As They Stand; What Changes Could Mean . . .

PESTICIDE-USE LAWS and regulations, in simply numbers, are practically unchanged from two years ago. A steady stream of amendments, however, is hitting state legislatures, calling for more joint-agency evaluations, more restrictive usage and application, and in some cases outright and across-the-board bans of a wide variety of pesticides and herbicides.

The startling aspect of the amendment onslaught is that sponsors and proponents seem to ignore, or choose to defy, the overwhelming evidence available that much of the legislation is unnecessary and some of it, according to an increasing number of scientists, could bring downright dangerous consequences.

A study of pesticide use and the impact of eliminating pesticides has just been published by the University of Nebraska. Authors are agronomist Orvin C. Burnside, Extension pesticide specialist John D. Furrer, and entomologist Robert E. Roselle.

If you ignore the possibility or probability of certain conditions developing, it's rather simple to come up with alarming projections, they suggest. Publicity to date, they charge, has been centered on the projections of the "anti-pesticide voices." The Nebraska study discounts the projections of attackers of pesticides and considers possible consequences of eliminating pesticide use altogether.

Among consequences: Crop yields would drop from 20% to 30% and food prices would rise from 50% to 75%. Production of some crops would cease. Agricultural exports would end and a migration of labor back to the farm would have to occur to produce enough food.

Millions of lives would be lost again because of disease in duplications in many parts of the world of what actually happened in Ceylon. The introduction of a DDT mosquito eradication program reduced that country's malaria cases from two million in 1950 to 17 in 1963. DDT use was then stopped, but by 1968 the malaria cases had again reached one million. The program was reinstated last year.

Benefit-Risk Equation

Of course, the elimination of pesticide use entirely is remote, the report concedes. But information of this nature needs to be known by the general public to keep the value of pesticides in perspective. What is needed, states the report, is public awareness of the "benefit-risk equation" as it relates to pesticides—an equation that has been applied to every other invention from the creative genius of man.

"Modern drugs save millions of lives, but some people have died because of them; the automobile kills and maims, but it has changed our lives generally for the better," state the Nebraskans.

"Chemical pesticides kill pests because they are toxic, and because they are toxic some are also capable, in excessive dosages, of causing illness, even death, in people and wildlife.

Perhaps the most prevalent misunderstanding, about pesticides, the report continued, is that "some people believe that if a chemical is toxic at high levels it is toxic at all levels."

The ridiculousness of this assumption is exposed in the established fact that aspirin and even common table salt is more toxic than a number of the more common insecticides, herbicides and fungicides. (Table 2).

Furthermore, the deaths attributed to aspirin far exceed the deaths caused by all pesticides combined.

People fought the addition of fluoride to drinking water, the report reminded, because of the publicized fact that fluoridure is toxic at high levels and despite the fact it is beneficial in reducing tooth decay at low levels. People brought about the ban of cyclamates because high dosages induced cancer in rats.

However, the report stated, "a human being would have to drink some 300 to 600 bottles of cyclamated beverage, depending on brand, at one time in order to equate the consumption by the rats."

Myths About DDT

The Nebraskans took special offense at the exaggerated and unfounded attacks upon DDT that, for all practical purposes, has eliminated its use. As examples:

1. That DDT and other pesticides have caused fish kills. Table 3 sets the record straight, showing that all insecticides, poisons, etc., have accounted for only 3%.

2. That as many as 100 species of animals and birds are threatened with extinction because of pesticides. Dr. D. A. Spencer, consulting ecologist of the National Agricultural Chemicals Association was quoted as noting that an estimated 99% of all species of life that have existed at one time or another are now extinct. The study charges that the critics perhaps have occasionally taken the easy way out by blaming DDT rather than studying the entire environment.

3. That DDT is building up all over the world. Francis Coon, chief of the Wisconsin Alumni Research Foundation's chemical department is quoted concerning the identification confusion with polychlorinated biphenyls. PCB produces almost an identical picture to DDT when analyzed on a gas-chromatograph, he stated. Most gas chromatographic assays, therefore, have overestimated the amount of DDT in samples.

4. That DDT is reducing bird populations. Audubon Society bird counts for 1941 and 1960, before and after widespread use of DDT, show 131, 39, 21, 11 and 12 fold increases in grackles, blackbirds, cowbirds, starlings and robins, respectively.

