

Edward A. L. Greer

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SOUTHERN WEED SCIENCE SOCIETY

History and Program

The Southern Weed Conference was organized in June, 1948, at the Delta Branch Experiment Station, Stoneville, Mississippi, when the Southern Experiment Station Directors sponsored a meeting to formally consider regionally significant weed control problems. Seventy-three charter members from 11 southern states, 4 northern states and Puerto Rico represented universities and experiment stations; state plant boards; the U. S. Department of Agriculture and agricultural chemical, equipment, and supply companies. Fourteen reports presented at that 1 1/2 day meeting totalled some 40 pages in the mimeographed proceedings.

The current name of our Society was adopted in 1969 after it had developed into a strong regional organization which brought together those persons directly interested in weed science research, education, extension, regulation, manufacturing, and merchandising within the Society's area - the 13 southcentral and southeastern states and Puerto Rico. The primary purpose of the Society is to exchange ideas, experiences, and information related to weed science and to discuss and plan means of securing more adequate weed control through correlated and coordinated effort in weed research and control by Federal, State, and local public or private agencies.

The objectives of the Society are accomplished through annual meetings with formal presentation of pertinent weed science papers, publication of an annual Proceedings, and compilation of an annual Research Report. Approximately 800 persons registered at the most recent two and one-half day annual meeting. A strong graduate student participation program at the annual meetings has fostered weed science by encouraging, recognizing, and rewarding student research efforts. The Proceedings of the annual meeting are published and enjoy worldwide distribution, use, and citation. Two hundred and four papers authored by some 256 weed scientists require about 570 pages in the recent Proceedings. Prior to the annual meeting, the Society distributes a Research Report which summarizes current data on recommended, promising, and new chemicals and experimental practices reported by southern weed science research contributors. This annual volume of about 200 pages enjoys as widespread distribution and usage as the Proceedings.

A phased, elected Executive committee, capable and energetic volunteer committees, and an active membership have built a robust society well-prepared for the challenges of the "next 25 years."

J. R. Orsenigo

HISTORY OF THE SOUTHERN WEED SCIENCE SOCIETY

Donald E. Davis

Alumni Professor, Department of Botany and Microbiology
Auburn University Agricultural Experiment Station
Auburn, Alabama 36830

In June, 1948, 73 persons interested in weed control met at the Delta Branch Experiment Station in Stoneville, Mississippi, and organized the Southern Weed Conference. The purposes of the Conference were given in the Preamble to the Constitution.

"The Conference is established to bring together those persons from any state, area, institution or agency, who are directly interested in weed control within the conference area through research, education, regulation, manufacturing or merchandizing..... The primary purpose of the conference is to exchange ideas, experiences, opinions, and information, and discuss and plan means of securing more adequate weed control through more and better correlated and coordinated effort on weed research and control by Federal, State, and local public or private agencies."

Thus, the first constitution made it clear that the Conference would include all persons interested in weed control in the South regardless of the cause of their interest. On this strong foundation has developed an active organization with nearly 1,000 members. Tables 1, 2, and 3 and Figures 1 and 2 give for each year; the officers, meeting site, number of papers presented, number of pages in the Proceedings and in the Research Report, number of sustaining members and the cash assets.

In the time allotted to me, I will tell you about how the Conference has developed and try to show how this development was influenced by the men involved, by the growth of the discipline of Weed Science, and by other historical events. I am indebted to many of the past-presidents for some of the anecdotes that are included in this presentation but I accept full responsibility for any statements that deviate from the facts, as you remember them. I regret that my thumb nail sketches of the leaders of the Southern Weed Conference (SWC) will not include all of them. Time will not permit reference to all of these men and some I did not know either because they were before my time or because they were associated with organizations or aspects of Weed Science with which I am not familiar.

Many of the people that attended the first meetings of the Southern Weed Conference have played a major role in the development of Weed Science. Names of those attending the first meeting with which you will be familiar are; C. A. Brown, first president of the SWC; G. C. Klingman, president of SWC and the Weed Society of America (WSA); W. B. Albert, E. C. Tullis, D. E. Sell, and G. M. Shear, all of whom at sometime served as president of the SWC. Also present were; H. A. Nation, long time associate with Dow Chemical Co., and A. J. Loustalot who is now Plant Physiologist with CSRS-USDA in Washington, D.C. Under the leadership of

these men the Conference developed during its first 5 years from 73 to 186 members and in papers presented from 13 to 48.

Dr. Hinkle, who was president in 1953, and Dr. Ennis, who was president in 1954, were also among the first members of the Conference. Both recall that in those days a man in weed control did the whole job. He put out the field plots, did any teaching that was done, and was also the extension man. Many times his work with weed control was only a part of his total responsibility. Dr. Hinkle did all of the weed control work done at the University of Arkansas in addition to serving as Department Head. He collaborated with John Gibson of Dow to put out the first weed plots in Arkansas in 1949 or 1950. It was of course a test involving the use of dinitro. Nearly all of the old timers in weed control in the South did at least some work with dinitro. Probably the only reason I am in Weed Science is because I was called on along with Frank Davis at Auburn University, to see if we could find out why dinitro, that looked so good for a while, suddenly turned sour.

Dinitro had been used quite effectively for 2 years on many acres in many states but in 1951 dinitro caused severe damage to cotton in many areas. I recall that Hoyt Nation had some strong words with Dow Chemical Co. because he thought that they must have changed the formulation for dinitro and not told him anything about it. This was the only way he could see how the herbicide could look so good for 2 years and then look so bad the next. The dinitro failure may have been a good thing because it got many plant physiologists, soil scientists, and meteorologists interested in weed control and because it taught us the need for a lot of field testing before a compound was fully recommended.

While we are mentioning Hoyt Nation we should recognize his great contribution to the Conference through the years. In retrospect, it may seem strange that he was never president. His failure to become president resulted from an unwritten agreement that the Conference should not have a man associated with a chemical company as its president. The infant organization was most anxious that its Research Reports and other activities never be suspect because the president was associated with a company that sold products that might be recommended by the Conference. This tradition was not broken until R. E. Richards of Geigy became president in 1964. I remember sitting in on many formal and informal debates about our unwritten law that prevented a man associated with a chemical company from becoming president. I think the Conference was wise to avoid the risk of being identified with a company in its early years. I also believe that this is no longer a cause for legitimate concern.

During the second 5 years, the Conference presidents were D. A. Hinkle, W. B. Ennis, Jr., W. C. Shaw, G. C. Klingman, and W. B. Albert. All of these men contributed much to the development of the conference and some went on to become prominent nationally. Bill Ennis is now Chief of the Crops Protection Research Branch of the USDA. I think I tell you a lot about the stature and personality of the man when I tell you that I can't bring myself to call him anything but Bill. His integrity, knowledge of the field of Weed Science, and ability to identify, attract and hold competent men has been apparent throughout his career. Bill Ennis, Warren Shaw, and Glenn Klingman all went on to become presidents of WSA

(WSSA). Dr. Shaw's career was always marked by boundless enthusiasm, a complete belief in Weed Science, and a compelling desire to be in the center ring. It is then no surprise that Warren Shaw did much to raise Weed Science toward an equivalence with the other agricultural sciences and became involved with Weed Science in international affairs and national politics. Dr. Klingman was perhaps one of the first of the university personnel to establish a large and well funded program in Weed Science involving research, teaching, and extension. Many of our present personnel got their start with Klingman. Dr. Albert was president in 1956-57. He was a true southern gentleman and carried on his research program under difficult financial circumstances. I remember well the good humor and scientific perception that enabled him to present a valuable paper dealing with what happens when you accidentally apply 3 times the recommended rate of the chemicals being tested.

Under the leadership of such diverse personalities as Drs. Albert and Shaw, the Conference continued its steady growth. During this period the Research Report increased from 12 to 56 pages, the financial assets from \$160 to \$1550 and the number of sustaining members from 0 to 31.

One hallmark of the success of this young organization was its determination that it should not be dependent on or subservient to any other group or agency. Perhaps this is only a reflection of the rebel spirit that seems to pervade the South. In its first meeting the Conference voted not to meet with the Association of Southern Agricultural Workers (ASAW). In 1952 they again asserted their independence by defeating a motion that would have had them forego the 1953 meeting and attend the WSA meetings instead. They did vote to meet with the WSA in 1957 since the meeting was at Memphis and at the time of the year when the Conference usually met.

It is well recognized that the success of meetings such as these depends in a large measure on the suitability of the site and the associated hotel accommodations and meeting rooms. Part of the success of the Conference rests with the fact that it has for the most part, chosen good meeting sites and when it has made a mistake it has tried not to make the same mistake again. In the early days, the group was small and the primary means of transportation was by train or by automobile. Some of the priorities for selecting a meeting site have changed since then. We have to look now for hotels large enough to handle a group as large as ours and the city must be readily accessible by air. Dr. Albert in a recent letter recalled an early meeting in Baton Rouge, La.

