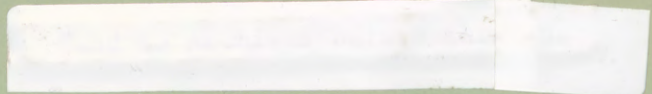


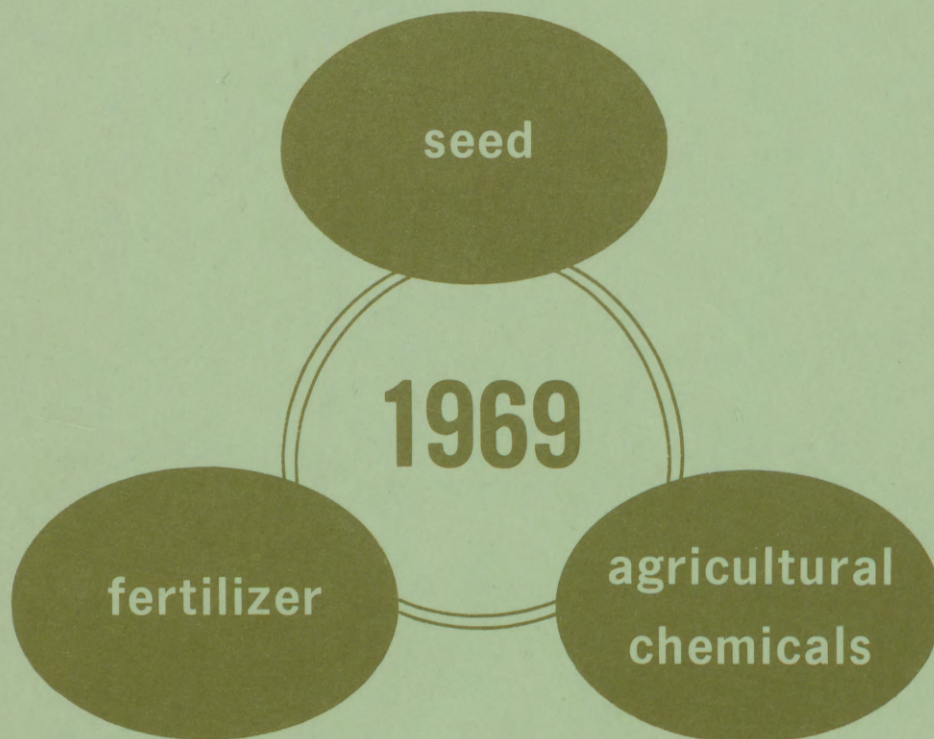
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SPECIAL REPORT 12

MINNESOTA

Retail Dealers Conference



conducted by

Minnesota Extension Specialists

in

Soils, Agronomy, Plant Pathology,

and Entomology

AGRICULTURAL EXTENSION SERVICE, UNIVERSITY of MINNESOTA

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Mention of trade names in this publication does not imply endorsement nor does failure to mention a name imply criticism by the Minnesota Agricultural Extension Service.

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DEALERS GUIDE TO INSECTICIDES

Phillip K. Harein, extension entomologist,
and L. K. Cutkomp, professor, entomology

SAFETY

Storage Life of Pesticides

As a group, the chlorinated hydrocarbons are more stable than the organophosphorus pesticides. Storage at high temperatures, high humidity, or in direct sunlight speeds up the degradation of some pesticides especially in wettable powder or dust formulations. Some pesticides, especially those in liquid concentrates should not be stored at freezing temperatures which may result in crystallization or breakdown and the resulting material may be more toxic to animals or plants, may leave a higher residue, and is apt to be much less efficient.

It is not advisable to keep unsealed packages of powdered pesticides longer than 1 year. Some pesticides in liquid form packaged in airtight containers may retain their effectiveness for several years, but it is advisable to obtain new materials after a 2-year storage period.