In 9,000 Years, Still Impossible

Perhaps the most exaggerated and unfounded claim is the widely publicized report that DDT would destroy the ocean's food supply because it affects the photosynthesis process in the phytoplankton. Concerning this preposterous fable, the report states:

"Presumably these predictions of doom for the human race are based on an article published by C. Wurtser, in Science in March, 1968, (and Weeds Trees and Turf, August, 1969), where five species of marine algae were studied. To the water in which each of these algae was grown was added 500 parts per billion of DDT in ethanol although the solubility of DDT in water is only 1.2 parts per billion.

That means the algae were exposed to DDT concentrations up to 400 times as great as would be present in an ocean saturated with DDT. At the 1.2 parts per billion DDT concentration, the algae photosynthesis was not affected, and it was only at the DDT levels far above its solubility in water that photosynthesis was depressed. This is an example of drawing conclusions from a laboratory experiment that has no relation to the natural environment.

Calculations were made on how
long it would take to saturate the oceans with DDT, making three assumptions: (1) 300 million pounds of world DDT production per year; (2) no DDT breakdown would occur; and (3) all DDT produced was purposely added to the oceans. Even then it would take more than 9,000 years to reach 1 part per billion DDT in the oceans.

"At any conceivable DDT breakdown rate and at any reasonable rate of DDT production, saturation of the oceans to 1 part per billion would be impossible."

Legislation Pending

Still the pesticide legislation floods the state houses. To name a few, bills are pending in New York (AB117), Virginia (SB56), Massachusetts (SB958 and HB345), Rhode Island (HB1014) and Oklahoma (HB1587), reports the Chemical Specialties Manufacturers Association.

The bills call for bans on use or sale of from one to eight chlorinated hydrocarbons. Punishment is called for to the extreme of $10,000 and, for five years' imprisonment (Virginia) for each offense. This punishment covers other types of contamination also.

California Bans 35

Some state officials react to the outcry against pesticides philosophically, discounting any unbearable consequences.

The State of California has banned 35 chemical pesticides from use in weed and insect control along the 15,000-mile state highway system, forcing the use of environmentally safer, though perhaps more expensive, materials.

State Public Works Director James A. Moe said the order was in keeping with the state's increasing concern over protection of the environment from permanent contamination by persistent chemicals.

Moe said less persistent chemicals will be used on the highways in the future. The state maintains some 7,000 acres of landscaping and 3,000 acres of functional roadside planting, and most chemical applications are handled by the Division of Highways.

"We're the biggest farmer in the state," explained W. H. Armstrong, one of the two landscape specialists in the Division of Highways headquarters office in Sacramento. "But I don't think we'll suffer a bit. We may have to use something which will be a little less effective, or we may have to apply it a little more frequently, or something of this sort."

Armstrong said state weed and insect control is both a matter of protecting adjacent farm and rangelands and for highway appearance and landscaping maintenance. The biggest use of weed control chemicals is to create fire guard strips in forest and rangelands, he explained.

"There will be no let down in any of these programs," Armstrong promised.

The list of banned chemicals was taken from one developed by the State Department of Agriculture. By common name, the pesticides are DDT, DDD, DDE, Paris Green, TEPP, Parathion, Methyl Parathion, EPN, OMPA, Demeton, Phosdrin, Thimet, Di-Syston, Bidrin, 2,4,5-T, MCP, 2,4-DP, Silvex, 2,4-DB, Temik, Starlacide, Avitrol 100, Avitrol 200, Azodrin, Propanil, Chloropicrin, Dieodrin, Endrin, Toxaphene, Heptachlor, Kelthane, Ovex and Thiodan.

"The state has an excellent safety record with chemical products;"
Armstrong said, "But if there's a way we can make our operation a little safer by spending a little more money, why, this may be what we have to do."

**Florida Restricts 35**

At the other end of the country, in Florida, a more sensible approach has been taken regarding pesticide use. Rather than establishing outright bans, the legislation restricts usage to those who must prove there is a need and that they know how to apply the chemical properly.

The new Florida law restricts the sale, purchase, use and possession of 35 specific pesticides.

The primary purpose of the law is to limit the use of highly toxic pesticides to commercial agriculture. It also limits the use of certain materials, including DDT, Aldrin, Endrin, Dieldrin, and Heptachlor, according to James E. Brogdon, entomologist, Florida Agricultural Extension Service.

Dealers now must have a license to sell the pesticides, and purchasers must have a permit to buy them, Brogdon points out.

Permits are available to bona fide agricultural users who must be certified as such by county agricultural Extension directors.

