REPORT OF THE
DEPARTMENT OF AGRICULTURE
AND CONSUMER SERVICES ON

Farmers Clean Day in Virginia

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

HOUSE DOCUMENT NO. 36

COMMONWEALTH OF VIRGINIA
RICHMOND
1991

HOUSE JOINT RESOLUTION NUMBER 151
FARMERS CLEAN DAY IN VIRGINIA

EXECUTIVE SUMMARY

The 1990 session of the Virginia General Assembly passed a resolution directing the Virginia Department of Agriculture and Consumer Services to study the progress of the proposed Farmers Clean Day in Virginia in the collection and safe disposal of outdated and surplus pesticides.

A Farmers Clean Day pilot project was developed and implemented in three Virginia counties, Clarke, Frederick and Northumberland, in June, 1990. The pilot project was a cooperative effort of the Virginia Department of Agriculture and Consumer Services (VDACS), Virginia Polytechnic Institute and State University Cooperative Extension Service (CES), Virginia Department of Waste Management (DWM), Division of Consolidated Laboratory Services (DCLS) and local government.

A total of 31,797 pounds of agricultural pesticides was collected for disposal from 69 agricultural producers in the three counties. The direct cost of collecting, packing, transporting and disposing the material was $158,977. This amount represents only the direct costs paid to the contractor for packing, transport and ultimate disposal of the wastes. It does not include VDACS staff, CES, or DCLS costs.

The pilot project clearly demonstrated that given adequate funding, personnel resources and the cooperation of several state agencies and local government, a pesticide disposal program can be safely carried out in the Commonwealth of Virginia.

RECOMMENDATIONS:

-- A statewide inventory of pesticide wastes to determine the amounts, types and locations of outdated, banned and surplus pesticides in the state should be conducted. (VDACS has funded a research proposal to complete this task.)

-- A phased 3 to 4 year program for the disposal of pesticide wastes statewide should be implemented beginning in 1991.

-- VDACS should seek alternative sources of funding and consider all funding options to support future pesticide disposal efforts in the Commonwealth.

Introduction:

Pesticides have made a significant contribution to modern society enabling the American farmer to increase his productivity substantially. Some estimates indicate that worldwide food production could drop by as much as 40 percent without agricultural chemicals.

Pesticides cause concern because, by their very nature, they are toxic materials which are purposely released into the environment. Pesticides are meant to cause death to a target organism. The toxicity of pesticides vary, but most, if not all, can cause considerable environmental damage if misapplied, mishandled or disposed of improperly.

In July 1988, the Council on the Environment (COE) began a comprehensive review of pesticide management in Virginia. Their report, Pesticide Management in Virginia, was issued in January 1989. The report covered all areas of pesticide management in Virginia, one of which was the disposal of pesticides. It stated:

> " Properly and legally disposing of concentrated pesticide product wastes which are classified as hazardous or acute hazardous wastes,...., poses financial problems for small farming operations. ...These economic factors have led many persons to store old or unused pesticide products for long periods of time or dispose of them illegally."

The Council recommended that a study be conducted to determine the most effective type of pesticide disposal program for Virginia.

In 1989, the Virginia Farm Bureau conducted a limited survey in the Northern Neck region of Virginia to determine the amount of pesticides stored by agricultural producers. Their survey revealed that many agricultural producers in the surveyed area were storing agricultural pesticides that were either banned or unusable.

The Pesticide Control Board (PCB), authorized by the Virginia Pesticide Control Act of 1989, recognized the need for an agricultural pesticide disposal program. The Board agreed that the storage of unusable and banned pesticides represented a serious hazard to the environment. It was felt by the Board that the development of a pesticide disposal program would provide essential assistance to the Virginia agriculture producers and at the same time protect Virginia environment, thus benefitting all citizens of the Commonwealth. The PCB made the implementation of a pesticide disposal program a top priority for the 1989-1990 Fiscal Year.