Keeping Records of Pesticide Usage

The pesticide usage history is often as important as the cropping history of the land. This is especially true with weed killers and certain chlorinated hydrocarbons. Good records can be a guide to future crop planning and will help to:

- Improve pest control practices and efficiency and avoid pesticide misuse.
- Compare applications made with results obtained.
- Purchase only needed amounts of pesticides.
- Reduce inventory carryover.
- Establish proper use if residue questions arise in marketing your crop.
- Establish where and when error occurred, if any mistake was made.

The information collected should include:

- Pesticide used, including the names and percent of active ingredient, type of formulation, trade name, manufacturer, and lot number.
- Crop and variety treated.
- Pest(s) treated.
- Location and number of acres treated.
- Time of day, date, and year of application.
- Amount used per acre (total as well as active ingredients).
- Stage of crop development.
- Pest situation such as severity of infestation and presence of beneficial species.
- Weather - temperature, wind, rainfall.
- Harvest date.
- Results of application.

Pesticide Combinations

Generally it is more economical to combine pesticides and make a single application. One of the major problems, however, is the application of each pesticide in the right place at the right time. Even if this can be obtained, the question of chemical compatibility is the next major problem. Some mixtures of chemicals result in reactions that cause the formation of new compounds or a separation of the pesticide from the diluent. If one of these reactions occurs, one of the following may result:

1. Effectiveness of one or both compounds may be reduced or increased.
2. Precipitation or other physical change may occur and clog screen and nozzles of application equipment.
3. Phytotoxicity.
4. Excessive residues may result since related chemicals are additive.

Because of the risk involved, combinations of pesticides and/or other agricultural chemicals should not be used unless the specific combination has proven to be effective, tested for side effects, and accepted for registrations by the U. S. Department of Agriculture.

Proper Disposal of Pesticides

With present knowledge it is suggested that excess pesticides be buried at least 18 inches deep in areas where they will not contaminate water. This disposal route is not entirely satisfactory. Based on a recent survey of the members of the Minnesota Agricultural Chemical Association, it does not appear likely that the chemical companies will accept any unused pesticide (including their own products). This leaves the problem of improving disposal techniques. In an effort to develop better methods, the USDA granted the University of Mississippi \$111,864 to study pesticide disposal. Objectives of the research follow:

1. Determine the combustion temperatures and the volatile products of selected pesticides.
2. Investigate the use of chemicals as an aid to decomposition of pesticides and containers.
3. Investigate the use of microflora for decomposition of pesticides in the soil.
4. Determine requirements for pesticide containers that are readily combustible.
5. Develop specifications for an incinerator or other device for disposal of pesticides and containers.

Winter Storage of Pesticide Sprayers

The following steps are recommended for proper winter storage of pesticide sprayers:

- Drain all material from the tank, pump, boom, and hoses.
- Fill the tank with clear water and flush through the boom.
- Repeat the second step with 1 ounce per gallon of household ammonia or trisodium phosphate added to the water.
- Disassemble nozzles. Paint screens and store screens and nozzle parts dry or emerged in a jar of fuel oil.
- Dry inside of pump and coat inside with a rustproofing material.
- Rustproof the tank if needed.
- Support the boom so it will not be damaged by other machinery or contaminated by soil or manure accumulations.
- Remove hoses and store, coiled neatly or straighten out, on a shelf.

PEST AND PESTICIDE NEWS ITEMS IN 1968

Registrations Extended

The Pesticide Regulation Division reported in September that "no residue" registration for 226 pesticides had been extended. Of these, 51 pesticide chemicals were extended on the basis of pending petitions, the rest on the basis of studies being conducted. If the studies cannot be completed in 1968-- further limited extensions will be considered. Registrations for some 87 chemicals have already been cancelled.

DDT Residues

The Food and Drug Administration has plans to lower the allowable tolerance for DDT from 7 to 1 p.p.m. after the close of the 1968 growing season. European governments disclosed similar plans. The National Agricultural Chemicals Association questioned the reduction of tolerances to any level when available residue and toxicological data indicate no health hazard involved.

Advertising Pesticides

The Federal Trade Commission has proposed a trade regulation rule in which advertisements for economic poisons must be consistent with pesticide labels registered by the USDA.

Pesticide Tolerance for Milk

Establishment of tolerances for residues of pesticides in milk is inevitable in line with FDA's switch from zero to negligible residue.

