

## Agricultural Communications Efforts During Florida's Medfly Infestations of 1997 and 1998

Ricky Telg

Mary Gail Dufresne

Follow this and additional works at: <https://newprairiepress.org/jac>



This work is licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 4.0 License](https://creativecommons.org/licenses/by-nc-sa/4.0/).

### Recommended Citation

Telg, Ricky and Dufresne, Mary Gail (2001) "Agricultural Communications Efforts During Florida's Medfly Infestations of 1997 and 1998," *Journal of Applied Communications*: Vol. 85: Iss. 1. <https://doi.org/10.4148/1051-0834.2158>

This Research is brought to you for free and open access by New Prairie Press. It has been accepted for inclusion in *Journal of Applied Communications* by an authorized administrator of New Prairie Press. For more information, please contact [cads@k-state.edu](mailto:cads@k-state.edu).

---

## **Agricultural Communications Efforts During Florida's Medfly Infestations of 1997 and 1998**

### **Abstract**

This case study examined the communications methods and results of Florida's agricultural communicators during the Mediterranean fruit fly infestations of 1997 and 1998. Eight agricultural communicators actively participating in the communications efforts during the infestations were interviewed. Findings included the following: activist groups were able to "strike first" and control the media messages for a period of time that was damaging to the agricultural industry's efforts of spraying malathion, the agricultural community often discounted activists as extremists whose arguments were invalid and without merit, and personal relationships and personal contacts were essential for the agricultural community to calm the public's environmental and health fears.

# Agricultural Communications Efforts During Florida's Medfly Infestations of 1997 and 1998



Photo not available

**Ricky Telg**  
**Mary Gail Dufresne**

---

Mary Gail Dufresne is community relations director for the Winter Park Public Library in Winter Park, Fla. Mary Gail Dufresne

## Abstract

This case study examined the communications methods and results of Florida's agricultural communicators during the Mediterranean fruit fly infestations of 1997 and 1998. Eight agricultural communicators actively participating in the communications efforts during the infestations were interviewed. Findings included the following: activist groups were able to "strike first" and control the media messages for a period of time that was damaging to the agricultural industry's efforts of spraying malathion, the agricultural community often discounted activists as extremists whose arguments were invalid and without merit, and personal relationships and personal contacts were essential for the agricultural community to calm the public's environmental and health fears.

In 1997 and 1998, Florida's agricultural community was forced

was a graduate student in the University of Florida's Department of Agricultural Education and Communication when this study was conducted. Ricky Telg, assistant professor in the University of Florida's Department of Agricultural Education and Communication, has been an ACE member for seven years. This article is adapted from a paper presented at the Southern Association of Agricultural Scientists Conference in Lexington, Kentucky, February 2000.

about the Mediterranean fruit fly (Medfly) and the control methods used to eradicate the pest when the Medfly threatened the state's \$6.8 billion agricultural industry. Activist groups were able to get the attention of the mass media by challenging the use of the insecticide malathion, asserting that the chemical poses health and environmental risks. Local and state media picked up the story of both the Medfly infestation and subsequent protests, often leading to front-page stories. The activists also pressured governmental agencies to revoke the temporary permit allowing the use of aerial malathion bait spray, the most efficient and effective means of eradicating the destructive fly, according to state agricultural officials. Agricultural communicators representing both private industry and the governmental agencies legally charged with eradicating the pest, defended the use of malathion as part of an overall Medfly eradication plan designed to protect the economic contributions made by agriculture as well as the landscapes and gardens of Floridians.

The agriculture industry faces problems that no other industry faces and must communicate about a staggering number of complicated issues; yet there remains a lack of documented cases from which industry professionals and students can learn. Therefore, the purpose of this case study was to examine Florida agricultural communicators' communications efforts and methods during the Mediterranean fruit fly infestations of 1997 and 1998.

