



Government News / Business

The fertilizer situation especially phosphorus appears to be tight. While production is running at full capacity, several factors have made supplies to growers shorter than usual this year. According to Dr. William C. White, vice president member services, The Fertilizer Institute, fertilizer exports have been running heavy. In addition, reduced rail capacity to transport bulk fertilizer from the producer to the distributor has been limited. White says that producers have not increased production for the past several years due to overproduction. Current plans call for expansion, but results will not be seen much before 1975. Supplies of fertilizer are not short, notes White. There is just less being transported through the pipeline. Some manufacturers have attempted to use barges on major waterways. However, this has been less than successful with heavy flood situations in the central U. S. Order early, says White. It will help in getting fertilizer when you need it.

ANSI Z-133.1 report on the safety requirement for tree pruning, trimming, repairing, or removal is now available. This standard is the first to be endorsed by the American National Standards Institute. It was prepared in cooperation with the International Shade Tree Conference and the National Arborist Association along with other interested manufacturers and organizations. If your business is involved in tree care, it would be advisable to secure a copy of this standard. Write to American National Standards Institute, Inc., 1430 Broadway, New York, N. Y.

Do you want to know the latest status of any bill before Congress? Then call (202) 225-1772. That's the hot-line number for an immediate computer read out, according to the USDA Office of Information. When calling, state the title or number of the bill.

The Environmental Protection Agency has proposed new rules governing hearing procedures for the regulation of pesticide products under FEPCA. The purpose of the rules is to insure that all parties adversely affected by EPA decisions will have a clearly defined avenue for seeking redress. The EPA Administrator may call a hearing to consider all information concerning a questionable pesticide, without the necessity of a cancellation, suspension or change of classification action. Additionally, in the case of a product suspension due to imminent hazard to the public, the new rules would accelerate the hearing process and thereby provide greater protection for the public. Other sections in the proposed procedures include: subpoena power given to EPA's administrative law judge in hearings; incorporation of the scientific advisory committee into the hearing procedure; and the right of the administrative law judge to make "initial decisions" which may become final where there is no appeal within a stated period of time.

The Environmental Protection Agency has granted registration to International Minerals & Chemical Corporation for the aerial application of Thuricide HPC in the control of gypsy moth. The product is a biological compound that was used widely by ground applicators last year to control this pest in forests, residential and public properties.

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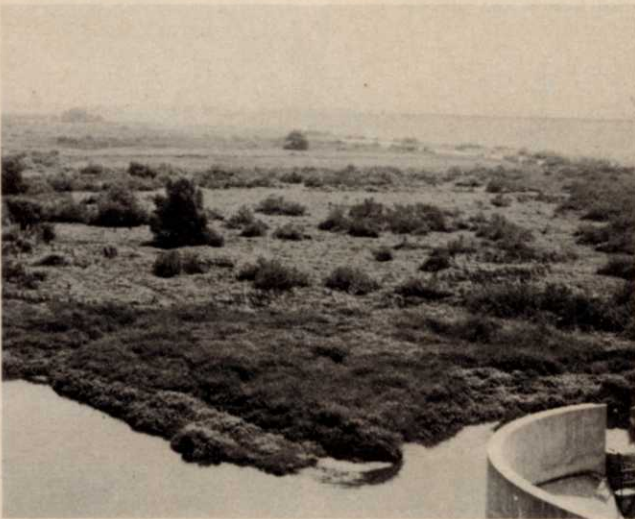
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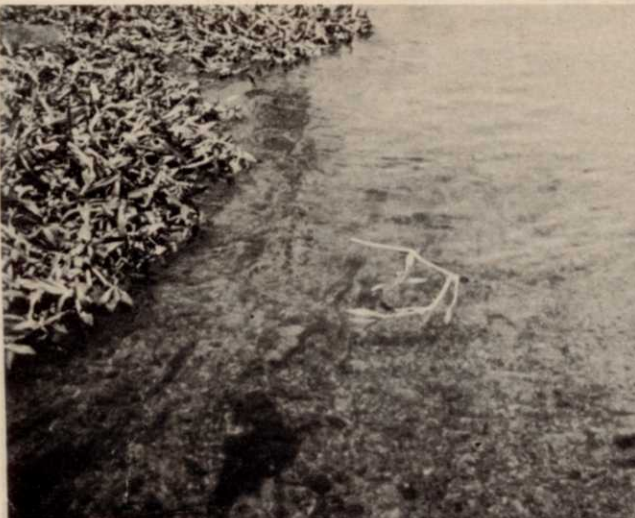
For More Details Circle (153) on Reply Card



Alligatorweed not only choked the waterways but encroached on the turfgrass areas in the city of Whittier. Here the weed is thriving on dry ground along a private residential parkway.