Pesticides restricted in all concentrations are: Aldicarb (Temik); Azodrin, Bidrin, Carbofuran (Furadan) (Except granular 10% and below), liquid hydrogen cyanide; DDD (TDE), DDT, Demeton (Sys- tox), Endrin, EPN (O-Ethyl-P-p-nitrophenyl phenylthio phosphoanathi- dionate) O-ethyl S-phenyl ethylphospho- diathioate (Dyfonate), Fensulfothion (Susanit) methyl bromide, methyl parathion, Mervinphos (Phosdrin), Parathion, Phorate (Thimet), Phosphamidon, Phosphorus (white or yellow), Propoxphos (Mocap), selenites and selenates, sodium fluoroacetate (1080), strychnine and its salts, TEPP (tetraethyl prophosphite), thallium compounds and Zinophos.

Restrictions on pesticides above certain concentrations include: Aldrin (above 10%); inorganic cyanides (5% and above) (except liquid hydrogen cyanide, which is restricted in all concentrations); Dieldrin (above 10%), Disulfoton (Di-syston) (above 2%), Guthion (above 1.1 pounds per gallon), Heptachlor (above 10%), nicotine and its salts (above 5%), Paraquat (above 0.2% cation), Toxaphene (above 10%).

Arsenic compounds: inorganic insoluble (50% and above as the compound) including calcium arsenate, lead arsenate, magnesium arsenate, paris green. Inorganic soluble: including arsenic trioxide (1 1/2% and above), sodium arsenite, (2% and above), and sodium arsenate, (5% and above).

The user of the above pesticides must state on his application what he intends to use them for.

Permit to purchase and use "restricted pesticides" may be issued for any uses recommended for the pesticide in the labeling of that pesticide, which is registered with the Florida Department of Agriculture and Consumer Services or the United States Department of Agriculture, with these limitations:

- Aldrin will be permitted only for use on pine seedlings; as seed treatments; as soil treatment for fruit trees; vegetables, turf; as soil treatment for foliage, flower, fern, and woody ornamentals; and by licensed pest control operators in accordance with federal registration.
- Arsenic Trioxide (above 1½%) and Sodium Arsenite (above 2%) will be permitted only for termite control.
- DDD (TDE) will be permitted only for use on cotton, corn, peanuts, soybeans, tomatoes, tobacco, chrysanthemums, gladiolus, and as soil treatment for vegetables.
- DDt will be permitted only for use on cabbage, corn, cotton, peanuts, sweet potatoes, public health use, and by licensed pest control operators in accordance with federal registration.
- Dieldrin will be permitted only for use on peaches, and sweet potatoes; as seed treatments; as soil treatment for fruit trees, turf; as soil treatment for flower, foliage, fern, and woody ornamentals; and by licensed pest control operators in accordance with federal registration.
- Endrin will be permitted only for use on cotton, sugar cane, cucurbit seed, and pine seed.
- Heptachlor will be permitted only as soil treatment for fruit trees, turf; as soil treatment for flower, foliage, fern, and woody ornamentals; and by licensed pest control operators in accordance with federal registration.
- Phosphorus (white or yellow) will be permitted for use as a rodenticide by licensed pest control operators and governmental agencies only, for use in commercial and industrial establishments.
- Sodium fluoroacetate (1080) will be permitted for use as a rodenticide by licensed pest control operators and governmental agencies only.
- Thallium sulfate will be permitted for use as a rodenticide and for control of insects by governmental agencies only.

For More Details Circle (117) on Reply Card
ABOUT A YEAR AGO when the noose began to tighten around DDT, one industry spokesman mused: "If there's a residue problem, the worst one will come with a ban of DDT . . . when all the people that have some on the shelf dump it down the drain."

If a pinch of sarcasm is noted perhaps it's justified. Behind every major instance of pesticide damage, there has been ample evidence that the chemical was not used according to label instructions. It would appear logical, therefore, that the least-risk method would be to use the product as recommended until it was gone.

Unfortunately, human nature prescribes quick disposal of a hot potato rather than careful handling until it cools off.

"You can't be too careful with some things," folks say, and chemicals are one of "them things." This feeling is a contributing reason for the FDA and USDA requirement that a chemical must have a 100-fold safety margin built in for the user and consumer. It's a strong building block in the sensitivity that has risen over pesticide container disposal.

Most certainly, containers should be disposed of carefully to avoid the risk of improper dosages at improper places.