## **Methods and Procedures**

This qualitative study was conducted using a descriptive case study technique in which a detailed account of the selected phenomenon—the agricultural community's communications efforts regarding the 1997 and 1998 infestations of the Mediterranean fruit fly—is presented. A primary advantage of the case study methodology is that it allows the researcher to obtain a wealth of information and provide detail about this research topic (Wimmer & Dominick, 1987). Merriam (1998) observed that a case study design is employed to gain an in-depth understanding of the situation and that “the primary interest is in process rather than outcomes, in context rather than specific variables, in discovery rather than confirmation” (p.19).

The data-gathering method was face-to-face interviews conducted during fall 1998. Eight interviews were conducted with members of the agricultural community who actively participated in the communications regarding the 1997 and 1998 Medfly infestations. The communicators represented industry associations, Florida Cooperative Extension at the University of Florida (UF), the U.S. Department of

Agriculture, and the Florida Department of Agriculture and Consumer Services (DACS). Professors in UF's Department of Agricultural Education and Communication, and in the College of Journalism and Communications; and public relations professionals representing the Florida Agriculture Institute, an organization of agricultural communications professionals, refined the questions before the eight interviews were conducted. All interviews were recorded, transcribed, and analyzed.

In addition to the primary data gathered, secondary sources of information were reviewed and used to develop the interview questions, as well as to fill in the details of the events that occurred during the Medfly infestations of 1997 and 1998. An informal content review (not content analysis) was conducted of newspaper coverage related to the Medfly infestations, as well as reviewed memos, letters, electronic mail, and trade publications. The purpose of this review was to become as familiar as possible with what was presented in the mass media as well as to be able to understand and respond to any comments made about mass media coverage by those interviewed. In reporting the findings, the interviewees were randomly assigned pseudonyms so that their comments could be referenced without revealing their identities.

## **Background**

### ***The Infestations***

In late May 1997, a Mediterranean fruit fly was found in a trap in Hillsborough County, Fla. Aerial spraying of malathion began June 5 over the town of Brandon, near Tampa. At that time, state agriculture officials assured the public about the safety of malathion. "Malathion is just about the safest of all pesticides being used," said a biologist with the state Agricultural Department's Division of Plant Industry ("Attack on Medfly set to begin," 1997). By mid-June, the spray area had expanded to 300 square miles and Commissioner of Agriculture Bob Crawford publicly declared an "all-out assault" on the Medfly when it was detected in Lakeland, the heart of the state's citrus production area, between Tampa and Orlando. Whenever Medflies are detected in the United States, an immediate quarantine is put into effect, meaning fruit cannot be moved out of the area until it has been inspected and treated appropriately to ensure compliance with regulations—which may mean cold storage, drying, canning, processing, fumigation, limitations on open transportation and open display of produce and lasts approximately 46 days after the last malathion application. Food grown within 4.5 miles of a Medfly find

falls under quarantine restrictions. By early August, the Florida citrus industry began to worry that the quarantine would negatively impact early citrus crops in the Tampa-Lakeland area, especially since the mandatory fumigation associated with the quarantine could cost several hundred dollars per truckload of fruit (Sloan, 1997). The 1997 infestation ended with 748 flies having been trapped in five counties, primarily in the central Florida area between Tampa and Orlando; and with 82 different crops being quarantined in areas where Medflies were found.

A second infestation outbreak in 1998 began with the discovery of a Medfly in south Florida's Dade County (Miami) on April 1; ground application of malathion began almost immediately. The 1998 infestation also flared up in rural parts of Lake and Manatee counties. (These counties are northwest of Orlando and south of Tampa, respectively.) Although the eradication program was initially limited to ground application of malathion in all Medfly-infested counties, the Environmental Protection Agency (EPA) approved a request to aurally apply malathion over areas in Manatee County, just south of Tampa.