Looking from the top of the Whittier Dam into the Rio Hondo basin reveals a sea of alligatorweed. This weed displaces a great amount of storage water and fragments are often carried away by the public.



There goes a "start of another plant." This floater was found on the Rio Hondo River. Alligatorweed propagates through the spread of plant nodes. Seed is seldom if ever found in the United States.

Alligatorweed

Control Program Saves

Problem Identification

By **WESLEY G. HILL & ROBERT G. DONLEY**
 Deputy Agricultural Commissioner and
 Agricultural Inspector, respectively
 Weed and Vertebrate Pests
 Los Angeles County, Calif.

ALLIGATORWEED, a real southerner from South America, has been choking North American waterways for nearly 85 years. Literally millions of dollars have been spent on research and control methods to eradicate this weed from waterways throughout the southern states.

More recently, this pest which produces no viable seeds in the United States, has been reported in other sections of the country, and more particularly in southern California. As early as 1946, a University of Southern California botanist recorded the presence of the weed along the Rio Hondo River north of the Whittier Narrows Dam.

Ten years later plants were observed along a five-mile segment of the river. Subsequent investigation showed spot infestations in the concrete bottom of the Los Angeles River. Heavy mats of the weed extended out over the edge of the flowing Rio Hondo River where the bottom was unimproved dirt. In the basin behind the Whittier Narrows Dam, alligator weed had increased to solidly cover an area of forty acres. This represented the largest single find of plants.

In the San Gabriel River, alligatorweed was found in numerous places, especially along ten miles of unlined river bed. Additionally, a total of 19 satellite infestations have been located on private and public property in Los Angeles county from 1966 to the present. In almost every case, the origin of these finds can be traced to alligatorweed infested soils removed from the site of the parent infestation.

In Tulare county, the situation was somewhat different. Alligatorweed was first found in December 1965 near Porterville and Visalia. Concern was expressed about the rapidity of infestation because two large flood control and recreation lakes had just been completed only a few miles from both findings. Game and pan fish could be endangered by reduction in oxygen supplies. Many of the desired fish would then be killed and predatory fish populations would begin to rise.

Also, researchers were worried about decaying mats of Alligatorweed which produce hydrogen sulfide, a gas toxic to fish and other organisms. Recreations in other ways could be hampered.

Of prime interest though was agriculture's dependency on water throughout the San Joaquin Valley. Alligatorweed infestations were reported to reduce delivery

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Eradication California Waterways

Analysis And Control

By **WILLIAM R. CLARK**

Deputy Agricultural Commissioner
Weed and Vertebrate Pests
Tulare County, Calif.

THE CONTROL of alligatorweed has proven to be quite a complex operation. Even with several years of successful control and eradication in Tulare County and more recently in Los Angeles county, we cannot hope to let down our guard against this formidable aquatic weed.

The actual methods of control are becoming more sophisticated as our knowledge about the effectiveness of various environmental protection chemicals increases.

When the urgency of needed action was determined in 1966, the California department of agriculture and the Tulare county agricultural commissioner's office launched a concentrated offensive to eradicate the weed. With an Eradication Agreement formulated, our job was to conduct field trials and find a solution to the problem. Public and private awareness of the problem was in our favor. In short order, everyone concerned with alligatorweed was soon helping in test plots, contributing time and talent, making access roads, shifting water schedules and anything else needed to further enhance testing. All told, local, district, state, Federal, private and public individuals, organizations and corporations joined in the program.

To date over 350 field test plots with various chemicals and combinations thereof have been tested. Almost every chemical and method of control have been tried.