Quite a bit of information is available, but research is continual. USDA bulletin 750 is helpful, however a department spokesman said new information was about ready to be released.

Disposal Methods

Disposal methods can be summed up as three: burying, chemical decontamination, and thermal degradation. Burning is regarded the safest.

G. T. Fisher, entomologist at the University of New Hampshire, published these recommendations in February:

1. Container disposal — combustible bags, fiber drums, cardboard and wooden boxes. (a) Burn at public incinerator (must be capable of 900-1200 degrees Fahrenheit) except weed killer containers. Bury these. (b) Dump with prior permission of dump supervisor. (c) Bury on a flat-level area, away from water sources, at least 18 inches deep, and cover with soil. Crush containers. (Par. c sums up recommendation for disposing of DDT).

2. Container disposal — non-combustible metal cans, drums and glass containers. To decontaminate containers (5-30-55-gal. drums) carefully wash and rinse on the outside, then decontaminate chemically by alkaline decomposition of the residual pesticide by the following steps:
   a. Drain container as completely as possible in the cleaning or burial area.
   b. Carefully add water, detergent and caustic soda according to quantities needed (see Table I).
   c. Close containers and rotate carefully to wet all inner surfaces with caustic solution. Let stand for at least 15 minutes, with occasional agitation. Prolonging the contact of the caustic solution improves decontamination.
   d. Remove all bungs and closures and drain solution into the burial pit.
   e. Rinse container inside and out and dispose of rinse in the burial pit.

   If a pesticide container is to be burned by a commercial incinerator, the operator should be instructed in the complete nature of the material contained, Fisher cautioned.

Pesticide Incineration

Research on chemical and thermal methods for disposal of pesticides has been under way at Mississippi State University for several years. A report in Residue Reviews in 1969
states that while several disposal methods have been investigated, “none has proved to be ideal procedure, although some have varying degrees of merit.”

The widely circulated recommendation of burying, for example, means the site is rendered useless for a number of other purposes “for any time in the foreseeable future.” The paper, by M. V. Kennedy, B. J. Stojanovic and F. L. Shuman, Jr., does conclude that “incineration is superior to chemical methods for the destruction of waste pesticide chemicals.”

Simple incineration, however, is not sufficient, cautions Stojanovic. Incinerators should have the capability of recirculating and reburning flue gases. Otherwise, the escaping gases “would present a definite threat from the standpoint of air pollution. Also, it would endanger humans, animals, and vegetation for some distance around the incineration site upon combustion of certain pesticides.”

The Mississippi study investigated the thermal degradation for 20 pesticide chemicals: 2,4-D (2 lb./gal. “formula 40”), Picloram (11.6% solution), Atrazine (80WP), Diuron (80WP), Trifluralin (4 lb./gal. — liquid), Bromacil (80WP), DSMA (3.2 lb. gal.) DNBP (3 lb./gal. “pre-merge”), Dicamba (4 lb./gal.), Dalapon (85WP), Paraquat (2 lb./gal.), Vernolate (6 lb./gal., liquid), 2,4,5-T (4 lb./gal.; 44.1% acid equivalent), Carbaryl (10% dust), DDT (technical flakes), Dieldrin (17.8% solution), Malathion (5 lb./gal.; 57% solution), PMA (Mersoite -88W; 95% water dispersable), Zineb (“Para- zate” -C; 78WP), and Nemagon (8.6 lb./gal.).

A differential thermal analysis was conducted in which complete combustion was determined for a reference standard for the pesticide material and also for the commercial formulation.

The study showed that “complete incineration temperatures of the reagent-grade pesticides ranged from about 250 degrees Centigrade to about 850 degrees C.; 15 of the compounds were completely combustible at 700 degrees C. or below, while five required 700 degrees and 900 degrees C.

Under similar conditions, the commercial formulations required essentially the same temperature ranges (See Table 2); dalapon, trifluralin, and nemagon required higher temperatures than the respective reagent-grade compounds. All six formulations approached complete combustion at 800 degrees C. Atrazine, carbaryl, bromacil, and dalapon contained about 10% of uncombustible residue at 1,000 degrees C., whereas DSMA and zineb yielded (Continued on Page 18)

