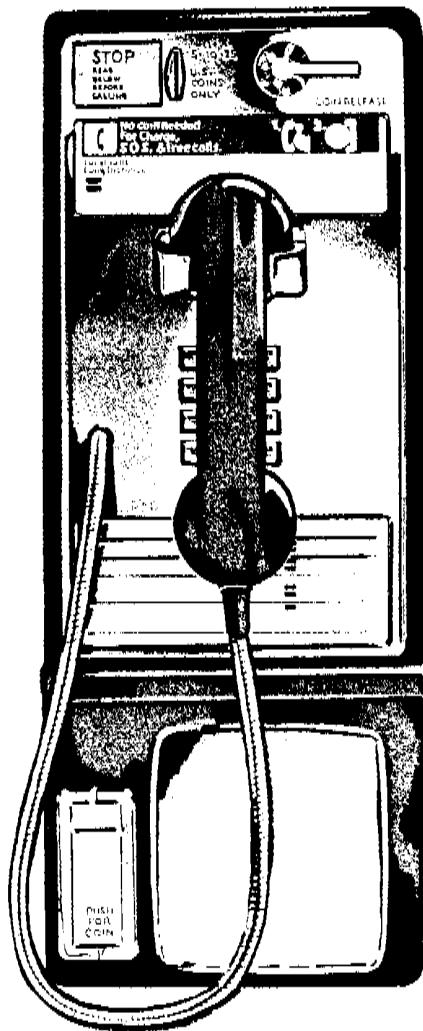




# For Emergency Response or Fire Call 911



## Pesticide Emergency Telephone Numbers:

### To report pesticide spills:

The Minnesota Department of Public Safety, Division of Emergency Management (DEM) can be reached 24 hours a day. Ask the DEM to notify all appropriate state agencies for you, including the Minnesota Department of Agriculture.

**Twin Cities call (651) 649-5451**

**Greater Minnesota call 1-800-422-0798**

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### When you call to report a spill, give the following information:

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Your name;  
Where you can be reached;  
Where the spill is;  
Type of pesticide;  
What time the spill occurred;  
The source of the spill;  
How much material was spilled  
(and for how long);  
Whether the material is spreading; and  
Nearby surface water or wells.

**For spills involving large amounts of pesticide, highly toxic chemicals, or extensive contamination**, additional information may be obtained by contacting the Pesticide Safety Team Network. These experts are ready 24 hours a day to give advice on how to handle emergencies.

**CHEMTREC at 1-800-424-9300**

**Pesticide poisoning:** Call the Poison Control Center. They can provide quick information for treating victims of pesticide poisoning.

**All of Minnesota call 1-800-222-1222**

# **Private Pesticide Applicator's Training Manual**

**Edition 18.3**



***Private  
Pesticide Applicator  
Training Manual***

18.3 Edition

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Appreciation is extended to Dr. Larry Schulze of the University of Nebraska for use of their publication *Federally Registered Restricted Use Pesticides* in the Appendix.

Appreciation is extended to the Minnesota Department of Agriculture for the use of their publications *Guidelines for Developing and Maintaining an Incident Response Plan*; *On Farm Storage of Bulk Liquid Fertilizer*; and *Water Quality Best Management Practices for Agricultural Herbicides*.

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Printed on recycled paper with minimum 10% postconsumer waste, using agribased inks.

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Development and production of this publication was paid for by the Pesticide Applicator Training Program, University of Minnesota Extension Service. Printing of this publication was paid for by the USEPA Region 5 and the Minnesota Department of Agriculture's pesticide regulatory account.

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## ***INTRODUCTION***

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This manual is a guide for **private pesticide applicators**—farmers, producers, and others who apply pesticides on their own land or on land that they rent for production of an agricultural commodity.<sup>1</sup> This manual is meant to be used as a training aid for private applicators who wish to be certified to apply restricted use pesticides. However, all pesticide applicators should be familiar with the information in this manual in order to handle and apply all pesticides in a safe and efficient manner.