"We drove in by car. It began snowing in Birmingham and the roads became steadily worse before we reached Baton Rouge late that night. I was fortunate enough to have a room at the Heidelberg Hotel in downtown Baton Rouge. Anyway, the LSU campus was covered with 6-8 inches of wet snow. Walking back and forth to meetings, meals, etc., we had wet feet all day. Those of us at the hotel could warm up and dry out at night. Those who stayed in the Student Dorms did not fair quite so well, as I recall."

A similar incident at Memphis, Tenn. involving snow and having to tip the bellboys three times between the car and the hotel room put

Memphis on the undesirable list for some of us. The SWC did not meet in Memphis again for many years. The aversion of ice and snow swung the vote for a trip to St. Petersburg, Florida, one year even though it was a long way from the center of the Conference area.

During the third 5 years, E. G. Rodgers, R. Behrens, V. S. Searcy, R. A. Darrow, and W. K. Porter were presidents of the Conference. All made important contributions to the SWC and all are still active in Weed Science or closely related fields. Certain persons have about them a manner that makes all around them aware of their strength of character and unquestionable integrity. E. G. Rodgers, current vice-president of WSSA and W. K. Porter, Associate Director at Mississippi State University are such persons. Both continue to make contributions to southern agriculture. R. Behrens left for the University of Minnesota before he completed his full term as president. V. S. Searcy is probably known by his "first name" by more people than any other man in the Conference. The first name that I refer to is "Shorty". Although his stature is short and he loves to joke about it, his perception is keen. When he was a field research man he continually preached the need for fundamental research, when he was a University professor he always advocated first class citizenship in the Conference for those associated with chemical companies. He helped initiate the drive that resulted in the Chairman of the Sustaining Membership Committee becoming an ex officio member of the Executive Board.

Bob Darrow was the fourth president during this period and the first one drawn from the rapidly expanding field of brush control. A highlight of one of our meetings was his presentation of the many unfortunate things that can happen to a man working in a brush control. These included everything from crashes of the spray-plane to a tornado that demolished 20 or more brush plots and which, according to him, touched down only where the plots were located. No mention of this period would be complete without reference to Homer Ray, the weed killing man from Texas. Many joked about Homer because his tremendous enthusiasm sometimes made him appear ludicrous, but few matched his effort. Walter Porter wrote of him as follows.

"One thing that always stands out in my mind is Homer Ray with bottles, cans, and pressure tanks strapped around him walking through the lobby of the hotel showing how his Texas jet gun worked. I also recall one session, seems to me like it was Memphis, when I was chairman of the program for one afternoon. When I looked at the program there were five papers scheduled, I was chairman, and Homer Ray was presenting all five papers."

During the third 5 years, the Conference continued its steady growth. The pages in the Research Report increased in number from 56 to 169, dues were increased from 3 to 5 dollars (the first dues were 2 dollars), sustaining members increased from 31 to 55 and cash assets from \$1500 to \$4800.

Presidents during the fourth 5 years were J. T. Holstun, Jr., R. F. Richards, R. E. Frans, D. E. Wolf, and D. E. Davis. All are still active in Weed Science except Dale Wolf who is now Director of the Industrial Specialities Division of Du Pont. This was the period of greatest growth of the Conference. Membership increased from 390 to 962, papers presented

climbed from 61 to 116, and the 1965 Proceeding was 750 pages long. During this period of unprecedented growth the Conference also faced and overcame a financial crisis. The assets in 1963 were listed as \$6,313 dollars and in 1966 as \$31.

The \$31 dollars does not reflect the gravity of the crisis. It was necessary for the Conference officers to borrow money for two successive years in order to print the Research Report and handle other financial obligations prior to the payment of dues by the membership. I don't know how much money Henry Andrews borrowed but H. H. Funderburk, Jr., and I borrowed \$2,000 to take care of putting on the 1967 meeting. Many factors contributed to the financial collapse. In 1960 the total pages in the Proceedings plus the Research Report was 578 while in 1966 the total was 888. The cost per page during this time increased from \$2.82 to \$12.19. Thus publication costs alone increased from about \$1600 to nearly \$11,000. Other prices were also increasing but not as rapidly. Many persons spent many difficult hours devising plans to get the organization on a sound financial basis. Among those deserving thanks are H. H. Funderburk, Jr., and Robert Mann who together established a sound method of cost analysis and bookkeeping. George Sistrunk worked long and diligently to raise our sustaining membership from 79 to 118 and thereby tremendously increased the income from that source. At one banquet, Doug Boatright used his supersalesmanship to raise enough money to keep the student interest program going. I would also like to claim part of the credit for restoring financial stability by analyzing our problem and selling the membership on raising the dues from \$5 to \$10. Procedures were also instituted to decrease the number of pages in our publications and the cost per page.

There was only one happy note in our financial embarrassment. Because of the size of our organization, numerous hotels bid for us to have our conference in their facilities. One member of the conference got somewhat overwhelmed by the sales pitch from a hotel in Miami and signed a contract calling for more people to go than we thought were probable and also for an appreciable number of people to spend more time at the hotel than the duration of the Conference. There were some hints of a law suit. Dale Wolf consulted with Du Pont lawyers and in the end the matter was settled amicably when it was pointed out that the Conference had very little money.

During the period of vigorous growth and financial crisis the Conference found it desirable to make the vice-president the president elect and to add the office of editor to relieve some of the load from the secretary-treasurer. Red Richards became our first president from a chemical company and a better first could not have been found. His rare good humor and executive ability was of great value to the Conference.

During the last 5 years the Conference has continued to prosper under the capable leadership of presidents; R. A. Mann, Leonard Lett, J. B. Baker, D. D. Boatright, and J. R. Orsenigo. The Conference changed its name to the Southern Weed Science Society (SWSS) after the national organization changed its name to the Weed Science Society of America (WSSA). The membership of the SWSS, and the number of sustaining members, the number of papers presented, and the lengths of the Proceedings and Research Reports have remained about constant throughout this period.

One of the major concerns of the SWSS has been whether the Society could maintain its vigor and the quality of the papers presented when the WSSA changed from biennial to annual meetings. Such thoughtful and concerned members as R. E. Frans and H. H. Funderburk, Jr., expressed grave concern. Some of our members feared that the research personnel would always choose to go to the national meetings and present their papers there whenever the national meeting was reasonably close to the region. Some educational institutions and other organizations had established a regulation that permitted a scientist to receive money for travel and per diem for only one scientific meeting per year. Three things have enabled the SWSS to maintain its vigor in the face of strong competition from WSSA. The first was good leadership, the second was the excellent student interest program, and the third was some relaxation of the one scientific meeting per year rule. The attractiveness of the student interest program to the students and their professors has done much to maintain the quality of the research papers presented. Competition with WSSA is still a most important item in determining whether the SWSS will continue to grow.

I am going to omit further comments about the leadership during the last 5 years and turn instead to a series of events that have had a serious effect on Weed Science and which will continue to do so for at least the immediate future.

In 1959, the FDA withdrew cranberries from the market containing detectable quantities of amitrole. The basis for the action was the claimed carcinogenicity of large dosages of amitrole to certain test organisms. Although this caused a temporary furor, the incident did not have any serious impact on Weed Science. In 1960, Rachel Carson authored the book, "Silent Spring" which received tremendous public acclaim. The whole pesticide industry considered itself to be under attack and much effort was spent in an attempt to ameliorate the impact of this book. Unfortunately, after many vigorous denials of the implications of the book, many Weed Scientists reverted to about the same procedures and attitudes as before. Apparently, this was justified by their thinking that this was primarily an insecticide problem and the belief that the public concern was a fad that would not last long.

However, public concern did not fade and the government responded. The Mark report, "Report of the Secretary's Commission on Pesticides and Their Relationship to Environment Health", was published in 1969. It was only one of many studies that were made in response to the public concern about pesticides. Also in 1969, a committee from the Division of Biology and Agriculture of the National Research Council presented a report to the USDA on Persistent Pesticides. They recommended, "1. That further and more effective steps be taken to reduce the needless or inadvertent release of persistent pesticides into the environment." This did not satisfy the demands of many persons opposed to the use of pesticides and several states banned all use of DDT.

The next target for attack was 2,4,5-T. It was launched by a strange amalgamation of people with many interests and aims. It included groups opposed to the War in Vietnam, members of the Audubon Society, conservationists, members of wildlife organizations, and persons opposed to the "Establishment" in general. The primary basis for the attack was

the finding that a large dose of 2,4,5-T caused a significant increase in birth defects in a test organism. Consequently, registration of 2,4,5-T was cancelled for some uses and suspended for others. The ruling was appealed and a committee was established from people nominated by the National Academy of Sciences. This committee recommended, based on a study of the old facts and research completed since the initial action, "That registration for the use of 2,4,5-Trichlorophenoxyacetic acid and its esters be restored to the status existing prior to April, 1970, with the following exceptions." The exceptions listed some additional safeguards that should be initiated. One member of the 10 man committee opposed the report. The recommendations were not accepted by the EPA. Instead a public hearing was called to bring the public into the decision-making process. The report was denounced in articles published in "Nature" and "Science" even before its contents were made public. It now appears that a trend has been established that is of grave concern to all Weed Scientists in this Conference and elsewhere. John Holstun, past-president of SWC and currently Leader of Weed Investigations-Agronomic Crops, expressed his concern about these matters in his letter to me. His letter carried this message; "We are going to have to conduct the research necessary to characterize and document the benefits and risks of using weed control chemicals and tools. We should help responsible people to decide what level of risk is acceptable. We will either have to help those responsible to make this decision or we will have to live with the decision that others help to make." I can think of no better statement with which to close the history of the first 25 years of the SWSS or with which to challenge those who will make SWSS history in the next 25 years.

