

Proper Spray Application Best Answer to Resistance

Talks given before this year's Oregon Horticultural Society meeting in Corvallis on insects' spray resistance seem appropriate for printing this week on the farm page because of the pesticide applicators' course sponsored by the extension service Monday.

Speakers at this year's Oregon Horticultural Society meeting in Corvallis emphasized there is no single answer to insects' resistance to some chemical controls.

Above all, the insecticide must be applied correctly, at the right time and the correct

method of application used, three representatives of chemical companies said.

Speakers on resistance were J. J. Skelsey, Niagara Chemical division, Donald F. Dye, Stauffer Chemical company, and Richard Williams, of Chemagro Corporation.

"One thing is certain—the pests will not die if the spray does not contact them," Skelsey said. "Proper coverage of the tree with the spray will go far toward achieving maximum control."

Skelsey urged orchardists to examine sprayers for proper operation. Any one stand-

ard arrangement of nozzles pressure and sprays volume will not apply for all orchards or all varieties and sizes of trees, he said.

Must Help

"We growers will have to do our share in retarding this development of resistance. We cannot leave it up to the colleges, chemical companies, and our county agents to do everything. If we understand the problems involved, and assume a positive attitude in trying to do our part in applying the chemicals in the best possible manner, then I am sure we as a group will have done everything within our power to preserve the effectiveness of our pesticide chemicals," he concluded.

"Even though we are faced with resistance to insecticides they are our main defense against insect pests," Stauffer's Dye said. "In addition to insecticides, work is being conducted in other areas of insect control. Some entomologists are working with naturally occurring parasites, predators and biological agents for the control of insect pests. When used in conjunction with a carefully selected insecticide this coordinated control program has been successful."

Natural Enemies

The use of natural enemies alone has never been completely satisfactory by our present standards, Dye said. Coordinated control, however, is worthy of more attention.

Suspected resistance can be determined by conducting laboratory tests on the insect in question, Dye said. The suspected insect population can be compared with a population that is known to be susceptible and the degree of resistance determined. Standardized testing techniques in a recently published paper will make it possible to detect resistance populations although non-resistant species of insect are not available for a comparative test, he added.

Study results on alternating insecticides have not been encouraging. Insects developed resistance to both insecticides as rapidly as to a single insecticide, Dye said.

Some entomologists are working with naturally occurring parasites, predators and biological agents for control of insect pests. When used with a carefully selected insecticide this coordinated control program has been successful, Dye noted.

"The use of natural enemies alone has never been completely satisfactory by our present standards," he added.

Some workers recently found they are able to disturb or alter certain physiological processes which will prevent development or interfere with the normal life cycle and cause insects to die. This has not yet been proven in the field, however.

Irradiation has been effective in some cases. The screw worm in Florida was eradicated by this process, Dye said. Male flies were released which had been made sterile by irradiation.

Plants resistant to insect damage are being developed, also. Evidence indicates plants can be bred which insects would find undesirable.

Insecticides Needed

"Most of the control measures that have been developed require use of insecticides to some extent," Dye said. "Insecticides are being sought that will have increased activity against resistant insects. Perhaps these might even be more effective against the resistant insects than the non-resistant. This would have the effect of reversing resistance and rendering the insects susceptible again to the 'old' insecticides."

Williams, of Chemagro, noted that — "It has often times been said of our industry that it is unique with respect to our being guilty until proven innocent. All of our problems are interwoven; resistance, registration of products, correct methods of application — all these have tended to bind our professions together to the point where closer cooperation between industry and state and federal agencies exist."

Williams noted that the industry was somewhat shaken with all the legislation at first. This could account for the lag in developing new products, but the industry is now making up for lost time, he said.

Cost of registering a chemical prior to the Miller bill was approximately \$50,000. A very conservative estimate now for registering a chemical is at least \$250,000, and a cost of \$1 and \$2 million dollars are common for some products. This also increases the cost to the grower, Williams said.

Skelsey noted that development of more chemical sprays because of resistance to old ones raises the cost of such chemicals to the orchardist.

