Sale And Purchase Of Herbicides

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INTRODUCTION

The term "herbicide" means any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any weed.[1] It is an economic poison as defined by the Federal Insecticide, Fungicide and Rodenticide Act (7 U.S.C. 135-135K); an act to regulate the marketing of economic poisons and devices and for other purposes.

The Federal Insecticide, Fungicide and Rodenticide Act requires that an economic poison be registered with the Environmental Protection Agency (EPA) prior to being shipped in interstate commerce. At this time, there are no charges for registering a product. Sounds simple?—Yet, you may have heard that it costs between two million and ten million dollars to get a new product registered with EPA. Why?

Before a product can be registered, it must have supporting data to prove that it is effective on the target pest, safe for the applicator and environment when used according to directions, bears adequate warning or caution statements and be properly labeled.

The registrant is responsible for all label claims, each of which must be based on and supported by adequate efficacy and phytotoxicity data. The data must be recent, reliable, scientific information, conducted on the formulation intended to be registered, and conducted during the normal growing season in the intended area of use. Such data usually result from research by the registrant, state and federal specialists, private laboratories, foundations, institutes, and other agencies qualified to perform competent research.

AQUATIC USES OF HERBICIDES

In general, the information needed to develop and support label claims are similar to those outlined for registration of herbicides intended for use on land. Adequate directions for use would include:

a. The names of the types of sites intended to be treated (e.g., lakes, ponds, irrigation ditches).
b. The types (e.g., floating, emersed, submersed) and the common names of the weeds intended to be controlled (e.g., waterhyacinth *(Eichornia crassipes* (Mart.) Solms), cattails (*Typha* spp.) hydrilla (*Hydrilla verticillata* Royle) except that for algae only the type need be stated (e.g., blue-green algae, filamentous green algae).
c. The type of control intended, if applicable, (e.g., kill, topkill, inhibit growth, or seasonal control).
d. The dosage to be applied appropriately expressed as:
   1. pounds of product per acre.
   2. pounds of product per acre foot of water, or
   3. pounds (or gallons) of product per cubic foot per second per unit of time.
e. The method of application, expressed as:
   1. broadcast of granules.
   2. injection beneath water surface.
   3. liquid spray on surface, also requires:
      (a) the name of the diluent
      (b) the concentration of the spray liquid, and
      (c) the volume of spray liquid to be applied per acre and limitations on spray droplet sizes (e.g., coarse sprays of 400 to 800 microns in diameter)
f. The time of application in terms of:
   1. stage of growth of weeds.
   2. season of the year.
g. The number of applications per year and the intervals between applications which may be expressed as a range of time intervals, or as a statement to repeat when weed regrowth is evident.
h. Limitations on the use of the product, including:
   1. the area or fraction of the site to be treated at any one time.
   2. the interval between application and the use of the treated water for each of the various uses of water (e.g., drinking water for man and domestic animals, irrigation, crop spraying, fishing, and recreation).
   3. the use of the product within the root zone of desirable vegetation.

Adequate data must be submitted to support each item in the directions for use. This information must be obtained from *in-use* tests using the same formulation of the product as that which is proposed for registration.

a. Tests must reflect each end of every proposed dosage range and the limits of every proposed pattern of use.
b. Tests must be replicated sufficiently to establish, within statistical confidence levels, the efficacy of the product against target weeds and the need for the dosages proposed.
c. Tests must be geographically distributed to include the appropriate water types, temperatures, and other environmental factors.
d. Test reports must include the type of aquatic site, the dosage, the degree of weediness, the types of weeds, the physical measurements of the treated area and of the whole site, and the time of each

[1]FIFRA, 7 U.S.C. 135 Section 2 (F).

application in terms of date and in terms of stage of growth of the weeds.

e. If treated water may be used for irrigation, then tests must be made on the highest concentration of the product in water which will not cause injury to crops or desirable vegetation. This level is to be considered as the highest at which the treated water may be used for irrigation.

f. Tests must be made in *in-use* situations to establish the concentrations of the product in water as a result of application as proposed, and the decline of that concentration with time and/or distance of flow. It must be shown that the use of treated water can be controlled during the time and/or distance of flow needed for the concentration of the product in the treated water to decline to non-phytotoxic levels. Appropriate statistical analyses of the data and development of depletion curves are essential.

SUMMARY AND CONCLUSIONS

There may be other tests required before the product is registered. After the product is registered, it may be marketed in interstate commerce. Of course, the buyer must comply with the various state laws.

The present federal pesticide act does not regulate the actual use of the product. It is expected that the user will comply with the directions. EPA does investigate accidents or incidents involving pesticides. If our investigation or investigations find that there are abuses to the environment by the product, it is possible to suspend or propose the cancellation of the registration of the product.

Briefly, we can say that it requires a great deal of effort to get a herbicide ready for sale. It is fairly easy to purchase the product. In order to assure the availability of the product for continual use, the label should be read and the product used strictly in accordance with the directions.

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INTRODUCTION

This organization (Hyacinth Control Society) exercises a major impact on the total ecology of Florida. This presentation is directed toward your action and the impact on man. One million people drinking surface water are oblivious to the magnitude of chemicals which are intentionally and indirectly added to their drinking water. This fact coupled with the lack of a program of State surveillance of residues of herbicides or any other agricultural chemicals in Florida waters are the two points to be discussed. We will consider families of poisonous chemicals under the heading "Economic Poisons." Unlike chemicals which may be added in processing foods, these economic poisons are used and are effective in their proposed uses because they are poisonous to the insect or organism which adversely affects the production of food, feed, or fish. The margin of safety between the recommended effective use level and the level which may be harmful to man or his beneficial animals and plants is, in some cases, small. Our consideration will be focused on surveillance activities in Florida. This is an important part of the total effort for environmental management for mankind.

DISCUSSION

The key to any intelligent or responsible control program must be the availability of tools needed to do the job. To apply herbicides, one must have a delivery system. Whether this be a hand pack sprayer, an outfitted air boat, or a crop dusting plane or helicopter makes no difference, except one of degree. The continued use of pesticide chemicals in the environment of mankind must be based on the application of the analytical surveillance of residues which result from the intentional use of pesticides. Incidentally, the unintentional or indirect residues which occur in the environment are also an important consideration. In the 1960's, these "indirect food additive" situations were the subject of at least two National Academy of Science studies. While those deliberations dealt primarily with the chlorinated hydrocarbon or persistent chemicals, other agricultural chemicals, in their degradation, leave breakdown products which in turn must be considered as to their potential hazard to man and his environment.

Turning our attention to the analysis of water for pesticide residues, let us look at some of the surface water sources in Florida. In the beginning, the analytical service capability and support came from the Communicable Disease Laboratory pesticides facility, Atlanta. It was subsequently moved to Athens, Georgia. Carbon Chloroform Extract (CCE) analyses were provided as far back as 1962 and continued through 1971. The new analytical sensitivity to organic chemicals brought by the gas chromatograph had been applied to smaller sample sizes by 1963. Sophistication in the use of this and other analytical tools has made it possible to detect small amounts of contaminants in water.

At this time, the Tampa water plant and the Brevard

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