Table 1. Officers of the Southern Weed Science Society (Southern Weed Conference).

Year	President	Pres.-Elect	Vice Pres.	Secr.-Treas.	Editor
1948	C. A. Brown		O. A. Leonard	G. C. Klingman	
1948-49	C. A. Brown		O. A. Leonard	G. C. Klingman	
1949-50	E. C. Tullis		W. B. Albert	O. E. Sell	
1950-51	O. E. Sell		H. A. Nation	A. J. Loustalot	
1951-52	G. M. Shear		A. J. Loustalot	G. C. Klingman	
1952-53	D. A. Hinkle		W. B. Ennis, Jr.	G. C. Klingman	
1953-54	W. B. Ennis, Jr.		W. C. Shaw	G. C. Klingman	
1954-55	W. C. Shaw		G. C. Klingman	E. G. Rodgers	
1955-56	G. C. Klingman		W. B. Albert	E. G. Rodgers	
1956-57	W. B. Albert		E. G. Rodgers	W. K. Porter, Jr.	
1957-58	E. G. Rodgers		R. Behrens	W. K. Porter, Jr.	
1958-59	R. Behrens		V. S. Searcy	W. K. Porter, Jr.	
1959-60	V. S. Searcy		R. A. Darrow	R. E. Frans	
1960-61	R. A. Darrow		W. K. Porter, Jr.	R. E. Frans	
1961-62	W. K. Porter, Jr.		J. T. Holstun, Jr.	R. E. Frans	
1962-63	J. T. Holstun, Jr.	R. F. Richards		H. Andrews	
1963-64	R. F. Richards	R. E. Frans		H. Andrews	
1964-65	R. E. Frans	D. W. Wolf		H. Andrews	
1965-66	D. E. Wolf	D. E. Davis		H. H. Funderburk	
1966-67	D. E. Davis	R. A. Mann		H. H. Funderburk	R. P. Upchurch
1967-68	R. A. Mann	L. Lett		H. H. Funderburk	R. P. Upchurch
1968-69	L. Lett	J. B. Baker		H. H. Funderburk	R. P. Upchurch
1969-70	J. B. Baker	D. D. Boatright		P. W. Santelmann	A. D. Worsham
1970-71	D. D. Boatright	J. R. Orsenigo	T. J. Hernandez	P. W. Santelmann	A. D. Worsham
1971-72	J. R. Orsenigo	T. J. Hernandez	A. F. Wiese	R. E. Talbert	J. F. Miller

Table 2. Meeting site, number of persons registered, number of papers presented and number of pages in the Proceedings of the Southern Weed Science Society (Southern Weed Conference).

Year	Site	Attendance	Papers	Pages in Proc
1948	Stoneville, MS	73	13	43
1949	Baton Rouge, LA	116	41	119
1950	Biloxi, MS	106	35	197
1951	Memphis, TN	132	36	146
1952	Atlanta, GA	186	48	213
1953	New Orleans, LA	211	48	246
1954	Memphis, TN	302	59	360
1955	St. Petersburg, FL	258	75	477
1956	New Orleans, LA	204	52	316
1957	Augusta, GA	241	47	273
1958	Memphis, TN	448	8	122
1959	Shreveport, LA	259	65	325
1960	Biloxi, MS	320	59	442
1961	St. Petersburg, FL	360	79	515
1962	Chattanooga, TN	390	61	299
1963	Mobile, AL	553	94	271
1964	Jackson, MS	699	91	444
1965	Dallas, TX	814	162	750
1966	Jacksonville, FL	730	119	638
1967	New Orleans, LA	962	116	473
1968	Miami Beach, FL	742	101	410
1969	Dallas, TX	792	130	464
1970	Atlanta, GA	813	122	430
1971	Memphis, TN	852	127	452

Table 3. Number of sustaining members, cash assets, and number of pages in the Research Report of the Southern Weed Science Society (Southern Weed Conference).

Year	Sustaining Members	Cash Assets	Pages in Research Report
1948	0	0	0
1949	0	0	0
1950	0	202	0
1951	0	176	7
1952	0	160	12
1953	0	462	35
1954	0	343	48
1955	10	733	34
1956	34	964	47
1957	31	1,554	56
1958	25	2,466	67
1959	23	2,799	87
1960	22	3,327	136
1961	43	3,566	133
1962	55	4,791	169
1963	59	6,313	161
1964	90	4,743	213
1965	76	4,706	225
1966	79	31	250
1967	102	2,434	221
1968	118	10,167	242
1969	105	12,395	209
1970	118	19,864	159
1971	115	29,677	243

CASH ASSETS AND SUSTAINING MEMBERSHIP

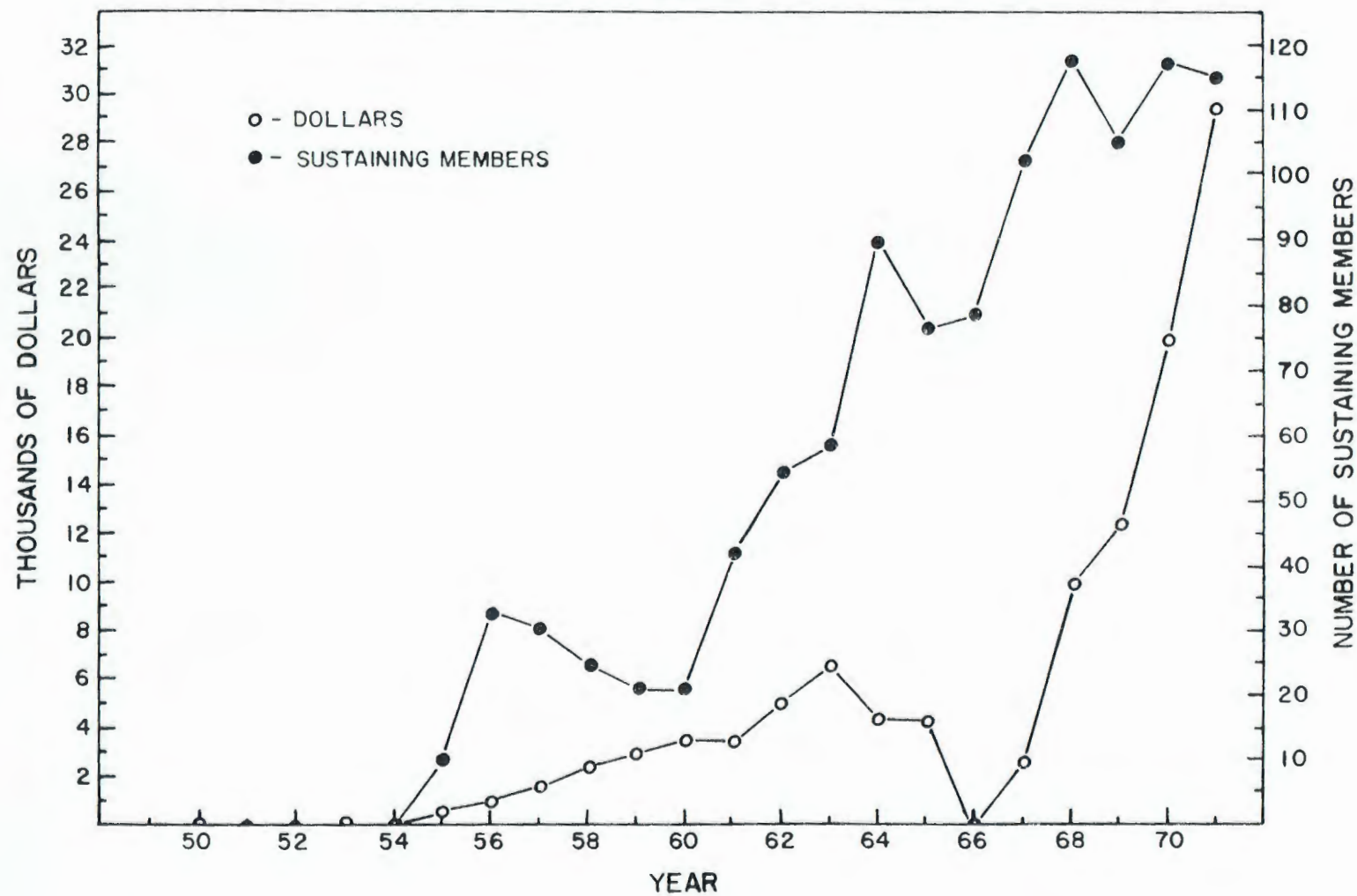


Figure 1. Number of people registered and number of papers presented at the meetings of SWSS (SWC).