Foremost in our minds was the need for materials that would be safe in the water and safe to apply. It should be pointed out that tests conducted in Tulare and Los Angeles counties were made taking into account all environmental relationships. The fish and game commission as well as the bureau of chemistry for the State of California were deeply involved in securing the label deviation and subsequent registration on the product use. Additionally, our present method of control has been approved by the state. This does not mean that the product use may be adopted by other states without first checking with that state's officials.

Our initial thinking was that environmental protection chemicals would play a major role in the eradication program. Those with longer residual activity should be likely candidates. However, this was not necessarily the case.

The bare ground materials were all investigated with sodium-chlorate at 1200 pounds per acre showing the best results. Karmex diuron at over 100 pounds per acre
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This is what many of the ditches in Tulare County looked like before treatment. Note bottom is completely covered with an alligatorweed mat. Water movement is all but stopped.



After treatment with Vapam and oil the same ditch now is highly visible. No alligatorweeds are actively growing. An eradication program can be an effective tool in keeping unwanted vegetation under control.



This is alligatorweed, one of the toughest aquatic weeds to control in existence. Note hollow stem, small flower, opposite leaves, nodes and root. This weed easily finds a home almost anywhere.

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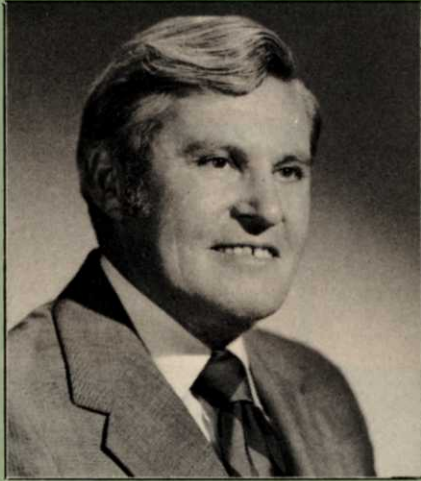
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Aquatic Weed Control "Identification Is The First Step"

By DR. ROBERT M. STERN

President and Director of Research
Great Lakes Biochemical Co., Inc.

Editor's Note: This article was adapted from material used by the author in determining treatment for algae and aquatic weed problems. One of the biggest problems in aquatic weed control is problem identification. Managers of bodies of water must be able to identify weed and algae species before a satisfactory treatment can be recommended. Dr. Stern has devoted much time in helping others help themselves. This article is designed around this goal.

AQUATIC weeds and algae in ponds, lakes and lagoons and other bodies of water are a big problem. There is no single "magic" formula, chemical, or method that will control all types of aquatic vegetation. Each problem waterway should be surveyed and from the information obtained, a treatment program formulated.

It is possible and economically feasible to chemically control algae and weeds in golf course irrigation areas, lagoons, lakes, and other waterways without adversely affecting humans, killing fish, animals or rendering the treated water unsuitable for irrigation purposes.

The first step in solving an aquatic nuisance problem is to identify properly the algae and weeds present. The accompanying chart on page 42 has been developed to more clearly understand what is necessary in identifying algae and establishing control procedures. A similar chart can be easily produced for other aquatic vegetation.

Algae are small primitive plants. They do not have true leaves or

flowers, but reproduce by means of minute spores or by continued vegetative growth. They can be found floating or attached to submerged surfaces in most lakes, ponds, and streams. Depending upon the nutritive value of the water, algae reproduce very rapidly, especially in hot weather.

Three types of algae are generally found in most lakes, ponds and streams. These are filamentous algae, unattached or planktonic algae, and branching algae.

1. **Filamentous Algae** are commonly referred to as pond scum and consist of growths of long stringy, hairlike strands. Most of the green and brown scums are slimy or cottony in appearance. Some of the common types are:

Cladophora — usually bright to light green in color and appear as cotton-like wads which often rise from the bottom of the pond.

Pithophora—dark green in color. They have a coarse texture and often feel like tough horsehair in the hand.

Spirogyra—also called "frog spittle." It usually appears as slimy bright-green which grow in strands along pond bottoms. As it matures, the strands loosen and rise to the surface.

