redistribution of these insects to new sites in each state is necessary for the establishment of these insects throughout the infested areas. The organization within each state must provide a plan for distribution and release of these insects following guidelines developed over the last five years by scientists working in the field. This work when accomplished by state organizations will allow current Federal resources to be utilized in introducing and establishing new species for future release.