

Weevils Attack 'Sticky' Thistle Problem In Maryland

BELTSVILLE, Md. — Little French and Italian weevils are helping U.S. Department of Agriculture and state scientists catch up with runaway *Carduus* thistles — problem weeds nationwide.

The latest success is in Maryland where roadside test sites showed 95 percent of thistle seeds were destroyed by weevils that eat seed heads of the weeds, according to Jack Drea of the department's Agricultural Research Service.

Maryland joins Virginia, Pennsylvania, New Jersey, Missouri, Oklahoma, Nebraska, Colorado, South Dakota, Montana, and California, in successful releases of weevils for biocontrol.

Carduus thistles came from Europe in the 19th century, leaving their weevil enemies behind. They arrived from Europe as seed in packing crates, in soil used as ship ballast then dumped ashore, and in some cases, because of the at-

tractive purple flowers, as seeds for gardens.

The thistles now pose a problem to 18 percent of the counties in the contiguous United States.

"It's required years of patience to collect, study and properly release European weevils as biocontrols," according to Drea, who is with the agency's Beneficial Insects Laboratory at Beltsville, Md. Since the 1960's, he says, scientists "have been chasing different types of *Carduus* thistles (such as the musk or nodding and the plumless thistles) with weevils brought from Europe."

The large, spiny plants invade and choke out livestock grazing land and highway plantings.

"Cattle don't eat thistles or reach for edible plants growing near them. And on roadsides, mowing thistles or spraying them with herbicides is too costly or impractical," says Drea, "so, biocontrol with weevils is our best

bet."

Before scientists turn weevils loose, the insects have to first pass several years of tests for possible ill effects to local ecologies. Then, once cleared and released, the weevils need about 10 more years to build up numbers sufficient for biocontrol.

Biocontrol of *Carduus* thistles in North America began in 1968 with the first release of *R. conicus* in Canada after six years of study by scientists of the Commonwealth Institute of Biological Control, the Canada Department of Agriculture and the Agricultural Research Service.

The key to such biocontrol success, says Drea, is to use the weevils where herbicides are not effective or practical. "To get at thistles over open pastures, fallow fields, wasteland, quarries, roadways and railways, biocontrol is ideal. The weevils multiply and move through infested areas at no

additional cost to taxpayers or farmers," he says.

The seed head weevil, *Rhinocyllus conicus*, was first released along Maryland and Pennsylvania roads in 1975-76 by USDA entomologist Suzanne Batra. The seed head is one of six other thistle-eating insects imported from Europe by U.S. and Canadian scientists.

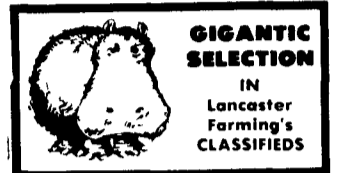
That weevil is beginning to provide good biocontrol of musk thistle, *Carduus nutans* in Virginia, and Montana, according to Batra. It has also been established in California to control milk thistle, *Silybum marianum*.

At a Maryland field day on thistle biocontrol in late summer, Richard C. Moffett, chief agronomist with the state's Transportation Department said they spend over \$200,000 a year to mow and spray thistles along highways. Four years ago, the department joined the funding of USDA research at Beltsville, Md.

that led to successful biocontrol at test sites and a transfer of further work to the state government.

Also in Maryland, Batra began releasing another imported weevil, *Trichosiromia horridus*, in 1981. *T. horridus* eats young thistle leaves. Another imported insect since released eats mature thistle leaves, another bores into stems, and still others destroy roots.

"The idea," says Batra, "is to synchronize release of several insects to hit all life stages of the plant, which weakens their resistance to plant diseases, and also lowers the amount of herbicides needed."



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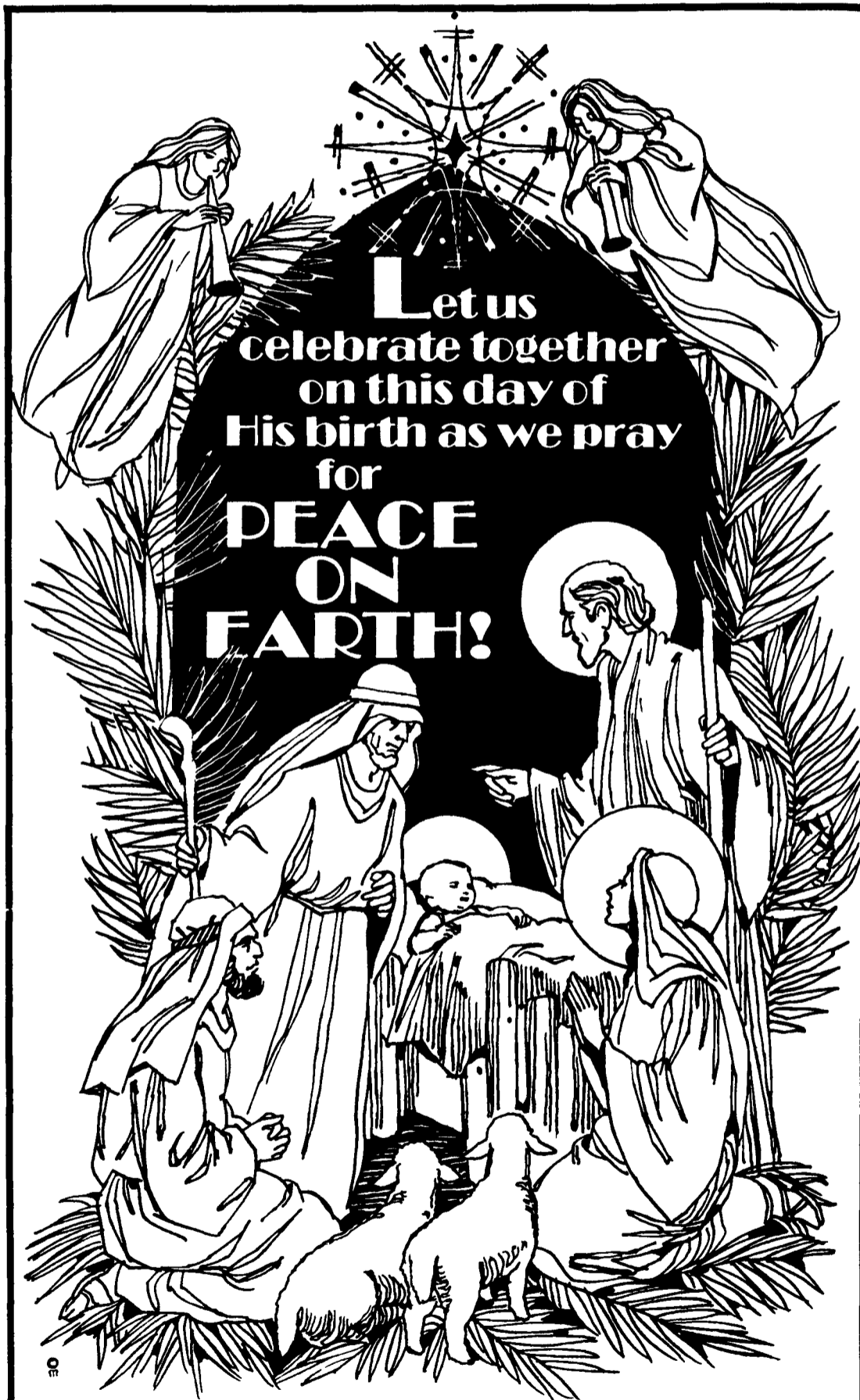


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