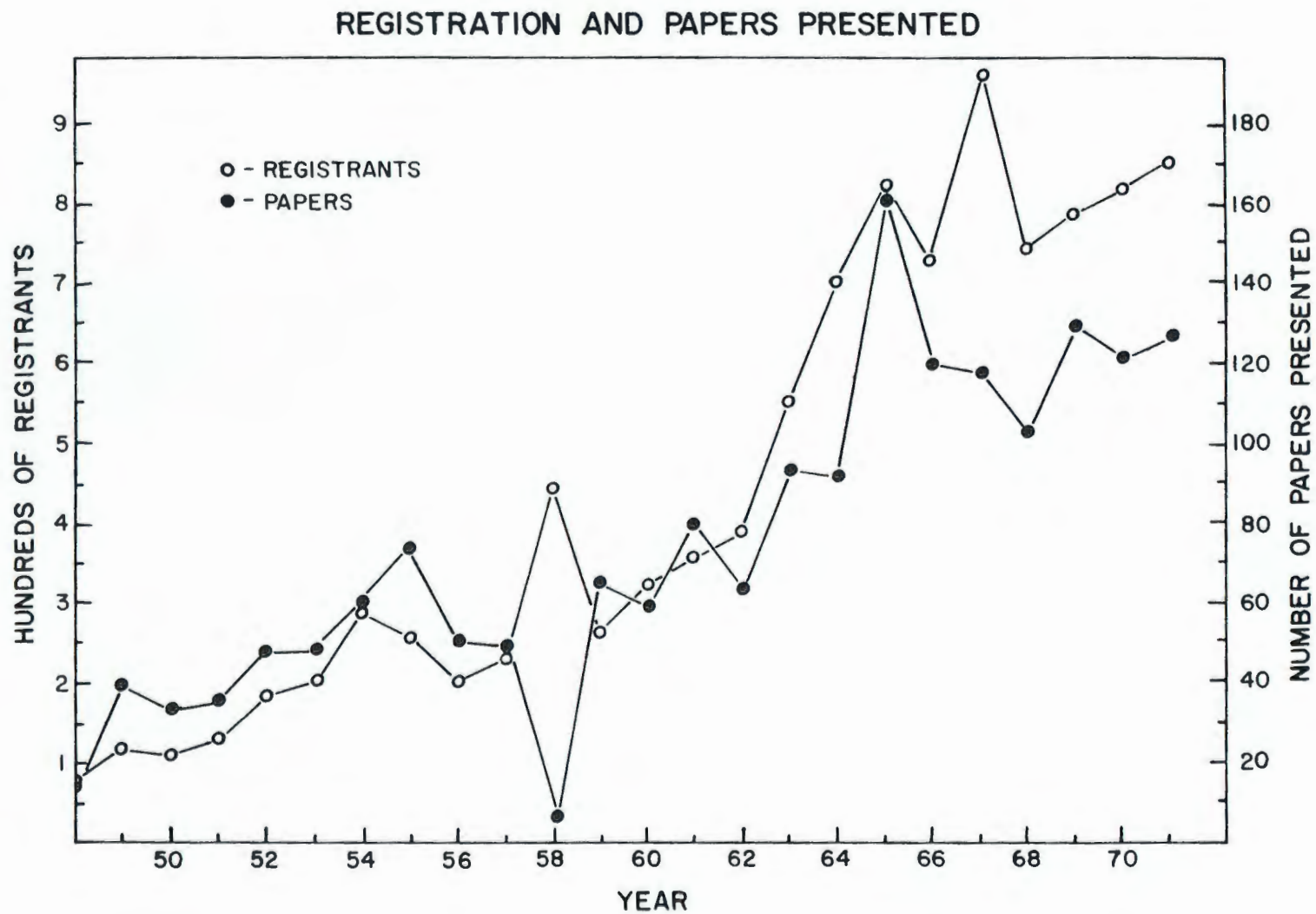


Figure 2. Number of sustaining members and cash assets of the SWSS (SWC).

WEED SCIENCE IN THE FUTURE

J. R. Orsenigo
President, Southern Weed Science Society
Professor (Plant Physiologist), University of Florida
Institute of Food and Agricultural Sciences
Agricultural Research and Education Center
Belle Glade, Florida 33430

Each generation has considered itself the time of change, the focus of adjustment, and, each in turn has looked backward to the "good old days." We live in a time of accelerating change described in the best selling book, "Future Shock" (7). Toffler calls agriculture the first stage of economic development, and states that we in the United States, and several other developed countries, have thrown off the "yoke of agriculture" and advanced through industrialism into a service economy (7). But, he does not further acknowledge that industrialism and a white-collar service economy exist and are sustained only through an effective agriculture. Recently, instant change has had an accompaniment: obsessive and shallow preoccupation with the inadequately defined and conceived words "ecology" and "environment" has fostered a shrill, unreasoning attack on the causes of real and imagined trauma to our world. Pest control chemicals are central to the controversy. Day has concluded that, "The principal limitations to further development of chemical weed control procedures are social and legal rather than technological" (5).

As plant scientists, we know that nature has a tenuous balance at best, it never was and never will be static. Plants are dynamic biological organisms that demonstrate perceptible and imperceptible change through interactions with the natural and man-made pressures of the living system of our environment.

It is probable that farmers were the first organized, practising ecologists and vegetation managers. Historically, agriculture has developed more caricatures than accurate images. More than 95 percent of our population consume the food on which they depend without knowledge of when, where, why, and how agriculture functions. Our communication with them should not be defensive, but a clear, positive, repetitive statement of fact. Urbanites and suburbanites must understand that burgeoning populations and unrestricted housing developments simultaneously increase the need for food and limit availability of land for food production. The story of the farmer, and the food supply the consumer takes for granted, should be presented by the mass media in an annual series of timely reports. An outline of specific farmer input to produce the peas in the can or the breakfast cereal in the box could be imprinted on each food package. The message needs to be carried regardless of the method, and this, and other agriculturally associated societies, may need to participate in the cost of educating our population.

Neither casual nor zealous indulgence in socio-politics is professionally responsive. The posture of weed science in contemporary issues must be

accurately and clearly stated but these popular emotional issues should not distract us from the discharge of our responsibilities, as professionals to our profession, and, as primary contributors in managing vegetation so that all peoples have food, fiber, and a worthwhile environment.

No distinctions will be made among the roles of research, teaching, and extension or between academe and industry in this evaluation of future opportunities. Our, capabilities, interests, and goals are thoroughly interrelated. Weed Science in the future must develop along two necessary, compatible, and parallel paths but with a broader base than we now enjoy.

As an independent science, weed science embraces botany and plant physiology. Our concern, basically and practically, is with plants and their responses to applied pressures. Although chemicals are the most effective and useful vegetation management tools at present, we should not be committed to a narrow attack on weed problems. Our implicit goal of weed control or weed management through science requires wide exploration of individual and combined methods. Technological advances in other disciplines can make presently infeasible methods suitable for our research and field use. Some of the "flyers" listed below have failed in limited trials; the promises of others have been and are being reported at sessions of this and other Societies. The opportunities are many:

Application of pulsed or continuous electrical charges to weed seed in soil or to emerged plants may be possible with improved power sources. Autosensing capacitative units could discharge when contact is made with tall weeds in a shorter-statured crop, i.e., cocklebur in soybean.

Radiation generated by several sources may be useful: coherent LASER beams (2), UHF electromagnetic fields (4), and MASER techniques.

Thermal systems which utilize short-duration, high-temperature "flash heating" of emerged weeds may be successful during fallows or in protected crops.

Ultrasonic frequencies emitted by soil probes or directed aerial units could accomplish plant tissue disruption.

Electrostatic, flotation, mechanical or other methods might literally glean the fields by physically separating weed seed from superficial soil.

We are nearing more widespread research and usage of regulated biological methods of weed control with enhanced natural or introduced populations of insects and

diseases. Highly specific or virulent strains could be isolated and selected for use against specific weeds.

The phytotoxicity of natural plant exudates can foster weed control through crop rotation. The inadvisability of planting potato or onion after buckwheat is well-known. Research on these naturally occurring incompatibilities could lead to synthetic counterparts effective against weeds.

Despite atomic and space events, our time is characterized accurately as the "age of chemistry". The most adaptable, manageable, varied and useful weed science "tools" will be provided by chemistry for the near future. Plant physiologists have abundant academic challenge in determining the mechanisms of herbicidal action; our most useful chemicals are poorly understood. Crop and crop seed protectants like naphthalic anhydride (1) and herbicide detoxifiers should rate high research priority. Germination stimulants to cause quantitative or massive germination of weed seed could facilitate any appropriate chemical or mechanical control method. Plant modifiers or regulators may alter weed habit or maturity to minimize crop competition. Broad spectrum soil sterilant systems with a finite life would offer inclusive pest control. We should not be overly preoccupied with a search for the "perfect herbicide", but with potential components of an overall system.