### ***Communications and Controversy***

CRAM! (Citizens for Responsible Application of Malathion!), a Hillsborough County-based activist group, formed in June 1997 in response to eradication plans. Although membership was initially small, it swelled to hundreds in just two weeks ("Another Medfly found, spraying in largest citrus county to begin," 1997). CRAM! members were vocal opponents of malathion, particularly when sprayed aurally. On its Web site, CRAM! states, "The State of Florida is trying to save the citrus industry at the expense of the land and our lives" (CRAM!, 1998). The organization encouraged citizens to join CRAM! because "every single person who helps will aid us in stopping this wholesale poisoning of the people, the animals, and the land for the sake of the orange juice and petroleum industries" (CRAM!, 1998). The group collected signatures on petitions of protest against the eradication program, eventually succeeding in getting an administrative judge to invalidate the emergency rule that allowed the malathion application ("Judge rules against Medfly spraying," 1997).

Although less mentioned in the newspapers in 1997, SCRAM (Sarasota/Manatee Citizens Rally Against Malathion) was more successful in preventing aerial application of malathion. SCRAM managed to raise enough opposition to aerial malathion spraying that state officials agreed only to apply malathion to the ground 200

meters around the finds (Hollingsworth, 1997a). SCRAM paid to fly in industry experts from California to discuss health and environmental issues related to the eradication program. One of these experts was a California State University biologist who told the U.S. House of Representatives that Florida's Medfly eradication plan was "scientifically corrupt" (Hollingsworth, 1997a).

During the summer of 1997, newspaper articles—featuring complaints from parents, people with chemical sensitivities, organic farmers, and tropical fish farmers—about malathion use began regularly appearing in newspapers. As spraying reached Tampa's most populated areas, the hotline established for public questions and comments was receiving up to 1,000 calls each day ("State expands spraying area as aerial war reaches downtown Tampa," 1997), though none of the calls resulted in a confirmed case of malathion poisoning. Some state health officials asserted that state agriculture officials had not notified them before the eradication program began. (Hollingsworth, 1997b). Toward the end of the 1997 infestation, several newspaper articles were highly critical of malathion use and provided an opportunity for those who believed that their health had been impacted by malathion to air their complaints. Several articles in *The Tampa Tribune* asserted that malathion caused health problems in children.

The 1998 infestation was by far more widespread and involved more than twice the number of flies than were found in 1997, but most flies in 1998 were found in rural areas. Counties involved in the 1997 infestation were predominantly urban. However, when it was announced in 1998 that aerial application would take place in urban areas of Manatee County, residents "screamed and hissed" at a panel of state agriculture and health officials (Kamins, 1998). SCRAM, teaming up with a group called Floridians Against Chemical Trespass (FACT), unsuccessfully attempted to take legal action to stop the spraying. Matthew McMilliam was the attorney for both CRAM! and SCRAM. In a letter to Marcia Mulkey of the EPA's Office of Pesticides, McMilliam stated, "My clients cannot think of anything which would allow them to accept the continued use of malathion." (Matthew McMilliam, personal communication, April 20, 1998). A flier was distributed by an organization identifying itself as "Kids Who Care" that described malathion as "a nerve gas" and listed symptoms of toxicity that are not consistent with those listed in medical or scientific literature for malathion (Fuller, 1998).

## ***Issues Management and Risk Communications***

The Medfly infestations required agricultural communicators to practice issues management to address core concerns raised by the public and media about Medfly eradication. In their discussion of issues management, Heath and Cousino (1990) noted that certain issues management functions were necessary for a company to operate without conflict from the public policy environment and to foster positive relationships with publics. These functions are:

1. involvement of public policy experts in strategic business planning and management,
2. issue communication,
3. issue monitoring and analysis, and
4. efforts to meet changing standards of corporate social responsibility.

Although issues management may be the product of activism, Gaunt and Ollenburger (1995) point out that it is a proactive strategy that tries to identify issues and influence decisions regarding them before they can cause problems. In the case of the agricultural community and the Medfly infestation, issues management would most likely take the form of managing environmental and public health issues before an infestation put them in the spotlight. Guth (1995) observed that an inappropriate response to a crisis could pose tangible losses, such as damage to property or lost revenue, and intangible losses, such as a loss of public confidence in an organization.