A statewide pesticide disposal program had not been previously attempted in Virginia. Since the scope and cost of a pesticide disposal program was unknown, it was determined that such a program should be developed and implemented in 4 phases:

Phase I - Implement Pilot Pesticide Disposal Project in 3 localities

Phase II - Survey pesticide end users

Phase III - Develop Regional Pesticide Disposal Program

Phase IV - Implement Statewide Pesticide Disposal Program

Phase I would provide data on the logistics and cost of implementing a pesticide disposal program. Phase II would provide data on the amount of unwanted, outdated and banned pesticide material currently being stored by agricultural producers. Phase III would expand the program to a regional area leading to Phase IV, a statewide pesticide disposal program.

Phase I (Pilot Project):

VDACS began by contacting other states and Virginia counties which had conducted hazardous waste disposal programs. The hazardous wastes disposal programs of North Carolina, Florida, California and Massachusetts were reviewed. In addition, the household hazardous waste disposal programs of Chesterfield and Prince William counties were reviewed and/or observed.

The initial criteria established for the pilot project were: major agricultural production area, major user of pesticides, critical area with the potential for causing environmental contamination, unique agriculture production involving high volume pesticide use, urban development, support of local officials and the General Assembly, diverse agriculture urban representations if more than one area was selected, and the availability of survey data regarding unwanted pesticides in storage. Because the urban homeowners generally have disposal options available to them for the disposal of household pesticides, the focus eventually drifted toward commercial pesticides in the agricultural community.

DWM has the regulatory authority for transporting, storage and disposal of pesticide product wastes which are determined to be "hazardous" or "acute hazardous", as defined in RCRA and other federal laws. VDACS coordinated the planning of the pilot "Clean Day" program with DWM. Because the disposal of hazardous chemicals is carefully regulated, it was necessary for DWM to grant certain concessions to VDACS, in order for the "Clean Day" pilot project to be implemented. The major DWM concession was to permit VDACS to

assume generator status for the pesticide wastes collected during the pilot project, thereby releasing the individual grower of liability and the requirement to obtain permits.

The CES survey revealed a considerable number of "unknowns" (139), pesticides which due to the deteriorated condition of the label and/or the container, were unidentifiable. All hazardous waste must be identified before a hazardous waste disposal firm will accept the materials for disposal by high temperature incineration or burial in a secure landfill, or for storage. For assistance in identifying the "unknowns", VDACS contacted DCLS which cooperated by providing the laboratory analysis and identification of these materials.

The initial surveys conducted by the county agricultural extension agents identified a total of 21,336 pounds of agricultural pesticide waste in the three pilot counties. Due to the deteriorated condition of some of the pesticide containers (broken bags, leaking containers, etc.), it was decided that the contractor would visit farms having stored pesticides to pack, manifest and transport the waste pesticides to the ultimate disposal sites. This reduced the likelihood of an accidental spill during transport of the material to a central collection site. It also ensured that the handling of pesticide concentrate and cleaning up of pesticide storage areas would be conducted by trained professionals.

Three disposal firms submitted bids in response to an invitation for bids published by VDACS on May 11, 1990. DWM advised VDACS that all three disposal firms were reputable. The contract was awarded to Laidlaw Environmental Services, Inc. (formerly GSX, Inc.), from Laurel, Maryland based on their bid price of $106,290, which was the lowest among the three firms.

The Pilot Project began on June 12, 1990 in the Clarke/Frederick county area and June 19, 1990 in the Northumberland county area. In both areas the contractor supplied two chemists per vehicle to pack, manifest and transport the pesticide waste. In addition, a VDACS pesticide investigator and the local county agricultural extension agent accompanied each truck.

Laidlaw employed 1 disposal vehicle and 3 disposal vehicles in Clarke County and Frederick County, respectively. The collection was completed on the morning of June 15, 1990. A total of 800 man-hours were expended over the 3.5 day period to complete the collection of pesticide waste due to the amount of pesticides to be disposed and the poor condition of the containers; i.e., broken bags, rusted cans, etc.

In Northumberland County, Laidlaw employed 2 vehicles. The project was completed utilizing 80 man-hours on June 19, 1990.