◆ Chit Chat ◆

By JOE COWLEY
Mail Tribune Farm Editor

Well, the general press has finally discovered the Common Market just as it discovered, or rediscovered Asia at the beginning of Korea and the brush fire wars in southeast Asia.

It's not unusual now to see lengthy feature articles on the Common Market in the large metropolitan papers. Reading such papers three months ago you would have thought there never was such a thing.

Few state farm meetings now fail to mention the European Common Market. This includes fruit growers, cattlemen, and wheat growers.

Kansans are pushing the U. S. toward closer trade ties with the Common Market. The state's Republican Gov. John Anderson Jr. said as early as August that his wheat state needs European markets for distribution of agricultural surpluses. Former GOP Presidential Nominee Alfred M. Landon is also one of Kansas' political leaders who were backing the president's trade expansion legislation, now law.

Britain, under political pressure from the Labor Party and with the French opposing entrance of British Commonwealth nations, now is not quite so eager to join ECM. But, Britain cannot postpone its decision on the Common Market any longer. The big question still remains. Will France ease its policy restrictions? British representatives are now participating in an important series of preliminary discussions on English entrance to ECM today through Friday. The ECM ministers start their series of decisive meetings Monday.

Meanwhile France has been found guilty at a recent Council on General Trade and Tariffs Agreements of violating its GATT agreements in its restrictions on U. S. goods entering France; particularly fruit. Pacific Coast fruit shippers are impatiently awaiting action by the state department on some form of retaliation to make France face up to the facts of free trade.

Although the Common Market has been pictured repeatedly as the advancing bulwark of western Democracy, the Commonwealth contains half of the free world's people and cannot be ignored in the tight orbit of the ECM led by France. The Commonwealth would be asked to give up specific trade advantages they enjoy with Britain in exchange for indefinite gains in the future. Also standing on the rim peering uncertainly in are the new independent African states which seem resolved to refuse association with Europe. And, uncertainty is like an open door to Communism as India learned.

One of the British Commonwealth is Canada, the largest single foreign market for the United States. Canada, too, is uncertain. The Progressive Conservative government of Prime Minister John G. Diefenbaker has always believed Britain's entry into the Common Market would be dangerous to Canada. However, after losing its parliamentary majority, the Progressive Conservatives have modified this stand. It's Britain's decision, Diefenbaker has said.

New Zealand depends on export of livestock products for its existence, not merely a profitable living. New Zealand would support British entry if such vital interests are protected.

The trade-expansion law gives the president power to negotiate tariffs downward, helps possible British entry and acts as a spearhead for those countries hovering on the outskirts of ECM.

It's interesting to draw a parallel with the Common Market development. Relation between British Prime Minister Harold Macmillan and French President de Gaulle is the key to further strengthening of the European Economic Community just as the relations between the late President Roosevelt and Russia's Stalin were the key to reinforcing allied effort in World War II.

Macmillan earlier proposed six points which he felt would meet the Commonwealth interests: (1) worldwide measures to expand manufacturers' trade, world-wide measure to strengthen trade in foodstuffs including a price policy for Europe which would discourage self-sufficiency, association for African and Caribbean countries wanting it or special trade arrangements, new trade agreements for Asian countries aimed at increasing their foreign currency receipts, special privileges for New Zealand, an enlarged Europe to include Denmark, Norway and the Republic of Ireland and as economic associates Sweden, Switzerland, Austria and Portugal.

Now seven South American countries have set up a Latin American Free Trade Association to promote free trade among member countries, not necessarily to erect a tariff wall against outside countries. This may help to stimulate the greatly needed industrialization of Latin America countries.

Current news illustrates the tightening of ties between Conrad Adenauer's Western Germany and France. It would seem natural therefore for Adenauer to stress disadvantages to Germany of British entry into the ECM. He has stated strongly that British entry would have an undesirable effect on German coal, textiles and agriculture.