This manual is not an endorsement of pesticides as opposed to alternative methods of pest control. Indeed, pesticides should be used as part of an Integrated Pest Management program that considers nonpesticide control strategies. It's in everyone's interest to avoid all unnecessary pesticide use. If you use pesticides, it is essential to know how to use them safely, legally, and effectively. That is the purpose of this manual.

Pesticides are used because they can be effective, efficient, and economical. In many cases, properly used pesticides can provide more consistent control with less labor and lower costs. The important thing is to use them properly. Not only is it uneconomical to use pesticides improperly, but their misuse has caused public concern about the effects of pesticides on health and the environment. Knowing how to use pesticides properly can help you protect yourself, your neighbor, the environment and the public.

### ***Training and Certification***

In 1972 Congress enacted the Federal Environmental Pesticide Control Act (FEPCA) as a significant amendment to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) of 1947. The law contained a number of new provisions designed “to improve the control of pesticide use in terms of the environment and mankind while at the same time recognizing the need for ready availability of these vital tools.” Implementation of the Act became the responsibility of the newly created U.S. Environmental Protection Agency (EPA).

As a result of the federal mandate, Minnesota developed a statewide program that provides for the training and certification of pesticide applicators. Responsibility for training lies with the Minnesota Extension Service and certification is the responsibility of the Minnesota Department of Agriculture. You must be certified before you can purchase or apply a restricted use pesticide.

The “restricted use” classification has been and will continue to be an alternative to cancellation. Among the new provisions were those that mandated that the EPA must classify all pesticide products as either “general use” or “restricted use” and that “restricted use” products may be used only by certified applicators. A product is designated as “restricted use” by the EPA when it is felt that it “may generally cause, without additional regulatory restrictions, unreasonable adverse effects on the environment, including injury to the applicator.” The certification program is designed to teach applicators to properly handle and apply restricted use

products in a safe and efficient manner.

Further information about FIFRA and other pesticide laws and regulations can be found in Part 2—Pesticide Laws.

Even if you don't intend to use restricted use products, you are encouraged to participate in the training and certification process. The training provides information on proper application procedures and safety precautions for handling pesticides. You will also learn about the effects of pesticides on the environment and how to eliminate unnecessary pesticide use. Many problems of current public concern can be substantially reduced if applicators participate in available educational programs.

### ***Using this Manual***

This manual is divided into nine parts. Each part begins with key questions about the material to be covered in that part and ends with a summary of the main points.

Difficult and unfamiliar words are explained as much as possible in the text. There is also a glossary in Appendix D, containing a list of commonly-used words and their definitions. Appendices A through C and E contain tables and lists referred to in the text.

There are a number of things that pesticide applicators can do to protect themselves and the environment:

- Use Integrated Pest Management to avoid unnecessary and uneconomical pesticide use.
- Follow laws, regulations and pesticide label directions.
- Know how pesticides can harm wildlife, contaminate groundwater, and affect human health.
- Follow safety precautions for handling, storing, and disposing of pesticides, spray solutions, and pesticide containers.
- Use pesticides in a way that minimizes the production of waste materials.
- Wear protective clothing and follow laundering guidelines.
- Use proper application equipment that is regularly calibrated and cleaned.

This manual provides information on all these subjects.

<sup>1</sup> Other manuals and training materials are available for commercial and noncommercial pesticide applicators in Minnesota.

***Reading and Learning*** by J. Michael Bennett

The poet William Wordsworth has observed, “The eye—it cannot chose but see; we cannot bid the ear be still ...” We can, and do, see and listen selectively. For instance, we see all the cars we pass on the freeway each morning, but we would be hard put to remember their makes and the order in which we saw them. This is because we see them with our eyes, but not with our minds. We don’t think about what kind of cars we see. We look at them for the purpose of avoiding contact with them, not to identify brands and memorize order of appearance. We could identify and memorize each individual car if we needed to do so, but the complicated and intricate job of negotiating the highways is not aided by mental activity of that nature. In fact, to do so would not only be unnecessary but would distract us from our main goal. Consequently, we carefully notice and evaluate the appearance and importance of only those cars that appear to be significant in some way to our primary goal, which is to arrive at our destination safely and on time. In other words, we see individual cars and traffic in general with our eyes, but our minds react only to the ones that have meaning for our specific task.