The total amount of agricultural pesticide waste collected was 16,992 pounds of dry materials and 1,645 gallons of liquid pesticides. Converting the gallons to pounds by applying a conversion factor of 9 pounds/gallon, the total weight collected was 31,797 pounds or over 15 tons. The average amount of pesticide waste per participant was 461 pounds. A summary of participation and the amount of agricultural pesticides collected in each county is tabulated in Attachment I.

The final cost of the contract to collect, pack, transport and dispose of the waste was $158,977--a 49% increase from the original bid amount. The increase was due to the increase in the amount of pesticide waste collected versus the amount estimated from CES surveys. In several instances, it was found that growers significantly underestimated the amount of pesticides they had available for disposal. Several growers, who had not preregistered, desired to participate once the project was initiated. Whenever their stored pesticides could be identified, they were accommodated. The average cost per participant was $2,304 and the average cost per pound of pesticide waste collected was $5.26. These cost figures provide some basis for estimating the cost of future disposal operations, provided good survey data is obtained.

The largest quantity of individual pesticides collected during the pilot project, based on weight, was DDT, both pure and in combinations with other insecticides, endrin and lead arsenate. DDT and endrin have been banned for use by the Environmental Protection Agency and lead arsenate has been severely restricted to certain limited non-food use. A representative listing of agricultural pesticides collected and the amount of each is provided in Attachment II.

Findings of Phase I (Pilot Project):

-- Given adequate funding, personnel resources and the cooperation of several state agencies, a pesticide disposal program can be safely carried out.

-- Growers who participated in the pilot project were pleased with the results.

-- An accurate inventory of pesticide waste stored statewide is critical in order to refine current estimates of the cost of conducting a statewide pesticide disposal program.

-- Locating unidentifiable pesticides in storage must be done early in the process. The availability of analytical laboratory support for the analysis of unknown pesticides is critical.

-- The rapport and trust established between the grower and the county agricultural extension agent was found to be a key element to the success of the program.

-- Some of the pesticides collected during the pilot project were currently registered products, which may still be usable materials (some of this material may have been deteriorated or contaminated). The development of a pesticide exchange program for growers would reduce the accumulation of large quantities of unwanted pesticides in the future. The establishment of such a program would require the resolution of certain liability issues.

-- The cost of disposal of unwanted agricultural pesticides on a state-wide basis will be expensive. Based upon the pilot program, it is estimated that approximately six million dollars will be required to complete the disposal effort in the Commonwealth.

Phase II (Survey):

The survey of agricultural producers prior to the "Clean Day" Pilot Project underestimated the amount of pesticides for disposal by approximately 49%. To improve our ability to estimate the costs of implementing a statewide Pesticide Disposal Program, the survey methodology must be improved.

The implementation of Phase II has begun. VDACS has funded a research proposal, Attachment III, from Dr. Michael Weaver, Chemical, Drug and Pesticide Unit, Virginia Polytechnic Institute and State University to estimate the amount and types of pesticides stored by agricultural end users who would participate in a statewide Pesticide Disposal Program. Likewise, VDACS will coordinate surveys of the pest control, lawn care and pesticide dealer communities. The results from these surveys will provide VDACS with a basis for projecting the costs of conducting a disposal program, by locality and assist in prioritizing localities for participation.

Phase III (Regional Program):

Phase III of the Pesticide Disposal Program is proposed to be implemented in five regions of Virginia which were not included in Phase I. A single locality would be selected to participate in each of the following regions:

1. Southwest
2. Southeast
3. Southside
4. West Central
5. Southern Shenandoah Valley

The localities would be selected based upon the major crops grown in the locality, quantity and types of pesticides requiring disposal, environmental hazards associated with pesticide storage and interest demonstrated by the local government. The data collected in Phase II would also be used to select participating localities. It would be most desirable to have representation from major crop areas not represented in Phase I, such as tobacco and peanut producing regions.