Much of the agricultural communicators' efforts also fell into the category of risk communications, which is communication specifically designed to convey messages about risks and the potential benefits from those risks. Public relations practitioner Adams (1992-93) made the following observations about how the media react to risk communication: a) the news media will generally ignore your organization's experts in favor of government or activist sources, b) journalists often lack a knowledge of the environmental and/or scientific facts surrounding a particular risk, and c) a tendency exists for journalists to personalize a risk-related story. Adams (1992-93) asserted that if a practitioner is able to anticipate how and why journalists react to risk issues, it may be possible to "anticipate and/or mitigate damage caused by inaccurate or incompetent reporting" (pp. 29-30).



## Findings

1. **The Medfly infestation and resulting media coverage, particularly the coverage published in *The Tampa Tribune*, had significant impacts on the agricultural organizations affected.**

Andrew, an agricultural communicator, described the impact of the media on the public's perception of the problem in the following way:

The media were able to strongly convince the public that malathion was going to kill them, malathion was going to cause damage to their children, they were going to have deformed babies in five years, it was going to get in the water supply, and everyone was going to be drinking malathion.

Many of the communicators said one particular environmental reporter for *The Tampa Tribune* wrote the most negative media reports. All of the agricultural communicators said this reporter's aversion to chemical control methods was reflected in her writing and had a significant impact on how the general public—particularly those around Tampa—perceived the chemical control program. As another agricultural communicator, Catherine, said:

If you've read a lot of (this reporter's articles), you know she was a major factor in the problem. The fact that you had a reporter who wanted to spend so much time and clearly showed a bias in her presentation of the story had a huge impact on the public's perception and the political perception of the issue.

All of the communicators cited *The Tampa Tribune's* coverage of the issue as a major factor in the communications crisis that surrounded the 1997 Medfly infestation. The agricultural industry's communicators also said the groups organized against the use of malathion were able to manipulate the media in such a way that the negative impacts were greater. Mary Ann, an agricultural public relations practitioner, said:

[The activists'] message was simple, and they were loud, and they were very savvy with the media. They held up the petitions along the wall of the county commission meeting in Tampa so the TV cameras would get them on screen looking like the victims. They were holding rallies and were very visual. They would hold taped-together petitions that would run 30 feet long. They knew how to manipulate television, and they had some very willing participants in the newspapers. I would say that CRAM! and, to some extent SCRAM down in Sarasota, had a huge impact on the public's perception of the issue.

## **2. The activist groups were able to strike first and control the media message for a period of time that was damaging to the agricultural industry.**

Most agricultural communicators indicated that activist groups were able to grab the attention of the media and promote their messages, unanswered by the agricultural community. Andrew aptly put it, "We were unprepared, and they had their facts together and their people speaking before we even realized what was going on." Another communicator, Alex, said, "In 1997, we were late in understanding the level of public concern in the Tampa area—probably five weeks late. We were not focused early enough on the (public relations) needs of that program."

A few of the communicators said they might have initially underestimated the potential for a public relations crisis because the activist groups were relatively small. The communicators expressed their belief that although the activist groups were not large, their level of organization allowed them to get out in front of the issue and control the messages. Alex said:

In proportion to their numbers, I think these groups had an incredible impact. Early on, they gained credibility with the media. Every time the USDA and the Department of Agriculture and Consumer Services would make a statement, CRAM! was recognized for the other side.

They got a lot of ink. I think it was out of proportion to their numbers.

Communicators also expressed that one reason their organizations' efforts were not immediately directed toward public relations

for the Medfly eradication was because they were busy with the complex process of planning and implementing the eradication program itself. Catherine said:

I think the big communications error in 1997 was that project officials did not realize what the public relations downside of the whole Medfly program could be until late in the game. Initially, there were not enough communications officers and regular communication briefings or releases in place.