So it is with words. We do not need them all to see clearly the message an author intends. It is probably true, in fact, that over half of an English-language narrative is grammatical, not ideational. In other words, over half the words do not convey or impart knowledge; rather, they render the English “proper,” per our expectations, and provides the gestalt for the words and phrases that do carry meaning. We speak especially of phrases because notable ideas and concepts are rarely represented by a single word, although minutiae frequently are.

So we are faced with an interesting and challenging situation in that we are asked to read not words — as we have quite naturally done for all our educated lives — but thoughts. We are to think about the author’s thoughts and not the words he or she arbitrarily chose to express those thoughts, on that particular day. How do we begin to do this essential task? There are four major steps to take in order to efficiently and effectively read this Private Pesticide Applicator’s Training Manual.

**Step One:**

**Eliminate the Bad Givens and Employ the Good Givens**

The first step is to avoid the bad habits of stopping unnecessarily on big words; going back over words you saw perfectly well the first time you read them; and, “saying” all the words with your lips, your larynx, and/or your mind.

By eliminating polysyllabic-word-fixation, habitual regression, and vocalization, you take half a stride.

You finish this giant step toward Efficient Reading by thoughtfully setting a purpose for your reading, pushing yourself along, (challenging yourself to go faster) and by concentrating solely on your reading job by establishing a personal task-oriented resolve, and by using the titles and sub-titles as locators for your thoughts. At this point, you are able to tap your enormous mental potential — to read rapidly and accurately, understand what you read, and remember it as long as you need to do so.

**Step Two:****Anticipate the Author's Thoughts**

The second step toward efficiently reading this publication involves making a strong mental effort to ascertain the author's thoughts. Try to anticipate the direction of the chapter or section. Try to guess what will or can or should come next. The ability to do this is innate in most adults, and we do it involuntarily to some degree because it is a natural function of the active mind. You are now asked to capitalize on your native capacity and your experience for anticipation and participation and, further, to consciously attempt expansion and refinement of your ability to employ this mental phenomenon which we call "Language Expectancy."

It is believed that underdeveloped Language Expectancy explains in large measure the inability of some youngsters, to master certain aspects of efficient reading. Adults tend to do much better in this area, probably because their vocabularies are broader and deeper, and their experiential backgrounds are far richer. The important thing here is to know that you can be an active participant with the writer of the text if you let yourself be, and that to do so pays many dividends to the reader.

The thinking process is the same for all human beings. It should not be surprising, therefore, that good writers express their thoughts in such a manner that good readers can go right with them. You must develop the skill and the confidence to anticipate printed thoughts in the same manner as you do spoken thoughts. It is just as natural to do this when reading as when listening, much easier in reading to confirm or reject assumptions, and just as exciting to reach conclusions. The results, as measured by reading comprehension and speed, will make your labor worthwhile. Try hard not to remain aloof from the print. Go along with the flow by thinking and anticipating — in a word, by participating.

**Step Three:****Practice Rhythmic Perusal**

The third step, like steps one and two above, is also a combination of physical, mental, and psychological factors. This step is a specific reading style called Rhythmic Perusal. The term Rhythmic Perusal refers to an ordered recurrence of eye movements conducive to careful examination and consideration, while at the same time doubling or tripling your "normal" reading speed and your long-term memory.

Rhythmic perusal is not an especially radical form of reading, nor is it an extreme departure from standard reading practices. It is, however, sufficiently different to warrant special attention. The lessons learned up to this point must be consistently and rigorously executed to make Rhythmic Perusal work. The critical difference between Rhythmic Perusal and "normal" reading has to do with eye movements.

The average adult reader, for instance, fixates on almost every word. Consequently, the eyes move across the line in jerky little movements called saccades. This more or less natural habit is tiring, a waste of time, and unnecessary because all words do not have equal importance. Therefore, the efficient reader will want to develop proficiency in thinking selectively. That is, in processing words in different ways because of the importance of certain words in conveying meanings the author intended.