Phase I was limited to the agricultural community. Several members of the commercial pesticide applicator sector have expressed a desire to be included in the state's efforts to dispose of unwanted pesticides. Phase III would provide data on the extent of participation by this group, their disposal needs and the logistics for including them in a statewide Pesticide Disposal Program. It would be used to validate and refine the survey data collected in Phase II and provide additional data on the cost of implementing a statewide Pesticide Disposal Program.

The cost of implementing Phase III is estimated to be $300,000. This estimate is based on the direct costs incurred for collecting the unwanted pesticides during the "Clean Day" Pilot Project (Phase I) plus the cost for conducting the analyses for the unknown samples. VDACS is seeking additional sources of funding, both public and private, to defer the cost of implementing Phase III. VDACS is also examining a cost share formula between the Commonwealth and local government to support Phases III and IV.

Phase IV (Statewide Program):

A statewide Pesticide Disposal Program is proposed to be implemented on a regional basis.

Based on the results of Phase II, Phase III and available funding, a statewide program would be developed for implementation. The program would be developed on a regional concept with localities prioritized by need, interest and environmental hazard.

Discussion:

The "Clean Day" Pilot Project was a tremendous success. All the agricultural producers participating in the project were grateful for the chance to dispose of the unusable pesticides they were storing. Statements from participants included "a day to rejoice", "preventing an environmental disaster", and "all farmers should have the chance to participate". These sentiments were echoed by all those participating.

The amount of pesticides collected in each county in conjunction with the estimated participation in each suggests the hypothesis that counties growing fruit for the fresh market will have larger quantities of pesticides for inclusion in a disposal

program and small grain growing areas a lesser amount. This is due to the fact that fruit operations follow a rigid pesticide application program. This hypothesis may also be true, but to a lesser extent, for any grower of a fresh market agricultural commodity, including truck farm vegetables, potatoes and peanuts. If true, the Eastern Shore, Tidewater, Mid-Shenandoah Valley, and Southeastern Blue Ridge areas of Virginia would be expected to have the highest concentration of unusable agricultural pesticides. (The pilot project did not include a tobacco growing area, a major Virginia crop, which may also have a large amount of pesticides requiring disposal.) This hypothesis can only be verified by an actual survey of agricultural producers.

The importance of an accurate survey of unusable agricultural pesticides was apparent for several reasons. First, it is impossible to predict the cost of a pesticide disposal program unless one has an accurate estimate of the quantity to be disposed. The pilot project succinctly pointed out that fact with an increase in contract cost of almost 50%. This is much too great a variance when estimated costs are in the hundreds of thousands of dollars.

Secondly, the quantity of "unknown" pesticides must be determined, sampled and analyzed early in the process. Analysis of these materials is extremely time consuming and costly. An influx of a large number of these samples in a short period of time strains state laboratory resources and impacts other programs outside the pesticide area. Locating "unknown" pesticides and sampling them over an extended period of time would permit the laboratory to work them into their schedule with less disruption.

The availability of analytical laboratory support is paramount. The majority of the agricultural pesticide waste requiring laboratory analysis is the most toxic due to its age. Much of the "unknown" pesticides identified in the pilot project were formulations containing DDT compounds and lead arsenate. These are the materials which have the greatest need for collection and disposal. The positive aspects of the collection of hundreds of less toxic pesticides through a pesticide disposal program would be completely negated by a single environmental disaster caused by the release of an "unknown" which was ineligible for collection due to the lack of analysis and identification. Resources must be committed to this aspect of the program.

It took the cooperation and dedicated effort from four state agencies, VDACS, CES, DWM and DCLS, to develop and implement the pilot project. Each agency had an important role in the project and without the cooperation of each, the pilot project would not have been successful. Each agency can take pride and credit for the pilot project's success and accomplishment of assisting the agricultural community and protecting the environment. This cooperation must continue for the pilot project to expand into other areas of the Commonwealth.