**3. The agricultural communicators often dismissed activists as extremists whose arguments were invalid and without merit.**

Throughout the interviews, many communicators referred to activists, protesters, and anyone against the use of malathion by terms such as "loonies," "crazies," and "tree-huggers." The overall attitude was that the people who were against the application of malathion were misinformed and "anti-agriculture." When addressing this issue, Catherine said:

One of the criticisms I would have for my own industry is that there was a lack of appreciation for the personal convictions that the people who were doing this had. They weren't just people who were misinformed or ignorant or had a hatred for the industry. A lot of them were intelligent, compassionate people who maybe had farming in their history, but they had genuine, sincere, heart-felt concern about their families' health. And there were some people whose heads weren't screwed on tight all the way, too. But at least half of the group I witnessed were reasonable people who believed in their hearts that something was wrong. And we (agriculture) had to reach out to those people as an industry and not just roll over them.

**4. Although the agricultural communicators perceived that the Medfly eradication program and the associated agriculture industry received negative press, the mass media also**

**delivered important, positive messages to the public for the agricultural community.**

All of the communicators agreed that although the media, especially The Tampa Tribune during 1997, carried negative messages about the eradication program, the media also carried important messages for the agriculture industry to get to the general public. Agricultural communicator Mary Ann said newspapers other than The Tribune were more balanced in their approach to this issue. She said the newspapers in Orlando, Lakeland and St. Petersburg “didn’t have the alarmism in the headlines or in the stories that we saw in The Tampa Tribune. They made more of an effort to get agriculture’s side of it.” Broadcast and print media discussed the potential financial impact to the state’s economy if the eradication was unsuccessful, gave information about safety precautions to be taken during the malathion applications, and disseminated the spray schedules. Catherine said the media outside of Tampa “covered every angle possible without doing a commercial for the industry,” such as the potential economic impact of the Medfly infestation on citrus growers and the logistics of spraying schedules.

**5. None of the agricultural communicators’ organizations had a plan to specifically address communication needs related to a Medfly infestation; general crisis communication plans also were absent from most of the organizations.**

Only one of the interviewees belonged to an organization that had what could be considered a formal crisis communication plan in place. Others had what they considered to be communications plans, but those generally consisted just of phone lists and the names of important contacts. Half of the communicators said they believed that plans were difficult to develop because “each crisis is different.” Others said that they “just knew what to do when situations like this come up.” The sole organization that had a communications plan developed it after a 1990 Medfly infestation. Nicole said:

The last major eradication program was in 1990 in Miami. That was the first time there was any opposition of any type. Of course, that was still very minor. And after that, we came up with a formal program for this. In fact, we trained 16 people to take homeowner calls.

**6. The individual organizations within the agricultural community were able to communicate consistent messages.**

The individual communicators sent clear and consistent messages to the public via the mass media. These messages included the economic importance of agriculture to the state's economy, the importance of agriculture to the local economy, the agricultural community's support for the eradication program, the potential for destruction should the pest go uncontrolled, and the proven efficacy and safety of the products being used in eradication.

The major factor that contributed to the consistency in messages and coordination of communication was the communicators' participation in the Agriculture Institute of Florida, an association of communications professionals actively involved in the agricultural industry. Five of the communicators were members of the Agriculture Institute's board of directors at the time of the interview, and the remaining three belonged to organizations that were represented on the board. The relationships established through participation in this professional organization formed a crucial foundation that enabled the communicators to network their communication efforts. In regards to the impact of the Agriculture Institute, Catherine said:

It was nice to know that suddenly, when DACS (Department of Agriculture and Consumer Services) called and asked, "What are we going to do?" all you had to do was run down the list of the Ag Institute's board of directors and you knew who the "A List" was. When you have a bunch of people on a list who know how to handle something like this and understand what needs to be done, that's half of your crisis plan right there. It worked quite well because we knew each other already. We understood where offices were located, who was a good writer, who was a good schmoozer, who had computer savvy to make sure the data got transmitted, and who had connections in Tallahassee.

**7. The communicators used a variety of media to get their messages disseminated, but personal relationships and personal contacts were essential in calming the public's fears.**

Television, newspapers, radio, brochures, phone hotlines, and Web sites were among media used by the communicators to get out

their messages regarding the Medfly infestations and control programs. In addition, communicators recruited farmers from affected areas to give talks about the possible impacts the Medfly would have to their industry and their livelihoods. These speakers were perceived to be quite effective since they could give first-hand testimonials regarding the need for Medfly eradication.