### TABLE 1. CAUSTIC RINSE SOLUTION FOR ORGANIC PHOSPHATE CONTAINERS

<table>
<thead>
<tr>
<th>Container Size</th>
<th>Water</th>
<th>Detergent</th>
<th>Caustic Soda</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5-gallons</td>
<td>1 pint</td>
<td>1 tablespoon</td>
<td>1-2 tablespoons</td>
</tr>
<tr>
<td>5-gallons</td>
<td>2 quarts</td>
<td>2 tablespoons</td>
<td>1/2 cup</td>
</tr>
<tr>
<td>15-gallons</td>
<td>11/2 gallons</td>
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<td>1/2 pound</td>
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<tr>
<td>30-gallons</td>
<td>3 gallons</td>
<td>1/2 cup</td>
<td>1 pound</td>
</tr>
<tr>
<td>55-gallons</td>
<td>5 gallons</td>
<td>1 cup</td>
<td>2 pounds</td>
</tr>
</tbody>
</table>

### TABLE 2. Percent loss on combustion of commercial formulations of pesticides at five temperatures.

<table>
<thead>
<tr>
<th>Commercial formulation</th>
<th>Loss (%) at 600° C.</th>
<th>700° C.</th>
<th>800° C.</th>
<th>900° C.</th>
<th>1000° C.</th>
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<tbody>
<tr>
<td>Picloram</td>
<td>90.8</td>
<td>91.8</td>
<td>95.6</td>
<td>98.7</td>
<td>99.2</td>
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<tr>
<td>Atrazine</td>
<td>87.8</td>
<td>88.1</td>
<td>88.8</td>
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<tr>
<td>Nemagon</td>
<td>99.6</td>
<td>99.6</td>
<td>99.6</td>
<td>99.6</td>
<td>99.6</td>
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<tr>
<td>Trifluralin</td>
<td>99.7</td>
<td>99.8</td>
<td>99.8</td>
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<td>Malathion</td>
<td>95.3</td>
<td>96.0</td>
<td>96.3</td>
<td>96.4</td>
<td>96.7</td>
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<td>2,4,5-T</td>
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<td>99.9</td>
<td>99.9</td>
<td>99.9</td>
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<tr>
<td>Zineb</td>
<td>70.1</td>
<td>71.3</td>
<td>71.5</td>
<td>72.7</td>
<td>72.8</td>
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<td>Vernam</td>
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<td>99.6</td>
<td>99.6</td>
<td>99.6</td>
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<tr>
<td>Paraquat</td>
<td>98.3</td>
<td>98.9</td>
<td>99.9</td>
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<td>Dicamba</td>
<td>98.6</td>
<td>98.7</td>
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<td>Dieldrin</td>
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<td>99.5</td>
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<td>DDT</td>
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<td>99.3</td>
<td>99.7</td>
<td>99.9</td>
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<td>Dalapon</td>
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<td>84.3</td>
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<td>99.9</td>
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<tr>
<td>DSMA</td>
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<td>Sevin</td>
<td>88.7</td>
<td>88.8</td>
<td>88.8</td>
<td>89.1</td>
<td>89.5</td>
</tr>
</tbody>
</table>
Is grass your heaven,

More and more communities, companies, clubs and utilities are working BANVEL into their weed and brush control programs. Their evaluations of control methods show that BANVEL, either alone or in combination, produces wider, more thorough control for longer periods of time... and at lower cost.

BANVEL is not a soil sterilant. Its selective action against a broad spectrum of broadleaf weeds and brush encourages the growth of grass and establishment of sod. This helps avoid costly and unsightly erosional problems associated with unprotected soil surfaces.

This modern herbicide fits every common method of liquid application, including aerial, mist, and hydraulic. Its granular form is ideal for broadcast or spot applications, particularly where older weed brush and weed trees have become established.

BANVEL translocates through leaves, stems and roots to kill many of the most stubborn and economically significant weed and brush pests. Under certain conditions BANVEL works beautifully with other herbicides to widen control and to lower costs.

We are ready to work with you to determine exact rates and most effective and economical methods of application for your specific conditions.