As a dependent science, weed science must be problem oriented. Expertise in vegetation management has meaning only within a use context. Agricultural production practices have developed rapidly in complexity and sophistication during the past 25 years, and rapid acceptance of technology has occurred generally in the so-called "developed" countries. The marked innovations and changes during this period helped to create a new level of the farm hierarchy--the scientific farmer, an individual not only amenable to change but one who catalyzes and makes change. The opportunities for weed science in problem solving in the future will be increasingly related not only to our own technological advances but to technological developments in other disciplines. Our future practices will become more thoroughly integrated in a systems approach.

Specific agronomic and horticultural crops, as now known, are likely to become modified distinctly. Many changes will be morphological, altering plant habit or type to increase amenability to machine harvesting, handling, and some field processing. Freedom from weeds to facilitate harvesting will be an important requirement, particularly in short-statured, high-value horticultural crops.

New crop cultural systems with specific plant orientation and optimized plant populations may require modification of weed control practices to improve the duration of effective weed control.

A compelling need for food for a world population reaching almost oppressive levels will induce widespread searches for new crops to maximize food production per unit area. New and unusual crops will create new and unusual weed control problems. The hypothesized desert greenhouse systems will require algal control while aquaculture will require establishment and maintenance of an adequate maritime environment.

The few ubiquitous, important weed species of the world are highly challenging (6). Effective worldwide control of johnsongrass or nutsedge would more than equal a several percent increase in arable land area or production efficiency. Improved understanding of individual problem species and their ecological relationships could be more meaningful than a new herbicide. The plasticity of weed populations and the specificity of weed response are keys to future problems and solutions. Our weed problems have not been mitigated by time but are increasingly diverse and specific.

Herbicide delivery systems must be improved to provide greater precision, more effective placement, better chemical performance, and operational economy. Combinations of several methods in producing one crop will be commonplace.

Effective relationships with other plant protection practices within and without crop fields must be developed. Compatibility of the several pest control systems used to produce a single crop have been poorly explored. Phytotoxicity from chemical incompatibilities may cause damage and yield loss without readily recognizable symptoms. Problems among integrated crop production inputs may increase as agricultural practices become more complex.

Weed science will continue in a unique role in developing plant sanitation programs to improve public convenience, health, and safety and also to control plants which host diseases, insects, nematodes, rodents, and viruses which affect crop plants.

New methods of vegetation management created by an independent weed science should receive prompt, judicious evaluation and utilization.

During the past 25 years, the field of weed control has developed into weed science, a strong, effective, independent and dependent discipline. But, weed science has not received recognition commensurate with its performance. A sine qua non for the future is that we generate University disciplinary departments of weed science and encourage the continued high level of professional performance. Weed science should be reasonably responsive to socio-political factors of our times, yet we can better serve mankind and ourselves by developing practices which safeguard and improve our environment and by establishing an accurate, strong and well-articulated position in environmental affairs. Obvious and unanticipated opportunities for future development of our profession as both an independent and a dependent science await our attention. Despite the diversity of opportunity, we should be aware that weed control through herbicides, per se, is the most effective near-future component of a crop production system that integrates chemical, cultural and mechanical inputs. We can be sure that weed science 25 years hence will bear little identity with today's practice and that these are "the good old days."

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INDUSTRY'S ROLE IN WEED SCIENCE IN THE NEXT TWENTY-FIVE YEARS

Glenn C. Klingman
Director of Plant Science, Eli Lilly and Company
Greenfield, Indiana

I am pleased to return to my favorite Weed Conference--the Southern Weed Science Society. This is due, of course, to my long association with this society and my respect for your programs through the years.

When Allen Wiese, your vice-president and program chairman, asked me to develop this topic my first inclination was to beg off on the basis that my crystal ball is blurred--as is perhaps yours. But, here I am.

As I studied the topic, it became clear that I was not being asked--should there be another corn, cotton, or soybean herbicide; should we look toward preemergence or postemergence control; or the pros and cons of persistence of a herbicide. Rather, it appeared that I was expected to look ahead at weed science and the role that industry will play as we move through the next twenty-five years. It becomes immediately obvious that I cannot do justice without discussing the areas of contact between industry and the university and the USDA research and teaching program.

Weed Control as we know it today is a part of modern agricultural technology. The importance of this technology to the consuming public, to our basic economy, to our way of life and to agriculture itself has been repeatedly pointed out (1, 2, 3, 6, 7, 8, 12, 13, 14, 15, 16, 17). Thus, I do not plan to dwell further on this point.

There are probably few in this audience who are not familiar with the risk/benefit ratio. Almost every thing we do has a risk/benefit attached to it. Can you think of any substance or activity really devoid of risk? Highly useful materials such as aspirin and penicillin kill a certain number of people each year. The last time you took a walk or drove a car involved risk. We must accept that every action has a risk. Those of us that have worked in agriculture are convinced that in modern herbicide development the risks are very low compared to the benefits. The fact that in the United States we are enjoying a brief period in history when our ability to produce food exceeds our needs is due to our acceptance of these minimum risks.

Recently I read an article entitled "Toxic substances naturally present in food" by Richard L. Hall (9). The word that caught my eye was "naturally." The author reviewed the concept of "no effect level" and the means by which we protect ourselves from food additives by various margins as great as 2,000 times the no effect level. However, in the case of the Delaney Clause there is "zero" tolerance for chemicals which show carcinogenic properties at any dosage, even if a million or more times any anticipated exposure is necessary to cause cancer. By comparison, according to Hall's article many common foods would not pass the stringent tests now applied to pesticide development. Radishes, carrots, celery and potatoes containing naturally occurring cholinesterase inhibitors would be banned. Potatoes pose a double threat

since they also contain the poisonous alkaloid solanine. Glycoside containing foods such as lima beans and almonds yield hydrogen cyanide during cooking or digestion and would have to go. Tea, cocoa, spinach, cashews and almonds contain oxalates and oxalic acid which are strong poisons. Caffeine, a known mutagen is found in coffee, tea and cocoa; nutmeg contains myristicin a hallucinogen, as well as safrole a carcinogen. Without further belaboring the point, other food items that would have to be eliminated from the diet include turnips, cauliflower, peaches, pears, strawberries, Brussels sprouts, bananas, pineapples, and tomatoes; vitamin containing foods, eggs, butter; and seafoods especially because of the arsenic; meats such as ham, bacon, smoked meats and cheese. Anything cooked with charcoal including charcoaled steaks would be omitted. Moreover, we would also need to turn off the sun since it is well established that overexposure to sunlight can cause skin cancer. Using criteria applied to pesticides most foods and sunlight should be banned. We should recognize, as does much of the rest of the world, that chemicals do have a no-effect level and the magnitude of effects above that level will be dose related. The future need for food demands that we recognize this point and use realistic standards that still guarantee safety in our food.

There is no question in my mind that a serious food shortage in this country could spark serious political trouble for us, for our country, and for our way of life. I am also confident that if we were to do away with modern food technology--food shortages will quickly develop. However, justification of weed control as it relates to modern food production technology is not my topic today. Thus, I will not discuss the subject except as it relates to a specific topic.

Then--where are we headed in the next twenty-five years? There are a few points that most thinking people quickly agree on. The population in the United States, and certainly in the world, will rapidly increase. Space just for people will take up a considerable amount of present day farm land. Thus, there will be less land for food production, even though greater food supplies will be needed. Food will become much more critical. The consumer of food and the producer of food will become even more distantly separated. At the same time, the palate of this late twentieth century man will become even more discriminating. For example, he will likely want increasing supplies of green leafy vegetables and fruits.

The average age of the U. S. farmer is now 57 years. Thus, the next twenty-five years will see a nearly complete turn-over in our active farming population. Unless prevented by regulations and red tape he will be an even more efficient farmer, farming strictly as a business. Farm numbers will continue to decline. Farms grossing over \$20,000/year will produce about 80 percent of total farm products, and income for each such farm will dramatically improve. Smaller farms--those that are using less technology will have an increasingly difficult time. There will be little or no labor available to wield the hoe. However, weeds will still be around. We may have a new agriculture, new farmers, new crops, new types of farming, but we will still have our old customers, the weeds--and they must be controlled. We may shift the weed spectrum to more resistant species, such as nutsedge. Due to the longevity of life of seeds in the soil, any temporary lack of control will be immediately accompanied by reinvasion. With greater demands for horticultural

and fruit crops weed control is even more critical than with corn, cotton, or peanuts--especially when we consider effects on crop yields and costs of production. Pressures, including government regulation, will demand that the farmer use safe pesticides. But use them he must.