The following tolerances have been established:

DDT, DDD, DDE
0.05 p.p.m. in milk
1.25 p.p.m. in milk fat

Coumaphos
0.02 p.p.m. in milk
0.50 p.p.m. in milk fat

INSECT CONTROL RECOMMENDATIONS

Effective January 1, 1969, according to the U. S. Department of Agriculture, all registrations for pesticide products now registered for use in a manner involving food or feed on a "no residue" or "zero tolerance" basis are subject to cancellation. Exceptions may be made if a finite tolerance or an exemption from tolerance has been established by the FDA or a progress report shows that studies are being conducted to support a finite tolerance. Insecticides with a questionable registration for the use intended are marked * in the following recommendations. Any use of these pesticides which have an uncertain registration status, should be checked before applying them in 1969. Within 1 year (December 31, 1969) all pesticides should have a finite residue tolerance, be exempt, or be cancelled.

It is suggested that aldrin, dieldrin, DDT, chlordane or heptachlor not be used on dairy farms. Corn treated for soil insect control with aldrin or heptachlor should be grown for grain only and livestock should not be allowed to graze these treated fields.

Because of possible residues, wait at least 1 year before planting soybeans in soil treated for 5 consecutive years with aldrin or heptachlor. Illegal residues may result in potatoes, sugar beets, or carrots if they are planted in fields previously treated with heptachlor or aldrin.

INSECT CONTROL RECOMMENDATIONS ON FIELD CROPS FOR 1969

DO NOT USE AFTER 1969

Insect	Crop	Insecticide	Dosage	Limitations
Aphids	Small grain	malathion	1 lb. 0.6 lb. ULV [†] by air	7 days 7 days
		methyl parathion	4 oz.	No time limitations
		parathion	4 oz.	15 days
	Corn	malathion	1 lb.	5 days
		methyl parathion	4 oz.	12 days
		parathion	4 oz.	12 days
phorate (Thimet)		1 lb.	Granular applied to whorl immediately before tasseling; do not apply if used as soil application	
Armyworms	Small grain	carbaryl (Sevin)*	1 lb.	Do not apply after heads are visible
		toxaphene	2 lb.	Do not feed treated forage. No restrictions on grain.

* Status uncertain. See introductory paragraph on page 4.

[†]ULV = ultra-low volume.

DO NOT USE AFTER 1969

Insect	Crop	Insecticide	Dosage	Limitations
Armyworms	Corn	carbaryl (Sevin)	1 lb.	No time limitation
		toxaphene	2 lb.	Do not feed stalks, leaves, and husks
Bean leaf beetle	Soybeans	carbaryl (Sevin)	1 lb.	No time limitations
		toxaphene	1 1/2 lb.	21 days before feeding treated plants
Beet webworm	Sugar beets	carbaryl (Sevin)	2 lb.	14 days (tops)
		endosulfan(Thiodan)*	1 lb.	Do not feed tops
		toxaphene*	3 lb.	60 days; do not feed tops
		trichlorfon(Dylox)*	1 1/2 lb.	14 days 28 days (tops)
Corn earworm	Sweet corn	diazinon	1 1/2 lb.	2 days for forage
		carbaryl (Sevin)	1 1/2 lb.	No time limitations
Corn rootworm larvae	Corn	Bux-Ten*	3/4 lb.	Rate given for 40-inch rows; band application at planting or cultivation, except by Bux-Ten, should be used at planting time only
		diazinon	1 lb.	
		phorate(Thimet)	1 lb.	
		Dasanit	3/4 lb.	
		Dyfonate	3/4 lb.	
Corn rootworm adults	Corn	carbaryl (Sevin)	1 lb.	5 days
		malathion	1 lb. or 0.6 lb. ULV ⁺ by air	
Cutworms	Corn	aldrin*	2 lb.	Preplant broadcast disked in
		heptachlor*	2 lb.	
		chlordane	4 lb.	
		diazinon	2 lb.	Band treatment at planting time

* Status uncertain. See introductory paragraph on page 4.

⁺ULV = ultra-low volume.