Hydrodictyon—a filamentous type which is commonly referred to as the "water net" type. Found in deeper water and often float to the surface.

2. **Unattached or Planktonic Algae** cause green or reddish-brown water color and are more or less "free-floating." In the decomposition stage, these organisms give off a foul odor in water. They are nor-

mally found at or near the surface of the water where there is sufficient light intensity to permit them to grow luxuriously. Strains called **Anacystis**, **Anabeana** and **Ophonizomenon** usually produce green water while **Oscillatoria** species produce reddish-brown water.

3. **Branching Algae** are the most advanced forms of algae. They grow from the lake bottom with stems and branches and have a gritty feel. **Chara** and **Nitella** are the principle types of branched algae. **Chara** has a musky odor and is usually found growing in hard water, in shallow water and on a gravelly bottom. **Chara** and **Nitella** are often mistaken for underwater weeds such as coontail or milfoil. These algae are sometimes difficult to control, even when the proper management practices have been used.

AQUATIC WEED CLASSIFICATIONS

Most aquatic plants can be classified into five categories, floating plants, emerged plants, submersed plants, ditchbank or marginal plants and ditchbank woody plants.

1. **Floating Plants** include those that are not attached. They float freely on the surface of the water. Water hyacinths are one example of this type weed which has plagued southern waterways for many years. In other areas duckweed and watermeal form a green blanket on the water surface. Duckweed has tiny leaves called fronds with rootlets that hang down in the water. Watermeal appears as tiny green grains or granules floating on the surface of the water. Both are commonly found growing together. Duckweed is difficult to control be-

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Larry Maher (l) and Herbert Hoover check out the equipment in their boat prior to a job. (Below) Hoover makes sure hoses are not plugged. Hoses deposit chemicals into the water and not over the surface.

A Growing Business In Aquatic Weed Control

NUISANCE WEEDS and algae, combined with public demand for clean, clear recreational waters, are helping a small industrial weed control firm expand its business rapidly.

Control Services, Inc., a young Iowa-based company, is growing by filling the need for aquatic weed control in parts of Missouri, Minnesota and Iowa. Headquartered at Marion, Iowa, the firm already does 30 percent of its business in the

aquatic line and its owners expect that segment to increase dramatically over the next few years.

Company founder Herbert O. Hoover expects that aquatic weed control could become an equal share of his growing business as the public demand for clean water grows. Ponds, lakes, reservoirs, waterways and other recreational waters are seeing increased usage for boating, swimming and fishing.

"As more people use these waters,"

states Hoover, "there is greater demand for improved water quality and removal of nuisance weeds and algae." We've primarily sold our service to county conservation boards in Iowa, private lake developments and farm pond owners."

His firm is assisting in improving water value and recreational usage through safe and effective control of aquatic weeds and algae by qualified personnel. He and his three associates are licensed and trained to use the specialized equipment to get the job done.

"Two of us are former chemical salesmen, so we have the practical knowledge of products and labeling to enable us to solve most aquatic weed problems," explains Hoover. "We do a lot of algae control, plus we handle such problems as coontail, Eurasian milfoil and we've seen some naiad, which is tough to control."

A flat boat powered by a motor that propels the craft with a jet stream of water rather than a prop-driven motor helps them glide over the infested areas. Through another pump and either a 40-foot spray boom or a hand-held unit, they apply Cutrine or Hydrothol.

Both pumps suck water from the surrounding lake or pond, one for propulsion and one for spraying. The latter can push 300 gallons a minute, which, mixed with the chemicals, is then applied to the perimeter of the water area to be treated.

"Foot-long plastic hoses fastened over the spray nozzles insure that the application is made into the water and not over the surface," explains Hoover, "so there is no drift problem. We haven't backed away from anything yet, and we guarantee our treatments."

This one year guarantee also goes with all industrial weed control (IWC) applications. Most of that work involves weed control along fence lines, in storage areas and along rail spurs.

"Our industrial customers want results and service," Hoover says. "We use Princep and Pramitol to achieve bare ground weed control for a season. We check the results of applications and live up to our guarantee because a happy customer is what counts."

For IWC, Control Services aimed
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