If proposed prescription pesticide use becomes a reality, certain agribusinesses will develop rapidly. Custom service may take a number of forms. Probably the first will be greatly increased custom application. We can also expect the organization of professional service groups providing technical advice and recommendations, and assistance to the farmer in meeting requirements. I would agree with these proposed new regulations and the millions that it will cost society if there was any evidence that our food supplies are in fact being dangerously contaminated with herbicides. We now have a well developed monitoring system (5). Data from this system show that our food supplies are healthful and free of dangerous residues. Where abuses exist, we already have the laws and the mechanisms to correct those abuses. There is no need to place an additional super-structure over and above the effective one now doing an excellent job. Therefore, I seriously question the need for this pesticide regulation. I question that it will give us a safer food supply, or prevent accidents--but it may come. If it does come, we will pay for it through higher food costs, higher taxes, and through a considerable inconvenience to both the farmer and merchant.

Those trained in biology are well acquainted with "survival of the fittest." Only within the past hundred years has there been adequate food plus developments in medicine to permit rapid increases in the human population. Through history whenever too many people or too many animals developed in a given area, nature quickly acted through famine or disease to bring about the needed balance. It was truly a survival of the fittest. We should remember that those biological laws have not been repealed. Technology has simply made it possible for most of us to temporarily escape the full force of these biological laws. The risk/benefit ratio of technology has certainly been in man's favor. I would hope that more ecologists recognize that herbicides can be used to manage the environment to the advantage of wildlife, birds, fish--and, thus, can be a friend to these species--just as they are a friend of man.

Let us consider weed science as we know it through education and research--and the effects that industry may have in the future.

Weed Science--Education, Undergraduate and Graduate

The need for weed science education will increase during the next twenty-five years. Much of the confusion concerning pesticides and agricultural chemicals has total misunderstanding as its roots. Frequently, critics do not even understand elementary chemistry, elementary plant physiology and elementary ecology as it relates to agricultural production. The answer appears obvious. We must have better education in these areas.

Modern entomology and plant pathology are less than fifty years old, and modern weed science is less than twenty-five years old. Only a handful of college of agriculture graduates have had any real training in weed science.

Less than ten percent of our college of agriculture graduates have had a single course in weed science. The public has had almost no education in the subject.

More and more, recently, I hear comments that industry must do more toward education in weed science. I readily admit that more education is needed. Industry may produce movies, slide sets, circulars, etc. thereby helping some. However, education, per se, is not the job of industry. Industry education will remain product oriented--to gain more widespread and better use of their products. Undergraduate and graduate university training is the cornerstone to better understanding and a better informed public. Others from industry that have supported increased university training in weed science include Dr. Hannah of Monsanto, Dr. Wolf of E. I. duPont, Mr. Adolphi of Geigy, Mr. Mullison of Dow, Dr. Fertig of Amchem, and others. Let's keep our thinking clear. Universities are for teaching and research. The challenge cannot and will not be adequately met by industry.

Education, Adult

In education areas, probably the greatest overlap occurs in the marketing and sales area of industry and that of university extension. Both are working toward the adoption of new, and assumed to be, improved practices. Both appeal to the same motives and senses. Having now worked reasonably close to both, I would say that there is almost no difference in personality, and capabilities of a good university extension worker and a really good industry salesman.

Research

Dr. Don Davis (4) in his presidential address in 1967 and Dr. Larry Hannah (10, 11) have alluded to the fact that the farmer is placing less and less emphasis on experiment station recommendations when he decides what herbicide to use. It would appear to me that this same trend has continued through the past five years. I would guess, however, that this varies from state to state, depending upon the adequacy of research data and the soundness of recommendations coming from the experiment station and extension service of the state.

I still maintain the view that research, including field research, should be done by the State Agricultural Experiment Station. Also, I feel equally strong that the original concept of adult education, probably through demonstration, is an appropriate full time challenge for the Extension Service. Seldom does the extension man have time to do more than a demonstration type field research. The quality of the research and the type of research done is more critical than whether the research is done by the experiment station, the extension service, or by industry. I suspect that all of us learn to rely on that information source which proves to be accurate. We avoid those sources that are obviously poorly informed or that permit bias to influence their recommendations. The farmer is no different. If the College of Agriculture expects to maintain its leadership, most states are going to have to do better in the area of weed science.

It is my belief that the farmer would prefer to look toward the schools of agriculture for his information. In addition he would like to trust someone that can develop a "Total Technological Involvement" approach. This means that every technical improvement is put together for a total systems approach. For example, new crop varieties, new fertility practices including minor elements, new row widths and plant populations, new fungicides, insecticides, herbicides, and biological controls are all appropriately researched--together. The research is sufficiently detailed to clearly establish the contributions of each entity. In such a program a new practice will have to prove its effectiveness before being generally included as a farmer recommendation. This would apply equally to each new entity to be placed in the system. We would then cease to make excessive claims about new pesticide control programs until they have demonstrated their efficacy in such a system. Industry, in its own interest, will do this kind of research. However, for overall recommendations to the farmer, it becomes obvious that such research needs to be done under public support finances.

The research suggested above would be costly and complex. Therefore, adequate information must be developed on a practice prior to including it in a total technological involvement program. The experiment station supplemented with industry research is well suited to the development of this early information--as is the case today.

A chemical synthesis program for new herbicides should be carried out by industry. Synthesis programs aimed at patenting chemical entities are not an appropriate activity for public supported institutions. A synthesis program done in a university under the direction of a private company and primarily for the benefit of a private company should not expect public support. Early screening programs done under similar arrangements should also not be done at public expense. Few, if any, public supported institutions are organized with adequate organic chemists and biologists to determine activity in an entire chemical series and, also, have well trained patent attorneys to suggest synthesis programs, to write the patent, and then to protect it. A poorly conceived program may succeed in "muddying the water" sufficiently to destroy all commercial interests in the area. With development costs as they are today, no company can bear the development costs without some patent protection, and under conditions that give the full seventeen years originally intended in the patent laws. Thus, an important discovery may never be developed if it lacks full and complete patent protection.

It should be obvious to everyone that the patent system must be allowed to function fully. Without such protection, research and development monies will disappear. Not only will there be no new products for industry, but there will be no new products for agriculture, and mankind will not have the benefits of cheaper and more abundant food supplies.

I was surprised to learn the amount of "mechanism of action" and other so-called "basic" research that goes on in industry. Here it is taken for granted that this type of research must be done to gain label clearances, and it may be helpful in extending the chemical activity of any one chemical series. Much of industry's research is not published due to the fact it may be continuing to develop leads within the area. Public supported research should expect industry to increase its research above present levels. There is room

for both the university and industry researcher--however, there is considerable duplication of effort at this time.

Then where are we headed in the next twenty-five years? Let me summarize quickly a few of the principal points discussed:

The science of weed control is a part of an agricultural technology that is vital to our food supplies and to the consuming public. Serious food shortages could develop if this technology is destroyed. Resultant food shortages could spark serious political trouble for us, for our country, and for our way of life.

Excesses in almost any walk of life may create serious effects. Low levels of exposure of a chemical may have absolutely no effect. Excessive levels can be expected to cause serious effects. This is true whether we are talking about food, salt, lack of sleep, or herbicides. This message must get to the general public.

Every action has a risk. Many of our common foods have toxic substances far in excess of limits that are prohibited in pesticide development. If the restrictive regulations used for pesticide registration were applied to our regular food supply, many of our foods would be outlawed. We need realistic standards that guarantee safety in our food. Both are possible.

Misunderstanding is the basis for much of the criticism that is made toward herbicides. The misunderstanding may lead to expensive regulations that will require considerable numbers of weed science people. Such people are not now available.

Certain agribusinesses are almost sure to develop, especially in custom application, as sources for information and as management sources.

University education in weed science should be immediately expanded at both the undergraduate and graduate levels. Industry cannot effectively contribute to this area, other than through our contacts with university administrators and budget officials.

Adult education through the extension service will continue to be important. There is probably little difference between the personality of a really good salesman and a good extension worker.

Total Technological Involvement involves the latest technical advances in varieties, fertilizers, herbicides, insecticides, fungicides, etc. all researched--together to determine the contribution of each entity. This is an area that is especially well suited to the land grant university.

If farmers are to continue relying upon university recommendations--some states may need to do a better job in the weed science area. Where this is not done, farmers will lean toward industry for their information.

Chemical synthesis programs leading to patents are best left to industry. A synthesis program and early screening program done in a university under the direction of a private company and for the benefit of that private company should not expect public support for that program.

Mechanism of action studies and other so-called basic studies are carried on by the university, the USDA-ARS, and industry researchers. Probably all will continue in spite of certain areas of duplication.

For the sake of mankind, it would be well if we could work ourselves out of our jobs. However, the weed problem is more durable than all of us combined. The field of play and the emphasis may change-- but it will remain a professional challenge in spite of the best talents in industry, the university, and the Agricultural Research Services of USDA.

