



# UNITED STATES GOLF ASSOCIATION GREEN SECTION

## Mid-Continent Turfletter

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### CRABGRASS IS COMING

In recent years, crabgrass has claimed much attention from the weed control research men. Materials have been found which provide reliable control within certain limitations. Each superintendent must decide which materials fit best into his management program and which ones are economically feasible. Some of the materials are discussed here.

Phenyl mercury acetate is one of the materials that has been used for a number of years on putting greens. PMA has been found to be very effective when used properly and at the right time. It is effective from the time crabgrass germinates until it reaches the two or three leaf stage. If crabgrass is older than this it may be retarded but it is not likely to be killed.

PMA should be applied at the rate of  $3/4$  to 1 ounce of 10% material per 1000 square feet in 10 gallons of water. Do not use less water because injury has been observed in hot weather when more concentrated solutions have been applied.

Treatments should be started as soon as temperatures reach a level favorable to crabgrass germination. They should be repeated at weekly intervals throughout the crabgrass germination season.

PMA has the additional attribute of being a good fungicide. Therefore it may serve a dual purpose.

Disodium methyl arsonate is an effective material for crabgrass control after the plant has passed the two or three leaf stage. DSMA is marketed in numerous concentrations and the active ingredient may be designated differently by the several producers. Therefore it is necessary to give close attention to the instructions on the label of the package.

If DSMA is to be used on greens, the user should proceed with extreme caution. However, on fairway and tee areas, and particularly where bermudagrass is used, DSMA displays a high degree of selectivity. It can be an extremely useful herbicide for control of weedy grasses. Many superintendents in the South have

used combinations of DSMA with 2,4-D. The mixture consists of 4 lbs. of DSMA and 1 lb. of 2,4-D per acre. At this rate of application weedy grasses have been eliminated from bermudagrass turf. If you should plan to use such a combination of herbicides on other turf grasses, it would be wise to treat a small area first to determine the effects of the treatment on your permanent grasses.

Sodium arsenite, in the hands of an experienced user, is a good crabgrass control chemical. In bermudagrass turf sodium arsenite can be used for general crabgrass and weed control with relative safety. It burns the foliage but bermudagrass recovers rapidly.

The use of sodium arsenite on cool season turf is much more hazardous and it probably should not be employed during hot weather. Its use on mature crabgrass in renovation procedures during early fall is rather widely accepted.

Lead Arsenate toxicity to crabgrass seedlings was reported as early as 1927 in the Bulletin of the United States Golf Association Green Section. It may be considered the first pre-emergence herbicide. Investigators since that time have noted that the effects of lead arsenate in this respect were more pronounced on some soils than on others. Recent work at Purdue University indicates that the phosphorus content of the soil is one of the determinants of lead arsenate effectiveness.

Lead arsenate must be applied at relatively heavy rates and its use is costly. Its cost, however, need not be justified completely on the basis of crabgrass control. It keeps such weeds as Poa annua and chickweed in check and it is an excellent soil insecticide as well.

Calcium arsenate is another material that for many years has been recognized as having value as a pre-emergence herbicide and as a soil insecticide. However, its behavior has been erratic in the matter of toxicity to plants and its use has sometimes resulted in damage to permanent grasses.

Recently, interest in calcium arsenate as a crabgrass and Poa annua deterrent has been revived. Because it compares favorably with lead arsenate with respect to cost, its substitution for lead arsenate wherever feasible appears to be desirable. Prospective users should proceed cautiously, however, until they have sufficient experience with this product to assure safe use.

Chlordane, a versatile and highly effective insecticide at moderate rates of application, has been found to provide good pre-emergence control of crabgrass when used at heavy rates. Rutgers University has reported good crabgrass control at rates of 60 lbs. of technical chlordane per acre. Timeliness of application is one of the most important factors determining the effectiveness of this treatment. Chlordane should be applied just prior to the crabgrass germination season. It may be applied easily by fertilizer distribution equipment, particularly if it is available in the granular form.

DISEASE ON BERMUDAGRASS

If you have bermudagrass tees or fairways, it is likely you will find spring growth retarded by disease activity. Several organisms are known to attack bermuda early in the season. Among them are Helminthosporium species, brown patch and fusarium patch. A general purpose fungicide or an organic mercury product applied to important turf areas may help to protect early growth and promote a quicker development of the bermudagrass turf.

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Coming Events

June 6, 1959 - NATIONAL GOLF DAY

National Golf Fund donations to turfgrass research through the USGA have totaled \$62,700. Here's your chance to help.

June 8, 1959 - CENTRAL PLAINS TURFGRASS FIELD DAY

Swope Park No. 1 Golf Course in Kansas City will be the meeting place for the annual Central Plains Field Day. There will be a large display of equipment. Your mechanic might profit from attending this meeting. May we suggest that you bring him with you?

Interesting Reading

The October, 1958 issue of Better Crops with Plant Food is devoted to the fertilization of forest trees. Much of the information is useful from the standpoint of managing the small wooded areas found on most golf courses. Better Crops is published by The American Potash Institute, 1102 Sixteenth St., N. W., Washington 6, D. C.

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To live in a scientific age, an age of rapidly accumulating knowledge, imposes heavy obligations upon education and upon the resultant social and industrial controls. In the presence of modern science those who do not know can not long survive, else they must seek the primitive places of the earth where the more elemental practices may persist for a time. Even in these primitive places, science will soon catch up and there will again recur the old biological requirement to learn, to move, or to cease to exist.

- Otis W. Caldwell



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USGA GREEN SECTION

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