

Training For The Safe Use Of Herbicides In Aquatic Plant Control

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Training is a management function. Management has the responsibility of training subordinates to perform their duties in the most economical, effective, and safe manner possible. Most managers are well aware of this responsibility, but unfortunately it is one that often is set aside in favor of more pressing problems.

The importance and value of training for the safe use of herbicides in these times of constant and rapid changes cannot be overemphasized. Good training is of utmost importance and an inherent part of the work situation. Personnel engaged in aquatic plant control must be competent and thoroughly trained. The development of new herbicides and equipment for their use; the adoption of improved control methods; and the necessary changes in techniques necessitate periodic training to keep them advised of new methods and progress in this field. The employees must be motivated not only to learn but to use the knowledge on the job.

To accomplish initial training and certification of personnel as well as periodic refresher training, courses should be conducted within each organization, and supplemented by on-the-job training, under the direction of qualified personnel.

Training courses should include: responsibility for aquatic plant control, administrative procedures, safety precautions in handling, mixing, storage, transportation, disposal of used containers, application of herbicides, equipment maintenance and field demonstration of control methods.

The basic cause of herbicide damage can be ascribed to personnel and operating procedures. Safe chemical usage is based on identification of the vegetation problem, selection of the correct chemical and effective and safe application. Considerations should be made of the locations of sensitive crops, chemical formulation and dosage, application equipment, application methods, and climatic conditions.

(1) Each supervisor should discuss with new employees and with other employees at least once a year, principles, and precautions essential for safe application of herbicides:

a. Each crew should be familiar with the area they are working in, have up-to-date area maps and know the location of all susceptible crops. Special attention should be paid to bird rookeries and spraying should only be scheduled when the birds are not nesting.

b. Accurate logs of each herbicide application should be kept including kind of vegetation, site, date and time, climatic data, chemical formulation and dosage, carrier and

volume, spraying pressure, spray equipment, and personnel.

c. Employees should be familiar with herbicides being used. Read and follow the instructions on the label, paying particular attention to the safety precautions. Basic use precautions should be observed regardless of the formulation being applied. Operators should avoid: contamination of mouth, eyes, skin, clothing and inhalation of materials. Use protective devices and clothing where necessary to effect this protection. For detailed information consult the instructions contained on the label of the herbicide being used.

d. Employees should be familiar with equipment being used; keep hose and pipe connections tight maintaining cut-off and control valves with positive action when applying herbicides. These measures will aid in avoiding contamination and save materials. If the equipment is not operating properly, it should be repaired or replaced before application of herbicides. When spraying floating plants such as hyacinth, best results are obtained with a flat cone pattern of spray confined in the forward quadrant of movement and all the vegetation between the centerline of the boat travel and the bankline is covered in a sweeping motion of the gun. For best results the spray pattern is confined to a forward angle of about 45° with the vegetation being treated at the maximum trajectory of the spray stream. The manner in which the guns are handled and the forward speed of the boat are coordinated with the area to be sprayed; however, it must be pointed out that all areas cannot be sprayed with the same equipment or the same application methods and each area must be analyzed and proper equipment and techniques employed.

e. Wind direction and velocity should be recorded periodically, using the pocket wind meter issued to each crew with a constant alertness for any changes. Chlorophenoxy herbicides must not be applied within one-half mile of susceptible crops except under the most controlled conditions. Nor should chemicals be applied when the velocity exceeds 8 to 10 mph in isolated areas or when wind exceeds 4 mph when sensitive crops are growing less than 2 miles downwind. The above listed wind velocities are of a general nature and each area sprayed should be analyzed by the supervisor and crew chief to determine the most economical, effective, and safest procedure of spraying.

(2) Training has been given to the Jacksonville District personnel and will be given to each new employee before

applying herbicides, with an additional plan for annual training. Training programs lend professional stature to the operators in the field and provides tangible evidence to the public that trainees have been instructed in the latest techniques for herbicide use.

(3) The length of training was approximately 4 hours. Training aids used were: 35mm slides showing correct and incorrect spraying procedures, wind meters, weekly logs, chemical labels, spray equipment, and approximately 50% of the time was allocated to questions and answers.

(4) At least once a year all supervisors and employees should read the following publications:

a. Orsenigo, J. R., 1964, Hazards Encountered in Herbicide Use. Hyacinth Control Journal 3:21, 22, University of Florida, Everglades Experiment Station, P. O. Drawer A, Belle Glade, Florida 33430.

b. Orsenigo, J. R., 1963, Crop Damage: A Hazard of Herbicide Use, Hyacinth Control Journal 2:15, 16, 20.

c. Orsenigo, J. R., 1965, Apply 2,4-D With Care; University of Florida, Everglades Station Mimeo Report EES65-21.

(5) Additional References:

a. Job instruction training Civilian Personnel

Pamphlet 41-B-3, Department of the Army, Washington, D. C.

b. Department of the Army Technical Manuals TM-630, TMS-632.

c. General Safety Requirements—Manuals, Corps of Engineers U. S. Army EM 385-1-1.

d. Wunderlich, W. E., Mechanical Research, New Orleans District, Corps of Engineers, P. O. Box 60267, New Orleans, Louisiana 70160.

e. Blackburn, R. D., Application of Herbicides to Aquatic Weeds (unpublished report)—U. S. Department of Agriculture, P. O. Box 9087, Ft. Lauderdale, Florida 33310.

f. Four (4) Keys to Pesticide Safety, Agriculture Chemical Safety Programs Kit. (Material obtained from the Florida Agriculture Extension Service, University of Florida, Gainesville, Florida 32601.)

g. Safe Disposal of Pesticide Containers and Surplus Pesticides, Agricultural Research Service, U. S. Department of Agriculture. U. S. Government Printing office 0-750-459(22).

h. Hyacinth Control Journals 1 thru 4, The Hyacinth Control Society, P. O. Box 9087, Ft. Lauderdale, Florida 33310.