In at least two counties, the communicators recruited volunteers from agriculture-related youth organizations to provide free car washes to residents in sprayed areas, because the protein in the spray could damage auto paint if not washed off in a timely manner. The car washes generated good will toward the industry and the eradication program in the communities in which they were held. In addition, communicators organized “town meetings” in two counties; citizens were invited to speak with local and state officials involved with the eradication program. Communicator Michelle described her organization’s efforts by saying:

The first thing we did was to inform community groups and local officials—mayors, council members, county commissioners, state legislators—from the affected areas. After that, we held press conferences. We put out media alerts all of the time. We had town meetings. We had public meetings at local schools to explain to the community what it is we found and why we had to treat it, what we were doing, how we were doing it, and when we were going to do it. And then, if you are talking about the Tampa Medfly eradication program, we set up a command post there. And every day we had two daily press briefings to tell local radio, TV, and print reporters, what we were doing that day, what area we were going to spray the next day, and what times the sprayings would happen.

**8. Significant improvements were witnessed in the agricultural community’s communications efforts during the 1998 infestation when compared with its efforts during the 1997 infestation.**

All of the communicators agreed that the communications efforts during the 1998 infestation were much more effective and better organized than those in 1997. The communicators believed that

lessons learned by the USDA and DACS during the 1997 infestation improved the communications efforts in 1998. The biggest difference was that the 1998 communications efforts began long before any spraying took place. Communities were informed and consulted prior to the application of malathion. Nicole, a communicator for a governmental agency, said:

We learned that not only do people want to know what's going on in their community, they also want to talk to you about it. They want to ask you questions. In 1998, we had public meetings in all of the communities before we did anything.

Another important difference that likely contributed to less public outcry and negative publicity in the mass media was that one of the primary areas affected by the 1998 infestation was a rural community that had a stake in the agricultural health of the area and was more familiar with the use of pesticides.

**9. A need was recognized for agricultural organizations to establish more proactive communications within their communities.**

Most of the communicators indicated that they see a need for more communication between agriculturists and the communities in which they operate. They stressed the importance of building "good will" in communities and gaining the trust of local citizens and governmental entities. Bruce, a long-time agricultural communicator, said:

If you have not established your reputation as an organization or as an industry that is a contributor to its community—as being a valuable asset to the community—when you are in a crisis, the community will find no reason to support you. In agriculture, I think it's especially difficult to do that because your farmers and your ranchers are the busiest people you'll ever meet. Mother Nature doesn't take week-ends off and neither do farmers, but we need for them to try, in order to contribute to the community.

## Conclusions/ Recommendations

The media's reaction to the Medfly eradication efforts is consistent with the risk communication predictions made by Adams (1992-93): the media tended to favor the activists as sources of information, particularly at the height of the controversy; journalists lacked knowledge and facts about malathion and eradication protocols; and there was a tendency for the journalists to personalize this risk-related story. Agricultural communicators who intend to be successful in avoiding communications crises can no longer afford to ignore or minimize environmental concerns. Not only must they closely monitor the activity of activist groups in their localities, but also in many cases they must act as advisors to the leadership of their organizations regarding potential public relations pitfalls that may be associated with some courses of action.

A lack of crisis communication plans forced the agricultural communicators to "make it up as they went along." Had they already developed plans, they may have been able to communicate faster initially and with more precision. In addition, the fact that few of the communicators adequately documented their communications efforts during the two infestations is a significant opportunity lost.

A lack of issues management, monitoring, and analysis hampered the agricultural community's ability to communicate about Medfly eradication in a timely manner in 1997. Although environmental issues have become prominent in the news media, the communicators were caught unaware when activists organized and protested the use of malathion in urban areas. The activists were able to establish their position in the media unopposed for a period of several weeks. Incorporation of lessons learned during 1997 led to improved communication efforts during the 1998 infestation. USDA and DACS became proactive in their communications efforts in 1998. It would be beneficial for communicators from all aspects of the agricultural industry to meet and establish specific responsibilities for both public and private entities prior to pest infestations. In addition in 1998, state and federal agencies employed communications methods that provided more input and interaction from the affected residents.