And de Gaulle is busy establishing France as a fourth empire. The de Gaulle election victory didn't help any. Farm price policy is the remaining hurdle to be cleared for British entry and de Gaulle seems unwilling to lower the bars. France seems intent on excluding the grains and meats of the United States, Canada, Australia and New Zealand. This is of concern to the American farmer since trade, like a stream, seeks new channels. What cannot be sold abroad in Europe must be sold to the U.S. Secretary of Agriculture Orville L. Freeman stated earlier such terms would also mean a trade war between the ECM and the U.S.

One of the new channels of trade being sought by the Commonwealth is between Australia and Japan. The Australian government knows it must secure new markets in Asia and North America to offset any bad effects of the possible British entry into the ECM. It has developed a million dollar dairy products market in Burma, for instance. A new shipping line has been opened to ship meat directly from Australian eastern ports to the U.S. East Coast markets.

And Japan is pushing for trade. It is expected this year to strengthen ties with the ECM. Japan is even willing to allow comparatively high trade barriers to remain against some of its trade goods. So Japan also has an interest in the Common Market. Perhaps a strong one. It, like Turkey, is a rampart against further spread of Communism, so what affects its trade relations should be of vital concern to the U.S.

Sweden, Ireland and Spain are all feeling the effects of the Common Market. Swedish reaction to the Common Market is important to the Rogue Valley since a substantial amount of fruit is shipped to Sweden every year and this year's shipment of all Pacific Coast fruit to Scandinavian countries has increased substantially. Denmark and Norway have applied for EEC membership. And Sweden is seeking closer ties.

Ireland has applied, also, for EEC entry. The Irish prime minister has proposed starting tariff reductions even before the entry. A survey was scheduled earlier this year to determine European demand for Irish foodstuffs.

Generalissimo Francisco Franco is relaxing his stern rule over his country so Spain may find its place in the EEC. One minister opposing the entry has been removed.

Farm & Garden

Safe Application Featured in Talks

Like it or not the Food and Drug Administration has established certain tolerance levels for chemical residues on crops and these must be followed, R. W. Every, OSU extension entomologist, told the large group of farmers, orchardists and spray applicators yesterday afternoon in the extension service auditorium here.

The general public is misinformed on multiple residue tolerance levels set by FDA, Every said. The residue from each individual spray chemical or dust may be under the individual tolerance levels set, but the percentages when added up may exceed the tolerance level.

For instance, DDT residue on a crop may be 43 per cent of the safe level, Kelthane 40 per cent and Tordon 40 per cent. However, added up the total level is 123 per cent, or 23 per cent over the residue tolerance limit set by FDA, the entomologist illustrated.

Different Tolerances

Every noted, also, that the various spray or dust chemicals have different tolerance levels in comparing the amount which can be eaten in food and the amount which can be absorbed through the skin (as by spray or dust applicators).

Spray applicators should consider the dermal or skin absorption rating when about to apply certain chemicals and protect themselves accordingly, Every pointed out.

The Public Health Service conducted studies to find out what the safe absorption rate is, Every noted. Average individuals get 184 micrograms of these chemicals per person per day in their food, the PHS noted. The greatest amount of absorption found was 667 parts per million and this was a man who handled DDT, it was noted. He showed no adverse effects.

Uranalysis is easier to make to determine what the safe tolerances should be so more positive information on safe chemical absorption should be forthcoming, Every said. Organic phosphates break down easily and build up a load in the human system, Every noted.

Drift Problem

Pesticide drift is another problem. Beef and dairy cattle feeding in pasture adjacent to a sprayed or dusted orchard may consume some chemicals blown onto their grass. Beef tolerance is seven parts per million, but there is none in milk, Every said.

"Be very, very careful of new materials," Every warned. "New techniques for measuring chemical residues are very, very sensitive. So, more attention to residues is coming from the FDA."

Don Berry, Jackson county extension agent warned the audience to be careful of what containers they put chemicals in and how they disposed of used containers.

J. D. Patterson, of the state department of agriculture, said the responsibility for safe application of chemicals rests on the grower and cannot be transferred to the spray applicator.

Dr. A. Erin Merkel, Jackson county public health officer, described the symptoms of sickness from various groups of chemicals. He urged all growers and applicators to know the symptoms, the antidotes, to read the labels on the package or can of chemicals and to follow instructions in applying it.