The one item that impacted all other aspects in the development and implementation of the pilot project was time. The initial time frame for implementation of the pilot project was late August-early September 1990. This was a reasonable time frame for implementation based on discussions with other states conducting this type of disposal program. The inability to encumber the funds for the pilot project required every facet to be placed on the "fast track" to complete the project by June 30, 1990. The pilot project was completed in the required time frame, but not without an impact on other programs in several agencies. To achieve complete success in an agricultural pesticide disposal program, disposal of 100% of the unwanted agricultural pesticides must be the goal. This can only be accomplished if sufficient time is allocated to each phase of the program from survey through disposal.

Conclusion:

The "Clean Day" Pilot Project (Phase I) was a success from all aspects. It assisted agricultural producers with the expensive disposal of hazardous pesticide waste and protected the environment from a possible disaster of unknown proportions. The pilot project was the initial major project recommended by the Pesticide Control Board and implemented by VDACS. It was the first multi-county agricultural pesticide disposal program in the Commonwealth of Virginia.

The pilot project provided data on the storage of unwanted agricultural pesticides and the cost of disposing them. It also identified areas that need further attention by VDACS and PCB, including a statewide survey of unwanted pesticides stored by agricultural producers (Phase II), funding sources and laboratory support for analysis of unknown materials.

Recommendations:

1. A statewide inventory of pesticide wastes to determine the amounts, types and locations of outdated, banned and surplus pesticides in the state should be conducted. (VDACS has funded a research proposal to complete this task.)

2. A phased 3 to 4 year program for the disposal of pesticide wastes statewide should be implemented beginning in 1991.

3. VDACS should seek alternative sources of funding and consider all funding options to support future pesticide disposal efforts in the Commonwealth.

ATTACHMENT I. COSTS, PARTICIPATION AND QUANTITY OF AGRICULTURAL PESTICIDES COLLECTED - 1990 "CLEAN DAY" PILOT PROJECT

COUNTY	GROWERS PARTICIPATING	% OF ALL GROWERS PARTICIPATING	% OF GROWERS WITH UNWANTED PESTICIDES PARTICIPATING	QUANTITY OF UNWANTED PESTICIDES COLLECTED		QUANTITY OF UNWANTED PESTICIDES REMAINING		% PESTICIDES COLLECTED	
				POUNDS	GALLONS	POUNDS	GALLONS	DRY	LIQUID
CLARKE	14	5	82	1,614	546	5	100	99.7	82.0
FREDERICK	40	16	100	15,105	965	1,963	183	87.0	81.0
NORTHUMBERLAND	15	10	100	273	134	0	2	100.0	98.5
TOTAL	69			16,992	1,645	1,968	285		

AVERAGE COST PER PARTICIPANT: $2,304.00

AVERAGE COST PER POUND OF WASTE: $5.26

ATTACHMENT II. REPRESENTATIVE SAMPLE OF PESTICIDES COLLECTED (POUNDS)
1990 "CLEAN DAY" PILOT PROJECT

	CLARKE COUNTY	FREDERICK COUNTY	NORTHUMBERLAND COUNTY	TOTAL
DDT COMPOUNDS	103	2,800	136	3,039
ENDRIN	45	2,431	0	2,476
LEAD ARSENATE	5	2,450	2	2,457
COPPER COMPOUNDS	27	1,290	495	1,812
DORMANT OIL	1,395	63	18	1,476
CAPTAN	86	1,233	0	1,319
DINITRO COMPOUNDS	0	1,256	0	1,256
PARATHION	77	795	45	917
DDD	43	624	0	667
DIELDRIN	5	636	1	642
GLYODIN	315	320	0	635
AMMONIUM SULFATE	50	510	0	560
DIFOLATAN	0	552	0	552
MERCURY COMPOUNDS	50	484	0	534
AROMITE	0	450	0	450
SEVIN	81	225	108	414
ENIDE	0	410	0	410
SULFUR	15	384	0	399
KARATHANE	238	150	0	388
P-CHLOROBENZENE SULFONATE	0	385	0	385
FOLPET	80	270	0	350
THIRAM	85	255	0	340
STICKER SPREADER	158	104	0	262
TOXAPHENE	18	63	164	245
ZINEB	150	91	0	241
BENZENE HEXACHLORIDE	4	235	0	239
SODIUM HYDROGEN PHOSPHATE	41	192	0	233
2,4-D	137	11	83	231
FERTILIZER	50	175	0	225
KELTHANE	98	123	0	221
KOLOSPRAY	0	210	0	210
ROTENONE	72	134	0	206
2,3-DICHLORO-1,4-QUINONE	35	170	0	205
NIAGRATRAN	60	132	0	192
POLYRAM 80	80	100	0	180
HEPTACHLOR	156	0	18	174
PHYGON	0	149	0	149
METHOXYCHLOR	109	30	0	139
TRITHION	135	0	0	135
ETHION	126	0	0	126
FERBAM	10	100	1	111
ZINC PHOSPHIDE	75	35	0	110
FORMALDEHYDE	0	104	0	104
KOCIDE	0	100	0	100
OTHER	2,314	3,559	408	6,281
TOTAL	6,528	23,790	1,479	31,797