The personal relationships and pre-established professional network in the Florida Agriculture Institute was a key factor that allowed the communicators to provide consistent messages as soon as it was determined that outside organizations were needed to supplement the government's communication. Participation in this type of professional association is highly recommended for all agricultural communicators.



Based on the findings of this study, it is recommended that the agricultural industry needs to build community "good will," in order to raise awareness of the agricultural industry's significance in the communities in which it operates. These communications need to be ongoing and should not end when a crisis is resolved.

Also, it is recommended that agricultural communicators take a close look at the demographics and the motivations of the activists involved in protests pertaining to environmental or health-sensitive issues, such as the application of malathion or other chemicals. From mandated recycle bins in offices to increased demand for organically grown produce, signs point to a public that is more aware than ever of factors impacting the environment. Dismissing environmental activists as "loonies" and unreasonable people or discounting their points of view because of a perceived lack of agricultural knowledge has the potential to distance agriculture from mainstream society.

## Key Words

Crisis communications, issues management, public relations, activism/activists.

## References

- Adams, W.C. (Winter 1992-1993). The role of media relations in risk communication. *Public Relations Quarterly*, 37, 28-32.
- Another Medfly found, spraying in largest citrus county to begin. (1997, June 21). [Online] Daytona Beach News-Journal. Available: <http://www.n-jcenter.com/enviro2/en621c.htm>
- Attack on Medfly set to begin. (1997, June 6) [Online] Daytona Beach News-Journal. Available: <http://www.n-jcenter.com/enviro2/en606a.htm>
- CRAM! Citizens for the Responsible Application of Malathion! (Accessed: May 22, 1998) [Online] Citizens for the Responsible Application of Malathion. Available: <http://www.4dproductions.com/medfly/>
- Fuller, M. (1998, May 25). [Online] 5/25/98 - Bradenton and Umatilla Mediterranean Fruit Fly update. The University of Florida Pest Alert. Available: <http://extlab1.entnem.ufl.edu/pestalert/dacs0525.htm>
- Gaunt, P. & Ollenburger, J. (Fall 1995) Issues management revisited: A tool that deserves another look. *Public Relations Review*, 21, 199-210.
- Guth, D. (Summer 1995) Organizational crisis experience and public relations roles. *Public Relations Review*, 21, 123-136.
- Heath, R. & Cousino, K.R. (Spring 1990) Issue management: End of the first decade progress report. *Public Relations Review*, 16, 6-18.
- Hollingsworth, J. (1997a). [Online] Sarasota says SCRAM and fly sprayers back off. The Tampa Tribune. Available: <http://www.tampatrib.com/news/fly1100r.htm>

- Hollingsworth, J. (1997b) [Online] Attention turns to spraying's effects. The Tampa Tribune. Available: <http://www.tampatrib.com/news/fly11018.htm>
- Judge rules against Medfly spraying. (1997, September 21). [Online] Daytona Beach News-Journal. Available: <http://www.n-jcenter.com/97/sep/21/en1.htm>
- Kamins, H. (1998, June 5). [Online] EPA OKs spraying. The Tampa Tribune. Available: [http://archive.tampatrib.com/0605\\_67.htm](http://archive.tampatrib.com/0605_67.htm)
- Merriam, S.B. (1998) Qualitative research and case study applications in education. San Francisco: Jossey-Bass.
- State expands spraying area as aerial war reaches downtown Tampa. (1997, June 17). [Online] Daytona Beach News-Journal. Available: <http://www.n-jcenter.com/enviro2/en617g.htm>
- Sloan, J. (1997, August 5). [Online] Early citrus in peril. The Tampa Tribune. Available: <http://www.tampatrib.com/news/fly1100u.htm>
- Wimmer, R.D. & Dominick, J.R. (1987). Field research and related research methods. Mass Media Research: An Introduction. Belmont, California: Wadsworth Publishing.