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MINUTES OF THE BUSINESS MEETING
SOUTHERN WEED SCIENCE SOCIETY

Statler Hilton Hotel
Dallas, Texas
January 19, 1972

President Joseph R. Orsenigo called the meeting to order at 2:00 P.M. He reported that the minutes had been printed in the 1971 SWSS Proceedings and asked if there were changes. None were suggested and the minutes were accepted as printed.

LOCAL ARRANGEMENTS COMMITTEE REPORT - Presented by A. J. Becton

The committee met August 26, 1971, at the Statler Hilton, following an officer's planning meeting. Members checked out hotel facilities, made specific plans, and agreed to the following assignments: Pat Kerr - Ladies Program; Bill Kirby, Larry Speer, Glenn Blake, Harold Myers - audio equipment, signs for each section, visual aid equipment; Jerry Walker - typists and typewriters; Don Smith - pressroom, placement room, information table and registration coordinator; V. S. Searcy - society luncheon; and Jim Becton - room registration, liaison with Dallas Convention Bureau and hotel personnel, grad student housing, VIP registration, etc.

No further meetings were held until January 13, 1972. All further liaison between committee members and society officers was being maintained by personal contacts and phone.

Final arrangements were made in the January 13 meeting which was a meeting between our Committee and all department managers of the hotel.

Details of meeting room schedules and functions are listed in the printed program.

No appreciable problems by registrants in regard to hotel facilities have been brought to our attention.

We appreciate the willing response of the several companies who have furnished part-time secretarial assistance, and of those companies and institutions who have supplied visual aid equipment and typewriters. Further, we especially appreciate the assistance of the personnel of the Statler Hilton Hotel whose willingness to cooperate made this committee's job infinitely easier.

At the annual meeting we registered 744 persons, 39 being students. There were 200 luncheon tickets sold, and 6 ladies registered.

Respectfully submitted,

Glenn Blake
Larry Speer
Harold Myers
Pat Kerr
Bill Kirby
Jerry Walker
Don Smith
V. S. Search
Jim Becton, Chairman

The acceptance of this report was moved, seconded, and passed.

AD HOC COMPUTER COMMITTEE REPORT - Presented by J. B. Weber (Representative from Southern Region to WSSA)

We are presently collecting ideas and information concerning the kinds of data that should be put on computer cards. We are looking into a scheme whereby herbicide names and structures might be coded and put on cards. Some data which might be put on the cards could include the physical and chemical properties of herbicides, species of weeds controlled, crops used on, rates used on various soil types, etc. We welcome your suggestions.

Respectfully submitted,

J. B. Weber, Chairman

PROGRAM COMMITTEE REPORT - Presented by A. F. Wiese

The Program Committee was made up of the sectional chairmen of the 9 sections: D. T. Smith, Section I; T. J. Monaco, Section II; R. W. Bovey, Section III; H. H. Ezzard, Section IV; R. W. Couch, Section V; Bryan Truelove, Section VI; D. N. Weaver, Section VII; W. W. Allen, Section VIII; and W. L. Barrentine, Section IX.

I very much appreciate the efforts these men put forth in making our 25th Anniversary meeting the most outstanding program to date. More than likely most of you were contacted by one or more of the section leaders. As you can tell from your program, the committee worked hard, and we have a total of 204 papers. This is over 60 more than in 1970. Over 60 papers were submitted to the Agronomic section, and although we have 2 sessions on Thursday morning, some of the papers had to be moved to other sections. We also had to move some of the 28 graduate student papers in order that the judges could hear them. I apologize if any hardship is experienced because of these changes. The number of papers as printed in the program in Section I through IX, respectively, are 57, 16, 28, 14, 25, 7, 5, and 15.

Our general session theme is "After a Quarter Century of Weed Control - What's Next?". Our featured speakers on the general session other than, Dr. James G. Wilson, keynote speaker, are Dr. Orsenigo, our president, and Drs. Davis and Klingman, past presidents of the Society. Our special program on Wednesday evening also features Dr. Darrow, one of our past presidents.

The Program Committee expresses our appreciation to our special speakers and all others who are presenting papers at this meeting.

Respectfully submitted,

A. F. Wiese, Chairman

The adoption of this report was moved, seconded, and passed.

RESEARCH COMMITTEE REPORT - Presented by Turney Hernandez

The 1972 Research Report was developed through the efforts of 26 project and sub-project chairmen. It contains 247 pages and there were 147 contributors. Progress was made towards standardization of the product by following WSSA standards.

The Executive Board has approved 3 year terms for project chairman with terms of office expiring following submission of the complete report.

Respectfully submitted,

Turney J. Hernandez

The acceptance of this report was moved, seconded, and passed.

EDITOR'S REPORT - Presented by A. D. Worsham

The 1971 Proceedings were received from the printer on June 7, 1971 and were finished mailing to the 1971 Conference registrants, standing orders, special orders, and sustaining members by the first week of July. Letters were also sent to Sustaining Members expressing appreciation for their support of the Society.

The Proceedings were late in being printed and mailed again in 1971, mainly because of the difficulty in getting some of the General Session papers and committee lists submitted to the Editor. One of the General Session papers was not received until early March and indexing could not be completed until the papers were in. One committee list was not received until early April. Sixty-six letters were written in all concerning missing papers, retyping, etc.

In an effort to help ensure that all papers would be submitted and in proper form at the 1971 Conference, the Editor asked all Sectional Program Chairmen to send a letter to all contributors to their sections asking them to be sure to turn in a paper, typed to specifications at the time of presenting the paper. After the conference, only 70 papers were acceptable. Thirty-six

had to be retyped and 21 were not turned in at all. The Editor usually allows a grace period of a week or two and many of the papers were mailed during this period as is usually done. Some of these even had to be retyped. If the Proceedings had been prepared for the printer as received immediately after the conference, it would have been only 55% complete. In this case, the Editor made a decision in favor of completeness and quality instead of immediacy.

It is urged that all persons concerned - Sectional Chairmen, authors, officers, and especially the General Session speakers - make every effort to get papers submitted on time and in the proper format. This would help the Editor to be able to mail a complete Proceedings early each year.

The 1972 Research Report copy was received on December 1 and was delivered by the printer on January 14, 1972. Nine-hundred copies were dispatched to Dallas, Texas by air freight for issue at the 25th Conference.

Data on items published during the term of the retiring editor are as follows:

Item	No. Resistrants	No. Published	Pages Per Book	Total* Cost	Cost* Per Book	Cost* Per Page
22nd Proceedings	792	1200	464	\$3720	\$3.10	0.67¢
23rd Proceedings	814	1200	430	4130	3.44	0.80
24th Proceedings	852	1200	452	4280	3.57	0.79
23rd Res. Repts.	814	1400	159	2154	1.54	0.97
24th Res. Repts.	852	1200	243	2452	2.02	0.83
25th Res. Repts.	744	1200	247	2513	2.09	0.85

*Printing costs only

Printing costs during the three-year term were slightly below those for the previous editorial term in spite of rising costs in general. Expenses for the Editor's office (excluding printing costs) for the 1969-1971 period were \$3400, or an average of \$1133 per year, well below the amount budgeted for the Editor. Income from sales of Proceedings and Research Reports and other financial details are covered in the Secretary-Treasurer's report.

The correspondence load, keeping up with orders, answering inquiries, handling the invoices, payments, and work in keeping the files up to date as to paid and unpaid orders continues to increase for the Editor. Confusion over correct addresses and to whom checks should be mailed as the Editors change continues to mount. Correspondence from subscription agencies, booksellers, and foreign countries is still sent to former officers such as to Walt Porter in Mississippi, Hanley Funderburk in Alabama, Henry Andrews in Tennessee, and about one-third of the correspondence is addressed to Phil Upchurch in Missouri. This adds to lost orders, payments and further general confusion.

The numbers of Proceedings and Research Reports on hand as of January 24, 1972 are as follows:

<u>Year</u>	<u>No. Proceedings</u>	<u>No. Research Reports</u>
1971	121	101
1970	30	21
1969	51	46
1968	64	68
1967	43	35
1966	41	40
1965	32	--
1964	29	--
1962	--	1
1958	1	--
1954	2	--

If any members have any publications on hand predating this list which they have no further need for, the Editor's office can use them to fill orders for back issues.

The number of publications sold during 1971 were as follows: under 165 standing orders, 180 - 1971 Proceedings and 167 - 1971 Research Reports were sold. These publications were sent to 34 foreign countries and to 33 states. Under special orders, 36 - 1971 Proceedings and 23 - 1971 Research Reports were sold. There were 38 Proceedings of earlier years and 14 Research Reports of earlier years sold. These orders went to 9 foreign countries and 17 different states.

At this time, there are 22 - 1971 Standing Orders not paid for, 16 - 1971 Special Orders unpaid, 5 - 1970 Standing Orders, and 2 - 1970 Special Orders unpaid. One 1969 Standing Order has not been paid. All of these records, publications, files, stamps, other possessions entrusted to the Editor and a list of operating procedures have been transmitted to the new Editor.

The Editor recommends that the Executive Board consider making the editorship a permanent position with an honorarium being paid. This would probably necessitate finding a retired or semi-retired person who should have adequate time to devote to the job and carry it out properly.