ATTACHMENT III

A Proposal to the Virginia Department of Agriculture and Consumer Services for the

Development of an information and educational program for pesticide disposal efforts in the Commonwealth of Virginia.

Virginia Polytechnic Institute and State University
College of Agriculture and Life Sciences
Virginia Cooperative Extension Service
Chemical, Drug and Pesticide Unit

M. J. Weaver, Extension Pesticide Coordinator
P. A. Hipkins, Research Associate

Purpose

The Virginia Cooperative Extension Service (VCES) has been advising clientele on pesticide disposal for many years. However, until the recent efforts of Virginia Department of Agriculture and Consumer Services (VDACS) and the Virginia Pesticide Control Board (VPCB), the Extension Service has not had adequate information to provide to most clientele when dealing with larger quantities of surplus pesticides. The choices have been few and those that have been available have either been prohibitively expensive or potentially unsafe.

The 1990 (three-county) Virginia Clean Day Pilot Program, presents a new opportunity for clientele to dispose of pest in a safe and economical manner. Unfortunately, the cost of a statewide effort could be very large. Without efforts to reduce the cost, the chances to offer a statewide clean-up program are limited. As a result, there is a great need to develop a viable means to reduce the volume of chemicals in need of disposal. Reduction of volume is one way to make future Clean Day programs more manageable and affordable.

The purpose of this pre-proposal is to assist the VDACS and the VPCB in their efforts to clean-up excess pesticide products at the end-user level throughout the Commonwealth of Virginia. This contribution to this effort would include the following:

1. Assessment of the needs associated with disposal by end-users who have possession of surplus pesticide products, and establishment of a Clean Day Coordinator Network.

2. Development of a computer-based surplus chemical exchange and inventory program to enhance the sponsor's efforts to manage pesticides involved in future Clean Day programs.

3. Development of publications and media to inform and educate the public of: the benefits of the Clean Day program; the need to reduce pesticide surplus; the need to use available methods to reduce pesticide surplus, and; the safe handling of surplus pesticides.

Objectives

This objectives of this proposal are:

1. To estimate the needs and numbers of end users who would participate in a statewide surplus pesticide disposal (Clean Day) program. To establish a network of Clean Day coordinators at the local level.

2. To develop a computer-based surplus chemical exchange and information system to allow for exchange of legally usable materials by providing a bulletin board system for use by the Clean Day Coordinator Network thus reducing the volumes and costs of disposal for a statewide surplus chemical disposal program. Information for input into the system would be sent by electronic mail through the statewide Extension computer network for input at a central location. The information would then be listed for all users of the system. An inventory system will also be developed to track unusable (waste) pesticides to provide VDACS with statistics on volume and locations of waste products.

3. To begin to change attitudes and methods of selection and storage of pesticides in order to reduce surplus pesticides from accumulating in the future.

4. To begin to change attitudes and methods of disposal in order to protect the environment and safety of Virginians and to reduce the amount of pesticides being disposed of by Virginia pesticide applicators.

