1. Laws and Regulations

- ❑ FIFRA as amended, and any other applicable federal laws
- ❑ State laws
- ❑ Restricted Use Pesticides
- ❑ Liability
- ❑ Right-to-know cases
- ❑ Specific Misuse Cases
- ❑ Risk assessment

Discussion should include a review of the roles and inter-relationships of federal and state agencies regulating pesticides.

Changes in laws and/or regulations should also be addressed. Applicators should be advised of what constitutes illegal acts and violations.

2. Pesticide Labels and Labeling Comprehension

- ❑ What is on a pesticide label?
- ❑ When should you read the label?
- ❑ A typical pesticide label.
- ❑ Recommendations made from labels.

A typical pesticide label should be discussed with each major point of information being indicated and its position on the label pointed out. Students should be taught that the label is the first and best source of information and that one should never deviate from the label in making recommendations or applying pesticides. *(Minnesota Statutes Section 18B.07, subdivisions 1 and 2)*

3. Pesticide Safety

- ❑ Pesticide Selection
- ❑ Handling, mixing and loading pesticides
- ❑ Application of pesticides
- ❑ Re-entry into treated fields and required posting
- ❑ Protective clothing and equipment
- ❑ Care and maintenance of protective equipment and clothing
- ❑ Pesticide poisoning effects and symptoms
- ❑ First aid for pesticide poisoning
- ❑ Medical supervision for pesticide applicators
- ❑ Toxicity of pesticides
- ❑ Minimizing exposure —chronic toxicity—risk assessment
- ❑ Personal safety and hygiene

If possible, actual protective clothing and equipment should be used and a practical demonstration made to show the proper fitting of the protective clothing, equipment and respirators. It should be impressed upon the student that careful selection, handling, mixing and application of pesticides as well as observing re-entry times into treated fields will go a long way toward eliminating applicator pesticide exposure and accidents.

4. Environmental Considerations

- ❑ General
  a. Soil
  b. Water
  c. Air
  d. Plants
  e. Beneficial insects
  f. Wildlife
- ❑ Pesticide persistence
- ❑ Pesticide accumulation
- ❑ Alternatives to pesticide
- ❑ What pesticide applicators can do to protect the environment.
- ❑ Drift to non-target sites
- ❑ Environmental fate of pesticides
- ❑ Non-point source pollution

Discussion should include ground and surface water problems and ways that pesticides can cause pollution of these waters.

Discussion about wildlife should include information regarding the Federal Endangered Act (Public Law 100-478) and the implication of the use of pesticides in certain areas where endangered or threatened species have been identified. *(Minnesota Statutes Section 84.0895).*

5. Pests

- ❑ Pest identification biology and habits
- ❑ Threshold levels
- ❑ Choice of control methods
- ❑ Timing and applications

The students should be trained to recognize and understand the biology and behavior of those pests he/she needs to be familiar with in order to diagnose a problem and select the proper control measures. The student should be made aware of resistance problems and of beneficial species that may be impacted by certain control measures.

6. Pesticides

- ❑ Classification, chemistry and characteristics
- ❑ Types of formulations
- ❑ Pesticides compatibility
- ❑ Additives and adjuvants
- ❑ Pesticide resistance

The student needs to understand the nature of the various types of formulations of pesticides available and to recognize that some pesticides are not compatible. Students should also be taught the function of spray additives and adjuvants as well as possible potential problems.

7. Pesticide Application Equipment

- ❑ Types of Equipment
- ❑ Equipment parts, with emphasis on nozzles
- ❑ Sprayer maintenance and cleaning
- ❑ Sprayer storage
- ❑ Pesticide transfer — closed systems

The student should be made familiar with the various types of hand, ground and aerial equipment available and with the various parts and functions of spray equipment. The student should be made aware that sprayer maintenance, cleaning and storage is highly important to maintaining a properly functioning sprayer.

8. Pesticide Equipment Calibration

- ❑ Calibration factors
- ❑ Calibration methods

The student should be taught that proper calibration of spray equipment is one of the most important factor sin pesticide application equipment and to understand the importance of performing frequent calibration.

9. Pesticide Calculations and Application Techniques

- ❑ Calculations for mixing
- ❑ Useful formula and conversion tables

Students should be given training on the mathematical calculations required to figure the proper amount of pesticide to place in the sprayer or to apply per acre. Familiarization with useful formulae and standard conversion tables is necessary for the student to use pesticides properly.

10. Pesticide Transportation, Storage, Decontamination and Disposal

- ❑ Spills, fires and emergency responses
- ❑ Bulk storage and handling
- ❑ Storage, disposal and reuse of dilute (left over) spray mixture

Although this information could be included under the safety section, this portion is primarily an aftermath of mixing and applying pesticides and then dealing with the proper decontamination, disposal and re-storage of the pesticides. Students should be taught proper decontamination techniques and advised of available disposal alternatives for empty pesticide containers and unused or unwanted portions of pesticides.

11. Pesticide Record Keeping

- ❑ Pesticide record keeping
- ❑ The need for records
- ❑ How to keep records
- ❑ Rotation of crops and/or pesticides

Students should be taught what information should be kept on pesticide records and should be impressed that good records can be useful in one's defense in the case of a misuse complaint or lawsuit for damages.

12. People, Pesticides and Public Relations

- ❑ Applicator responsibilities
- ❑ Community concerns
- ❑ Individual concerns

Public concerns about the use of pesticides make it imperative that pesticide applicators have an understanding of those concerns. Applicators need to know how to communicate with the public regarding their activities and to understand that they have a responsibility to do so.

13. Special Concerns

- ❑ Farm worker safety
- ❑ Right-to-know laws
- ❑ Endangered species
- ❑ Pest resistance (local problems)
- ❑ Fumigation
- ❑ Chemical/irrigation

14. Integrated Pest Management (IPM)

- ❑ Definition and philosophy
- ❑ Scouting
- ❑ Application of IPM techniques

Discuss what is IPM and what is not.

Questions or correspondence regarding this process may be directed to: 651-201-6615