quently injured by herbicides; in the South it is the St. Augustine-Centipede group.

For the past three years turfgrass research stations throughout the country have been involved in pre-emergence crabgrass studies. Most stations have worked with spring applications, others have applied treatments both fall and spring, and some actually have conducted trials in fall, winter and spring in an attempt to determine the residual effects of the various herbicides. All stations have used some combination of the following materials in the 1960 field tests: Calcium arsenate, chlordane, Dacthal, Zytron, Pax, Diphan and Calcium propyl arsonate. In 1961 the above materials were tested along with these additional ones: Trifluralin, Dipropalin and Bandane.

**Timing Is Important**

Statements from two research people from separate sections of the country draw similar conclusions and stress the need of attention to timing. Joseph Duich reporting on tests held at Penn State in 1960 drew the following conclusions:

1. Chlordane must be used at rates in excess of 60 lb. — absolute for satisfactory control. This study showed granular chlordane as the most effective formulation.

2. Dacthal formulations were very effective for pre-emergence crabgrass control.

3. Dacthal was non-toxic to common and Merion bluegrass but significantly reduced the density of Pennlawn fescue and Colonial bent.

4. Zytron emulsion (M-1329) will temporarily discolor Merion bluegrass and reduce the density of Pennlawn fescue and Colonial bent.

5. Zytron formulations are very effective for pre-emergence crabgrass control.

6. Calcium arsenate discolored and inhibited growth of Pennlawn fescue and Colonial bent but was not too severe in reducing their density. It was non-toxic to common and Merion bluegrass and resulted in satisfactory crabgrass control.

**Danger in Re-establishment**

Roy Goss in a paper submitted to the Agrichemical-West, June, 1961 emphasized the danger of arsenicals to the re-establishment of desirable seedlings. He also stressed the need for the proper timing of the application. He gave dates for his area from Feb. 15 in the South to May 1 in the Washington, Oregon, Idaho area.

In 1960 and 1961 additional herbicides were introduced. Of the many tested these following are likely to survive: trifluralin, dipropalin and diphenatrile; Bandane; calcium propyl arsenate or the calcium propyl arsonate-calcium methyl arsonate combination. But once again some advantages and disadvantages show up.

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**Eighth Air Force Holds First Turf Conference**

A new group of golf course maintenance men was introduced to a turfgrass educational program when the first annual Eight Air Force golf course and greens maintenance workshop was held recently at Homestead AFB, Fla. The man responsible for the program was Maj. J. F. Lamper, officer in charge of construction of AFB courses at Westover, Offutt and Homestead.

Eighth AF personnel from Goose Bay in Labrador to Ramey in Puerto Rico attended. Maj. Lamper, with Capt. John Bickerstaff of Westover AFB and turf expert, Joseph Troll of the University of Massachusetts, planned the conference. All sessions emphasized fundamentals for Northern and Southern construction and maintenance.

Troll was the principal lecturer, presenting talks, slides and demonstrations on all aspects of maintenance. Other speakers included Walter L. Papp, deputy chief civil engineer, Eighth AF, Alan Wilson of the University of Florida, Robert Small, Plantation Field lab at Fort Lauderdale, Jimmy Nichols, well known New England professional, and two architects, Mark Mahannah of Miami and Geoffrey Cornish of Amherst, Mass.

A field trip was made to the turf nursery of O. S. Baker in Perrine. M/Sgt. Joseph Vicas in charge of the Homestead AFB course conducted a tour of his course and a discussion of maintenance practices and equipment. The course was designed by Mark Mahannah and opened recently. Several companies provided equipment for display while others furnished chemicals, fertilizers, irrigation pipe and descriptive literature.