Procedures

The procedures will include the following, each corresponding to the objectives presented above, respectively.

1. To estimate the needs and numbers of end users who would participate in a statewide surplus pesticide disposal (Clean Day) program. To establish a network of Clean Day coordinators at the local level.

   A survey will be developed and mailed to Extension agents requesting information on the needs of their clientele (primarily farmers) in regard to pesticide surplus disposal. The survey will assess the willingness of the Extension agent to coordinate a county Clean Day program, the numbers of county clientele who would be willing to participate, and any comments in regards to special local problems, attitudes or needs associated with the development of a Clean Day program in their county.

   Part of this effort, will be the canvasing of local Extension agents in order to secure their cooperation in a local Clean Day program. In-service training will be provided to agents on the procedures associated with the Clean Day programs. Each Clean Day Coordinator (agent) will be provided a coordinator's kit which will include an Executive Summary from the VPCB and VDACS, a jointly developed VDACS/VCES coordinator's manual and two references for their use to assist clientele in the identification of pesticides involved in the Clean Days Campaign. These will include a copy of the Farm Chemical Handbook and the EXTOXNET Pesticide Toxicological Factsheet reference. The anticipated completion date for this objective is October, 1990 for the survey and March 1991 for the Coordinator's Kit and In-Service Training.

2. To develop a computer-based surplus inventory and information system in order to reduce the costs of a statewide surplus chemical disposal program.

   A computer-based surplus chemical exchange program (SCEP) will be developed to communicate statewide the availability of surplus pesticides meeting certain criteria set by VDACS, VCES and other appropriate state agencies as non-waste pesticides. The program will be developed on the Virginia Tech mainframe computer in order to make it a multi-user system which can be monitored in every county and by the two cooperators, VDACS and VCES. Input into the system would be by each of the Clean Day Coordinators. On-going

system maintenance costs (on-line storage and CPU charges) which would occur after June 30, 1991 would have to be negotiated at a future date in order to keep the system on-line.

A second database system would be developed to track the inventory of waste pesticide products which would be available for pick-up during future Clean Day programs. The inventory system would need to be studied to determine the most feasible means to develop and maintain the system to the satisfaction of the sponsor. The two options available for developing this system would include: (1) a microcomputer based inventory system which could upload and transmit data to a central database or (2) a mainframe based inventory system with on-line input and output capabilities. This system would be developed using the Virginia Tech SPIRS database management system software. The system would be programmed to provide reports and ASCII output to the sponsor. The anticipated completion date for this objective is March 1991 with a beta (working) test version available for the sponsors by October 1990.

3. To begin to change attitudes and methods of selection and storage of pesticides in order to reduce surplus pesticides from accumulating in the future.

   VCES will work very closely with the Information and Training Supervisor in the VDACS Office of Pesticide Management to jointly develop new publications and audiovisual materials to emphasize the need to reduce pesticide surplus through proper selection methods, use of alternative pest controls, proper storage and proper handling of pesticide products. These will include two joint Extension/VDACS publications to be disseminated to the public through local extension offices and by VDACS inspectors; one on "Proper Storage and Disposal of Pesticides" and the second on "Pesticide Management on the Farm and Commercial Pesticide Business". A videotape of 15 minutes duration will also be developed to encourage proper storage, transportation, selection and disposal of pesticides by applicators. All of these products will accredit VDACS and the VPCB for their part in the production and funding of the project. The anticipated completion date of this objective would be May 1991.

4. To begin to change attitudes and methods of disposal in order to protect the environment and safety of Virginians and to reduce the amount of pesticides being disposed of by Virginia pesticide applicators.

   A joint VCES/VDACS statewide teleconference will be developed for delivery in the winter of 1990-91. The program will target all pesticide applicators with major emphasis on the farmer. The basis of instruction will be to make the participants aware of proper pesticide management methods, alternatives to chemical pest controls, methods to reduce accumulation of surplus and waste pesticides, methods to deal with surplus and waste pesticides, container disposal methods and alternatives, equipment rinse systems, and the future of Virginia's surplus pesticide management program and clean days campaigns. The program will include experts from industry, government and educational institutions. On-site video will be developed to emphasize the important points and to promote best management practices through examples set by applicators. The production will again be a joint program with the sponsors. The teleconference will be made available through local Extension office satellite downlinks, community colleges, other colleges and universities, and the local high schools. The anticipated completion date of this objective would be January 1991.