Applicators should wear protective rubber or plastic clothing, the proper respirator, goggles and rubber boots when applying it. They should be just as careful when mixing, dumping it in the spray rigs and in pouring it out, Dr. Merkel warned.

He urged all applicators to take a cholinesterase level test before and after applying chemicals or between chemical applications. This establishes the normal cholinesterase level in the blood, when the level goes below normal then the applicator must stop spraying. This test is given by the local public health

office in the court house and the blood sample sent to the Salem laboratory for examination.

FROM THE GROUND UP

By BART BARTLETT

Recently there was an article published that should be of some interest to many persons. The subject of this article was the training of animals to do certain tasks in industrial plants.

This means that in some instances industry will have a choice among three means of getting some jobs done. A selection can be made and already is being made based on the economics of the particular job to be accomplished. The methods to be chosen from are human labor, automation, or animal labor.

The animals used to date have been pigeons, chimpanzees and dogs. Perhaps porpoises and even seals may be easily trained to do many useful tasks. Pigeons have done such precise work as inspect transistors and capsules or pills on production lines. It is reported that in this instance the pigeon inspector is superior to a machine as it can detect off sizes, colors or broken and dented pills and capsules. It would require a separate machine to detect each of these errors if machines were used for the job. It is felt by the scientists who are working with the animals that chimpanzees could be taught to pick fruit and harvest many other farm crops.

Problems Seen

All such advances as the training of animals to take part in our productive labor force will no doubt take place rather slowly with certain exceptions such as for very specialized tasks. The impact on industry and the human labor force will be both good and bad. As in the case of automation human labor may be replaced. This in turn creates the problem of unemployment. The politicians will get into the act and in an effort to make government be all things to all people will turn the simple problem into one of uncontrolled chaos.

The simple economics of many tasks demand a cheaper method than the use of human labor. Farmers cannot keep paying higher and higher labor and tax bills and at the same time keep selling their product for prices that were adequate 15 years ago.

Deer Controversy

It seems we are in the midst of another fine controversy regarding deer. Certain groups maintain that the deer herds are practically gone due to the fact that there has been a doe season.

The game commission and others contend that the doe season is necessary in order to keep the deer population from getting too large for the range.

Many farmers in this area know that there are lots of deer from actual observations of the large herds that invade orchards and range land during late summer.

This can, of course, mean one of two things. Either there are larger numbers of deer during recent years or those that do exist are forced off their natural ranges to find food. If the latter case is true the ranges must be too heavily populated for the maintenance of healthy deer herds. Whatever the cause of deer forays onto agricultural crop lands, the farmers are often forced to take expensive measures to reduce the damage deer can cause to economic crops.



ATTRACTIVE FAIR GROUNDS—The top picture shows the attractive fair grounds of the Siskiyou County fair near Yreka, Calif. The picture was taken looking down past the buildings. The second picture shows an all-purpose building which can house meetings and exhibits. A group of people interested in promoting an open fair and better fair grounds for Jackson county will be continuing their meetings soon at the Southern Oregon Production Credit association office in Medford.

Better Times Seen For Oregon Sheep

Sheepmen who survived the recent low price years face relatively better times, at least until supplies build up again, according to OSU Agricultural Economist Stephen Marks.

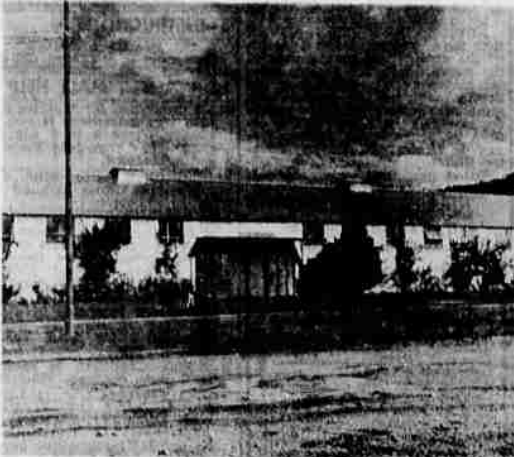
Lamb prices in 1963 should average higher than in 1962, he said.

