Controlling JAPANESE

JAPANESE beetles are notorious hitchhikers, but they had better not stick out their thumbs around the Cleveland-Hopkins Metropolitan Airport in Cleveland, Ohio, because last summer officials treated the field's 800 acres to effectively control these voracious pests that chomp on more than 275 different shrubs, trees, and plants.

Although Japanese beetles do not necessarily present a major problem to the airport grounds, their presence there poses a threat to agriculture west of the Mississippi River, where only a few have been found in isolated locations.

"Once they infiltrate an airport such as this, they can hop a jetliner and spread to California in a matter of hours," said Charles N. Shepeard, supervisor of the U.S. Department of Agriculture Plant Pest Control Division for Ohio and Kentucky. Steve Webster, USDA inspector for several counties in the Cleveland area, was directly responsible for the Cleveland project.

The airport, located about 10 miles southwest of Cleveland, was previously treated with DDT emulsion foliage spray to control adult beetle infestations. "We started using Sevin insecticide as a foliage spray in 1962 on recommendation of our Washington office. Some of the vital considerations for changing were its quick kill of Japanese beetles, its longer residual action, and its relative safety to humans and wildlife," said Mr. Shepeard.

Cooperating with the U. S. Department of Agriculture, the state and city authorities are vitally concerned with keeping airports free of Japanese beetles. And the airlines have also entered the picture.

Three years ago, the Cleveland-Hopkins field was badly infested. Beetles even buzzed customers in the terminal restaurants and stores. At that time, a residual soil insecticide program was initiated to control Japanese beetle grubs and a foliage spray was used to kill adult beetles which migrate from outlying areas.

To assist the program, the USDA furnished the equipment and trained the airline personnel in insecticide use. Airplane crews sprayed plane interiors

BEETLES at Cleveland's Airport

prior to take-off to prevent beetles from getting a free ride to uninfested areas.

Japanese beetles were first discovered in this country in 1916 near Riverton, New Jersey. They have multiplied and spread until they now are found in varying numbers from southern Maine southward to Georgia and westward to Illinois.

Last year, officials also treated the Akron-Canton Airport, south of Cleveland, and other strategic locations in the Cleveland area with Sevin. "Japanese beetles are abundant in about 30 counties in eastern Ohio," said Mr. Shepeard.

Rain Launched Beetle Attack

A dry summer in northern Ohio helped to keep Japanese beetle populations down last year, according to Mr. Shepeard. "This type of weather kills many of the newly hatched grubs and destroys many eggs," he said. But, he said, the rain during July triggered a beetle emergence from the ground, "and we went to work with our trucks."

"In the outlying airport areas, where the vegetation is dense, the adult beetle population was heavy," Mr. Webster said. He noted that beetles were especially prevalent on willow and wild grape leaves. These seem to be the beetle's favorite host plants in the airport area, which is almost devoid of its many other favored ornamental hosts.

Each hour, two men operating a pickup truck equipped with a mistblower, were able to treat 50 acres with insecticide.

Several large pieces of equipment, including the Buffalo Turbine hopper-fed machine in the background, were used in the Cleveland airport project. Equipment was periodically checked by this team of USDA scientists.

Spreader-Sticker Added

"We used 15 lbs. of insecticide to 100 gallons of water," Mr. Shepeard said, "and included a spreader-sticker substance to insure an insecticide deposit for several days on the plants and large black-top areas at the airport."

Since Sevin (carbaryl) insecticide is said to be safer to humans and animals than some other in-

Even the fringe areas of the giant airport were treated when USDA experts stopped the Japanese beetle infestation from spreading. Truck above was used to circle the airport grounds, as well as to lay down a protective mist on the runways themselves (below).

secticides, drift of the material does not present a hazard to property adjoining the airport. The spray crew reported the pesticide was well suited for mistblower application. They were not able to cover rugged terrain hardly navigable by jeep, but they fogged such areas with a thick cloud of mist.

"Sevin is easy to apply," Mr. Shepeard said, "and this is another reason for using it. Our men do not need to wear masks or special clothing while spraying. They just practice normal safety precautions.

"Sevin usually lasts about seven to ten days, or until it is dissipated by rain. It gives a quick kill to the adult beetles which emerge from under the soil, mostly during July and August in the Cleveland area."

After a four- to six week period above the ground, the beetles gradually disappear. Most of them are gone by the middle of August, but in New England some are around until frost.

"Most people forget about them when they are gone," Mr. Shepeard said, "but the damage has been done. They leave the plants on which they have been feeding and burrow into the ground, usually in turf. Then, they lay eggs which later develop into grubs.

"For some strange reason," he added, "Japanese beetles are attracted to airplanes. However, after we complete our spray program, more than 80% of the beetles at the Cleveland-Hopkins Airport will be destroyed, and we expect 100% control for a period of 10 years thereafter.

"Airlines didn't have to spray their planes last year because our continuing program took care of all the beetles in the immediate area. Our work last year indicated that, with the soil insecticide program to kill the overwintering grubs and the application of Sevin insecticide in the summer, we can keep the airport relatively free of beetles."

Beneficial Worms Can Become Lawn Nuisance

Although earthworms and night crawlers are usually regarded as beneficial, they can become so abundant in lawns that control measures are necessary, explains Bill Hantsbarger, Colorado State University extension entomologist.

Worm overpopulation in lawns can result in an uneven turf due to earthworm castings. Lawns damaged in this way are difficult to walk upon and more difficult to mow, the entomologist continues.

Earthworm control is limited, but numbers can be reduced by applying chlordane to the soil. One pint of 46% liquid chlordane should be mixed with 20 gallons of water. Ten gallons of this mixture will cover about 1,000 square feet of lawn area, Hantsbarger explains.

This earthworm control mixture can be applied with a conventional sprayer. After the insecticide has been applied, the lawn should be thoroughly watered. This will carry the insecticide down into the soil where the worms are working. When the lawn has dried, the turf will be safe for children and pets. One application of the insecticide should last an entire season.

Best results are obtained when soil temperature is warm and earthworms are working close to the surface. Late spring or summer applications are usually

Colorado Weed Book Published

A 218-page book, titled "Weeds of Colorado," has been published by Colorado State University Agricultural Experiment Station. The book is the work of Bruce J. Thornton, associate botanist, and Dr. H. D. Harrington, botanist.

Including nearly 150 drawings of weeds, the book also has an appendix containing summaries of Colorado pure seed law, pest law, and weed law. Copies of the book are available for $1, postpaid, from the Bulletin Room, Colorado State University, Fort Collins, Colo. 80521, Request Bulletin 514-S.