Evaluation and Reporting

Evaluation of objectives one to three will be according to results and satisfaction of the sponsors. The fourth objective will include a student evaluation which will be collected from all cooperating downlink sites and participants.

Progress reports will be developed according to the needs of the sponsor. A final report will be developed for each part of the project and sent to the sponsor upon completion.

Cooperation

The project will be conducted by the Virginia Cooperative Extension Service. Cooperation of the Virginia Agricultural Experiment Station, the Virginia Department of Agriculture and Consumer Services, and the Virginia Pesticide Control Board are all important to guarantee success of the effort. In addition, an organization of state and county-based cooperators will be solicited to assist with public relations and participation of clientele.

Budget (07/01/90 - 06/30/91)

Proposed budget items are as follows:

Expenses	MYE	VDACS	VCES *	Total
SALARIES				
Professional *(M. J. Weaver)*	.05	0	1,890	1,890
Fringe Benefits	.05 *(@27%)*	0	510	510
Professional *(P. A. Hipkins)*	.20	5,106	0	5,106
Fringe Benefits	.20 *(@27%)*	1,379	0	1,379
Clerical	.10	2,039	0	2,039
Fringe Benefits	.10 *(@33%)*	673	0	673
Paraprofessional				
Computer Programmer	.25	5,761	0	5,761
Fringe Benefits	.25 (@33%)	1,901	0	1,901
TRAVEL (on-site video, speakers, project coordination)		5,000	0	5,000
CONTRACTUAL SERVICES				
Video Production (videotaping, editing)		9,000	0	9,000
Teleconferencing Production		6,000	0	6,000
SUPPLIES (videotapes, paper, ADP supplies)		3,000	0	3,000
REFERENCE MATERIALS (references for agents)		9,000	0	9,000
PRINTING (publications, documentation)		7,000	0	7,000
OTHER (ADP, communications, postage)		4,000	0	4,000
TOTAL		$59,859	$2,400 *	$62,259

* Anticipated support by the University - not auditable cost sharing.

GENERAL ASSEMBLY OF VIRGINIA--1990 SESSION

HOUSE JOINT RESOLUTION NO. 151

Requesting the Department of Agriculture and Consumer Services to study the progress of the proposed Farmers Clean Day in Virginia in the collection and safe disposal of outdated and surplus pesticides.

Agreed to by the House of Delegates, March 9, 1990
Agreed to by the Senate, March 7, 1990

WHEREAS, the Commonwealth of Virginia is committed to protecting the health and welfare of Virginians as well as safeguarding the environment; and

WHEREAS, the Commonwealth of Virginia is also dedicated to promoting the agriculture industry and encouraging farmers in their endeavors; and

WHEREAS, the agriculture industry has used chemicals and pesticides to produce crops free of disease and insects; and

WHEREAS, many farmers in the Commonwealth possess outdated, banned and surplus chemicals which need safe and legal disposal; and

WHEREAS, there exists a need to facilitate a means for such disposal; and

WHEREAS, the Department of Agriculture and Consumer Services, in conjunction with the Board of Pesticides, is planning a Farmers Clean Day in Virginia to demonstrate to farmers how to safely collect and dispose of outdated and surplus pesticides; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, That the Department of Agriculture and Consumer Services is requested to study the progress of the proposed Farmers Clean Day in Virginia in the collection and safe disposal of outdated and surplus pesticides. The Department of Waste Management shall provide assistance as needed.

The Department of Agriculture and Consumer Services shall complete its work in time to submit its findings and recommendations to the Governor and the 1991 Session of the General Assembly pursuant to the procedures of the Division of Legislative Automated Systems for the processing of legislative documents.