The following are the steps to take when practicing Rhythmic Perusal:

- A. Review in your mind the common good and bad reading habits and their relationship to your reading skills.
- B. Read and think about the title of the reading selection you are about to begin.
- C. Move your eyes smoothly and rapidly across each line in a left-to-right progression. However, attempt to traverse each line in one movement. Smooth is the same thing for all of us; rapid will vary from person to person. Do not allow your eyes to fixate on each word — just keep moving. When you make the return sweep to the next line, do it very quickly. Then begin a smooth and rapid examination of the next line, and so on, until you are finished. That is Rhythmic Perusal.
- D. Practice moving your eyes across the tops of the words; not quite between the lines, but across more of the top than the center or bottom. It is an interesting oddity that most English-language sentences can be comprehended even if you can see only the top half of the letters. You needn't go quite that far (at first), but by focusing on the upper half of the sentence, you can resist fixations and increase your reading rate. Also, you can avoid giving undue attention to minutiae and unnecessary words and, as a result, increase your reading comprehension of thoughts and ideas.
- E. Don't worship words. Read for thoughts, not for words. THINK AHEAD OF THE PRINT. Notice phrases and word groups (ideas), and keep your mind alert. The word is not the thing, not the idea you are reading for; it is just one of many options for expressing the thoughts and ideas of the writer.
- F. Look at each word as you rhythmically scan each line — See phrases, word groups, and notable words— Think with the writer about ideas and topic development.

With practice, and with the confidence that results from practice, you will learn to rely heavily on Rhythmic Perusal as your “workhorse” reading style. This is the safe one! There is not much selectivity going on because you are not asked to skip any print or leave anything out. Other styles may demand this of you, but Rhythmic Perusal is careful and sure. It is not slow, however. The benchmark speed is 500 words per minute. That is two or three times the national average for bright, highly motivated people. As such, it allows you to finish almost any time intensive timed task, such as the major standardized tests used for admissions or promotions. Rhythmic Perusal will also allow you to read and study the Private Pesticide Applicator's Manual in a relatively short period of time.

As the learner knows, the adult mind responds to rapidity. And, to get better at any sport, any job, and any social activity such as conversation, or dancing, you must challenge yourself to do better, and of course you must practice meeting that challenge. Practice really does make perfect. Within limits, you will comprehend better and read faster if you push yourself along (if you are not daydreaming, fixating, and/or regressing) when you are reading. The principal reasons for this happy fact are part and parcel of the preceding discussion; no single point, however, is more significant than an understanding of “thought speed.”

By thought speed, we mean the speed at which the mind automatically functions. This rate of thought varies between persons and, indeed, within each of us depending on such factors as interest, prior knowledge, importance of the material being processed, and even physical health. Rarely, though, will thought speed be less than 500 words per minute in a narrative treatment of any subject. And, since adults do not need to process each word individually (as do children), a reading rate well below one's thought rate is an open invitation to daydreaming, inadequate comprehension, and poor retention. The goal, therefore, is to process printed material, that is, to read, at a speed equal to one's ability to understand the thoughts and ideas of the material. And, that's somewhere between 300 and 600 words per minute.

Read directions, formulas, and (especially) poetry word-by-word. For the rest of your life, however, read literature, exposition, and extremely difficult or important documents in Rhythmic Perusal, following the six procedures described above.

The new Private Pesticide Applicator's Training Manual has many directions, certain formulas, and a good bit of "scientific talk." Will Rhythmic Perusal prove helpful in this book, and for your purposes? Very much so, and for two reasons.

- 1) Over half of this book is written in a narrative (story) style. The thoughts may be "bulleted," or numbered, but they tell a complete tale as you progress through the manual. Perfect for Rhythmic Perusal.
- 2) In the parts which require contemplation and/or memorization, you should read the whole part or section in Rhythmic Perusal because doing so will give you an excellent feeling for the topic or subject as a whole. First reading difficult, picky, specific, "study" type materials in the Rhythmic Perusal style works as a powerful preview and "advanced organizer" for your study/memorizing reading the second time through. And, it takes less time, and results in better understanding and better retention of the facts, to smoothly read the words — that is, the writers thoughts, feelings, and ideas — using the Rhythmic Perusal approach followed by your favorite "study reading" approach, than it does to study it twice.

Please try these suggestions. They are the product of much good research, and they have stood the test of time.

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