Respectrully submitted,

A. D. Worsham

The acceptance of this report was moved, seconded, and passed.

SUSTAINING MEMBERSHIP COMMITTEE REPORT - Presented by Wm. D. Hogan

The Sustaining Membership Committee contacted 276 companies inviting their support as sustaining members. The currently active sustaining members were invoiced with a cover letter indicating our appreciation for their continued

support of the Southern Weed Science Society. Non-sustaining firms were sent a letter of invitation and an Application for Sustaining Membership.

The Committee spent \$41.60 for the printing of our invoices and \$19.44 for postage for a total expense of \$61.04.

In a year that has witnessed many changes in the economic picture many firms have reduced their contribution budgets, other firms have consolidated and/or merged their activities, and still other firms have ceased their business activities in fields closely allied with our Society; we have 102 sustaining members this year contributing a total of \$5,110.00 to date.

Respectfully submitted,

Olin Andrews
Leonard Lett
Wm. D. Hogan, Chairman

The acceptance of this report was moved, seconded, and passed.

Claude Derting inquired about the number of sustaining members last year. It was pointed out that this represents a decrease from the 112 members last year.

SECRETARY-TREASURER'S REPORT: Paul Santelmann presented the financial report for the Society fiscal year of June 1, 1970 through May 31, 1971.

Balance Sheet, 1970-71 Fiscal Year

Assets on May 31, 1970	\$ 29,676.72
Income for 1970-71 FY	+ 20,681.38
Expenses for 1970-71 FY	- 12,203.99
	<hr/>
Total Assets on May 31, 1971	\$ 38,154.11

1970-71 Breakdown

Receipts for 1970-71 FY:

Sale of research report and proceedings	\$ 4,124.95
Banquet tickets	1,545.00
Registrations	8,133.00
Sustaining membership dues	5,735.00
Interest income	1,143.43
	<hr/>

\$ 20,681.38

Expenditures for 1970-71 FY:

Printing of publications	\$ 6,871.98
Credit to editor account	1,000.00
Secretary-Treasurer	566.85
Program	1,035.74
Officers	339.35
Local arrangements	1,582.47
Student interest	471.01
Public relations	336.59

\$ 12,203.99

Respectfully submitted,

Paul W. Santelmann

The acceptance of this report was moved, seconded, and passed.

In December, 1971 the books were audited and the following received:

I have reviewed the records of the Southern Weed Science Society for the year ended May 31, 1971.

All disbursements were examined and are supported by proper invoices and/or paid receipts. Likewise, all cash receipts were compared to the deposits in account number 1-84-055 of the University Bank, Stillwater, Oklahoma.

All of the cash receipts and disbursements included in the above review have been recorded accurately on the records of the Southern Weed Science Society.

/S/ Ronald L. Fairchild,
Accountant

FINANCE COMMITTEE REPORT - Presented by Turney J. Hernandez

Our society continues in excellent financial shape. No changes in dues or publication prices are planned for our next fiscal year.

Our budget varies only slightly from that of our previous year. Budgeted receipts total \$20,000 versus \$24,600 and expenditures \$16,690 versus \$22,370 for our last period. This budget has been approved by the Executive Board.

Respectfully submitted,

Turney J. Hernandez
J. B. Baker
D. D. Boatright
W. D. Hogan
P. W. Santelmann
A. D. Worsham

The acceptance of this report was moved, seconded, and passed.

AUDITING COMMITTEE REPORT - Presented by Wayne G. Wright

The Auditing Committee met on January 17, 1972, for the purpose of reviewing the financial records of the Secretary-Treasurer and Editor of the Southern Weed Science Society for the fiscal year 1970-71. An official audit of the Secretary-Treasurer's books was completed by Ronald Fairchild, accountant, Stillwater, Oklahoma, for the fiscal year ending May 31, 1971. A copy of his report is contained in the Secretary-Treasurer's report and will appear in the Proceedings. Mr. Fairchild's audit indicated that the Secretary-Treasurer's books were complete and in order. Our findings indicate that all records are correct and in order.

All questions pertaining to the bookkeeping procedures were answered to the committee's satisfaction. However, in order to aid and expedite future auditing, the committee recommends that both the Secretary-Treasurer and Editor set up a record keeping system in a permanent record ledger and that the Editor prepare a balance sheet from his records for use by the Auditing Committee.

We, the Auditing Committee, recommend to the Resolutions Committee that a proper resolution be drawn up to commend both the Secretary-Treasurer and Editor for their services and the excellent way in which their records have been maintained.

Respectfully submitted,

V. S. Searcy
C. C. Dowler
W. G. Wright, Chairman

The acceptance of this report was moved, seconded, and passed.

CONSTITUTIONAL STUDY COMMITTEE REPORT - Presented by R. E. Wilkinson

No constitutional changes were considered requisite at this time.

Respectfully submitted,

R. E. Wilkinson, Chairman

STUDENT INTEREST COMMITTEE REPORT - Presented by Howard Greer

The Student Interest Committee revised a set of contest rules and instructions for judges, worksheet and ballot for judges, and tally sheet of ballots (copies attached) for the 1972 meetings. First and Second Place Award winners received awards of \$50 and \$30, respectively for each of the two divisions. The contest was announced in the Call for Papers. Five judges were selected for each group of presentations. The judges were as follows: Dave Weaver, James Chandler, S. J. Locascio, John Fennell, Claude Derting, Charles Rieck, Ken Savage,

Charles Scifres, J. M. McBride, and Wayne Allen. All contestants and judges were sent copies of the contest rules and instructions for judges several weeks prior to the meetings.

Twenty-eight students entered the Contest. Each division had 14 papers entered for the contest. This is the largest number of contestants that have entered the contest since it was initiated. The awards were presented at the Southern Weed Science Society luncheon. The following students received the respective awards:

Group I - Physiology & Ecology - Basic

First Place (\$50)

Name of student -- O. C. Thompson
Institution -- Auburn University
Title of paper and authors -- Effect of Six Triazine Herbicides on
Energy Relations of Sub-Cellular Organelles. O. C. Thompson
and Bryan Truelove.

Second Place (\$30)

Name of student -- Andrew Edwards
Institution -- Auburn University
Title of paper and authors -- The Effects of MSMA in a Salt Marsh
Ecosystem. A. C. Edwards and D. E. Davis.

Group II - Applied Research Group

First Place (\$50)

Name of student -- D. S. Murray
Institution -- Oklahoma State University
Title of paper and authors -- Comparative Effects of Selected
Dinitroaniline Herbicides. D. S. Murray and P. W. Santelmann

Second Place (\$30)

Name of student -- J. D. Alton
Institution -- Oklahoma State University
Title of paper and authors -- Persistence of Brush Control Herbicides
in a Blackjack and Post Oak Soil. J. D. Alton and J. F. Stritzke

Honorable Mention

Name of student -- J. E. Smith
Institution -- Mississippi State University
Title of paper and authors -- Selective Control of Smutgrass in
Permanent Pastures. J. E. Smith and A. W. Cole

Pictures of award winners were taken by the Public Relations Chairman for publicity purposes.

A Student Breakfast was arranged and provided by the Southern Weed Science Society for all graduate students attending the meetings. Graduate students who entered the Graduate Contest were also reimbursed for their lodging expenses, provided they used the facilities provided by the Southern Weed Science Society.

THE PLACEMENT SERVICE REPORT - Presented by J. B. Weber

Fourteen "Positions Desired" forms were filled out. These include personnel with the following degrees: 1 - B.S., 5 - M.S., 6 - Ph.D., and 2 - B.S. candidates were seeking research assistantships. Five people wanted positions with industry, five wanted positions at Universities, and four had no preference.

Five "Positions Available" forms were filled out. These positions wanted personnel with the following degrees: 1 - B.S., 1 - M.S., 1 - Ph.D., and 2 research assistantships were listed. All of the available positions were with industry.

Respectfully submitted,

Howard Greer, Chairman
S. J. Locascio
C. E. Rieck
D. T. Smith
J. B. Weber
D. N. Weaver

The acceptance of this report was moved, seconded, and passed.

LEGISLATIVE COMMITTEE REPORT - Presented by James Taylor

H. R. 10729 (formerly H. R. 4152), the Federal Environmental Pesticide Control Act of 1971, passed the U. S. House of Representatives by a vote of 288 to 91 on November 9 with one amendment which empowers states to impose stronger restrictions on pesticide use than those established by the Federal Government. This bill, which has been designed to supersede the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), will essentially change the Federal pesticide legislation to include regulation of pesticide use as well as pesticide labeling.

Provisions as it now stands include the establishment of two categories of pesticide use - general and restricted. Because the restricted pesticides will have to be applied by certified applicators, the bill also establishes a Federal - state administrative system to carry out the program. The Federal government will set the standards, the states will certify and supervise the applicators. The bill further provides for uniform labeling and packaging under Federal standards; and will require all products to be Federally registered, intrastate as well as interstate.