Write or call collect, the regional office (listed below) most convenient to you. You will receive immediate cooperation.
## Partial list of broadleaf weeds, weed brush, weed trees controlled by BANVEL, BANVEL/combinations

<table>
<thead>
<tr>
<th>Weed Type</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ash</td>
<td>Mouse-eared Chickweed</td>
</tr>
<tr>
<td>Basswood</td>
<td>Chickweed</td>
</tr>
<tr>
<td>Cedar</td>
<td>Chickweed</td>
</tr>
<tr>
<td>Cherry</td>
<td>Chickweed</td>
</tr>
<tr>
<td>Clover</td>
<td>Common chickweed</td>
</tr>
<tr>
<td>Common</td>
<td>Curly dock</td>
</tr>
<tr>
<td>chickweed</td>
<td>Dog fennel (mayweed)</td>
</tr>
<tr>
<td>Elm</td>
<td>Elm</td>
</tr>
<tr>
<td>Hickory</td>
<td>Hickory</td>
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<td>Hornbeam</td>
<td>Hornbeam</td>
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<td>Locust</td>
<td>Locust</td>
</tr>
<tr>
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</tr>
<tr>
<td>Cottonwood</td>
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<tr>
<td>Stinging nettle</td>
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<tr>
<td>Knawel</td>
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<td>Tansy ragwort</td>
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<td>Puslane</td>
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<tr>
<td>Sunflower</td>
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<td>Careless weed</td>
<td>Careless weed</td>
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</table>

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**Velsicol Regional Offices**

**Midwest Region**, 341 East Ohio St., Chicago, Illinois 60611, (312) 467-5700, Ext. 235, TWX 910-221-5032, VELSICORP—Chicago

**Northeastern Region**, 341 East Ohio St., Chicago, Illinois 60611, (312) 467-5700, Ext. 323, TWX 910-221-3199, VELSICORP—Chicago

**Southern Region**, 3701 Kirby Bldg., Suite 1286, Houston, Texas 77006, (713) JA-4-2906, TWX 910-881-3709, VELSICORP—HOUSTON

**Southeastern Region**, Scott Hudgens Bldg., Suite 279, P. O. Box 20909, Atlanta, Georgia 30320, (404) 762-1457, TWX 810-751-8538, VELSICORP—ATLANTA

**Western Region**, 8936 S. Sepulveda Blvd., Los Angeles, California 90045, (213) 641-8066, TWX 910-328-7231, VELSICORP—LOS ANGELES.

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**Velsicol O Banvel**

Velsicol Chemical Corporation, 341 E. Ohio St. Chicago, Illinois 60611

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For More Details Circle (132) on Reply Card
Pesticide Container Disposal

(Continued from Page 15)

19% and 23% ash, respectively, at 1,000 degrees C. Tomjanovic said, to determine how the most efficient incinerator can be constructed.

Drum Reconditioning

In view of the research data showing that burning is the best method to dispose of waste pesticides, the National Agricultural Chemicals Association has conducted a survey of members of the National Barrel and Drum Association who have burning equipment. (Table 3).

Large pesticide users stand to gain two benefits by choosing the burning method of disposal: getting rid of their containers and being reimbursed, to a small extent, for the cost of the container. Drum reconditioning firms pay from 50 cents to $2.00 for metal drums, depending on size (30 or 55 gal.) and condition.

These firms clean the drums thermally and/or chemically, strip them to bare metal (by blasting them with steel particles for example), reshape, repaint and then sell them for the same or different use.

Manufacturers selling products in drums can realize considerable saving by utilizing reconditioned drums. The practice is common in the petroleum industry.
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Chemical Maintenance, Inc., of Shreveport sprayed Daconate. The blackened seed heads and fallen stems indicate weed kill.

Report from Chemical Maintenance, Inc.

**Weeds Are Losing The Ditchbanks In Louisiana War**

Before the attack, waist-high Johnsongrass lined both sides of Bayou Pierre.

It may not be as bad as the Amazon basin jungle, but in steamy Louisiana it wouldn’t take long for weeds and undergrowth to take over just as soon as man’s bulldozer leaves. For those whose job is building ditches, levees, industrial plants, rights-of-way, etc., that fact is a headache that just won’t quit.

For Jim McCoy and Max Edwards, operators of Chemical Maintenance, Inc., Shreveport, the fact that weeds grow like weeds in Louisiana is money in the bank. Their firm is the Excedrin for the builder’s headache.

Chemical Maintenance, Inc., is basically in the business of industrial and right-of-way vegetation control. McCoy has been in the business for five years and Edwards for nine. Their work includes cleaning up weeds and underbrush around industrial plants, in ditches, along pipelines, highways, bayous, and just about anywhere that man wants to get rid of unwanted vegetation. In an area where just about every parish, or county, has miles and miles of drainage ditches and bayous to keep cropland and even cities above water level, this job can be considerable.

“We do go around to industrial plants, inquire as to their weed control problems, try to point out needs and recommend programs, but the majority of our work—probably 65%—is in ditch and riverbank under-