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Flock Liquidations

Flock liquidations in 1960, 1961 and 1962 have reduced the number of sheep and lambs to a point where the Jan. 1, 1963 inventory may show the smallest number since 1950. However, with price improvement, no further large scale liquidation is in prospect, but no large increase in holding ewe lambs for flock expansion is in prospect either.

Wool prices in 1963 probably will average about the



crop will be even smaller than in 1962. Lamb prices during the early part of 1963 will average much higher than a year earlier, with summer and fall prices likely to hold above the same seasons the past year, he predicts.

Wool prices in 1963 probably will average about the same as in 1962. Domestic stocks are down and a smaller crop of shorn wool is in prospect due to the reduction of sheep numbers, but prospects are for continued strong competition from lower-priced man-made fibers and from larger imports of woolen fabrics.

980 Cattle Sold At Midway Yard In Friday Event

A total of 980 cattle were sold on a very active market at Midway Auction yard. Steer calves sold from \$28 to \$30.50 per hundredweight. Good heifer calves brought \$25 to \$27.50. Yearling steers at 500 to 700 pounds sold for \$25 to \$27.50. Feeder steers weighing 800 to 950 pounds sold at \$23 to \$24.50.

Yearling heifers sold from \$23 to \$24. A pen of 67 head of 670 pound heifers brought \$24. Holstein steer calves brought \$22 to \$24.50. Yearling Holstein steers weighing 550 to 650 pounds sold for \$21.50 to \$22.70. Holstein steers at 800 to 900 pounds went out at \$20 to \$21.70.

Lots of Cows, Calves

"There were lots of cows and calves in the sale," Owner-Manager Bill Bray said. "Good young pairs sold from \$220 to \$245. Some pens of thin cows with calves sold from \$195 to \$212.50 per pair. A pen of 23 Angus Spring cows sold for \$211 per head and a pen of 10 Angus heifers went out at \$190."

The registered Angus cows went from \$220 to \$300 per head.

Slaughter bulls brought \$20 to \$21.90.

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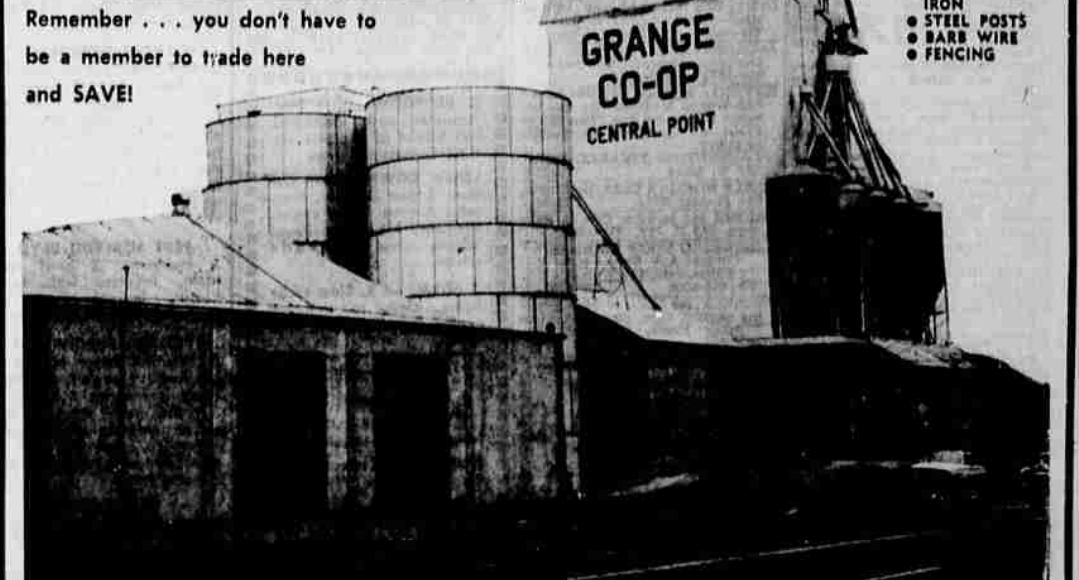
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