

Risk Perception and Communication Regarding Pesticide Use in Rural Work:

A Case Study in Rio de Janeiro State, Brazil

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In an agricultural region of Rio de Janeiro State, Brazil, rapid assessment procedures were used for risk-perception studies based on methodologic triangulation that included semi-structured interviews, participatory observations, and focus groups. Data were qualitatively categorized. Women's risk perception was prioritized, as they did not recognize some risks they were exposed to during work activities. To reach women likely to be exposed to pesticides, a photographic soap opera (*fotonovela*) was constructed in collaboration with rural workers, using community-based participatory research methods. Contents of the risk-communication strategies included the harmful effects of pesticides. Results showed that the inclusion of risk-perception studies in the development of educative and risk-communication campaigns is very important, bridging research to action. *Key words:* risk perception; risk communication; rural workers; workers' health; pesticides; women's health.

INT J OCCUP ENVIRON HEALTH 2006; 12:400-407

The impact of pesticide uses on human health, a major concern internationally, is especially evident in developing countries, where pesticides are widely used in agriculture. Developing countries represent approximately 30% of the global pesticide consumer market. Within this group, Brazil is the most important individual market, with an estimated 6.5 billion dollars per year spent on pesticides, making the country the second largest consumer of pesticides in the world.¹ It is estimated that the average exposure to pesticides in Brazil is around 3 kg per worker per year,² but in some places, such as the rural region of Rio de

Janeiro State, this indicator increases to 56 kg per worker per year.³

According to the 2005 annual report of the Brazilian Toxicopharmacological Information System (Sintox),⁴ 8,000 notifications of cases of human pesticide poisoning had been received annually. The Brazilian Ministry of Health estimates that for each reported case there are at least 50 others not reported, which increases the annual pesticide poisoning rates to 400,000 cases per year, with 2,000 deaths.

Diverse interrelated factors act as determinants of pesticide reduction or amplification impacts in rural Brazil, including 1) low educational levels of Brazilian rural workers; 2) lack of counseling/technical follow-up initiatives; 3) aggressive marketing and sales practices of pesticide producers; 4) unfamiliarity with alternative pest-control techniques; 5) lack of attention to pesticide residues and package disposal; 6) continuous uses of pesticides throughout the year, with disregard to climatic characteristics; 7) low quality of technical content of informative/educational material available to rural workers; and 8) difficulties in the communication between rural workers and technicians.

Most of the available information regarding the necessity and the correct use of pesticides for crop protection is incomprehensible to rural workers, due to the technical content of the material, which is beyond the educational level of the group.⁵ It is imperative that policies and educational strategies be implemented for risk communication approaches based on the beliefs, perceptions, and cultural background of the rural workers. It is fundamental to incorporate risk-perception approaches into these initiatives, understanding that the knowledge of the rural workers is the starting point for any educational strategy regarding pesticide uses for crop protection. The challenge is to incorporate the rural workers' knowledge, beliefs, and fears into these strategies without compromising them, interrelating individual subjectivity and social order, concrete experiences and perceptions, quantitative and qualitative data.⁶

The present article illustrates the importance of assessing environmental/health risk perception using community-based participatory strategies as the basis for developing risk-communication strategies.

Received from the National School of Public Health of The Oswaldo Cruz Foundation, Rio de Janeiro, Brazil (FP, JCM, KMR); and the Mount Sinai School of Medicine, New York, New York (FP, LC). Supported by the Center for Studies of Worker's Health and Human Ecology (Cesteh), The National School of Public Health (Ensp) of The Oswaldo Cruz Foundation (Fiocruz), and Fogarty International Center grant TW000640.

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METHOD

Study Area

The municipality of Nova Friburgo is one of the most important agricultural regions of Rio de Janeiro State. Its food production is based on family agriculture models, which are characterized by the participation of the entire family in the work process, the intensive use of the available agricultural land, and the indiscriminate use of crop-protection techniques, especially pesticides. The present study took place in two different areas of Nova Friburgo municipality, the São Lourenço Valley and the locality of Boa Esperança.

The São Lourenço Valley is one of the most productive agricultural areas of Rio de Janeiro State. It is the biggest producer of cauliflower in Brazil (production estimated at 600 tons/year) and one of the most important producers of tomatoes (1,750 tons/year), both products that demand high utilization of pesticides in their cultures. Local production is based on small lots of land (around 2 ha), multi-culture crops, and a labor force composed of 100% family members. Due to climatic characteristics and crop rotation techniques, the agricultural activity in the area is continuous throughout the year, increasing the family's exposures to pesticides, as well as environmental contamination. Previous studies estimated a consumption of approximately 8 tons of pesticides/year in the 128 family farms, or 56 kg per worker per year.^{3,7}

The population of São Lourenço Valley is estimated to be 650 people, most of them descendants of German and Swiss immigrants. Socioeconomic and political determinants such as the 60% rate of illiteracy (30% illiterate and 30% semi-illiterate, with minimum reading and writing skills), the lack of suitable technical support, and the strong influence of pesticide marketing in the area make the local population particularly vulnerable.

The locality of Boa Esperança is located 40 km east from São Lourenço Valley. Its population of about 300 includes both rural workers and tourists, who, in the mid-1980s, started buying properties in the locality as second homes. This area was also colonized by German and Swiss immigrants and it was, until the mid-1980s, one of the most important agricultural regions of Nova Friburgo municipality. In contrast to São Lourenço, its agricultural production has declined sharply since the 1980s, and now farming is almost exclusively for local consumption. Although agricultural production is much lower than in São Lourenço, pesticides are still widely used.

Risk Perception Assessment

Data collection was based on rapid assessment procedures previously tested.⁸ In brief, an exploratory

research effort consisting of initial analysis of local environmental characteristics, population diversity, social relations, work procedures, power relations, and other social aspects was completed. In this first phase, nine open interviews were conducted with community leaders (five from São Lourenço and four from Boa Esperança). Between 10 and 20 questions were asked of each key informant in the community, regarding how long they had lived in the area, possible changes in the local environment, how long they had been working in agriculture, what their work activities were, how they conducted their work, and how they worked with pesticides. Interviews were recorded and transcribed without editing. Participatory on-site observations were conducted and photographs of work processes were obtained, as well as field notations.

Based on analysis of the responses obtained in these interviews, the data-collection strategy was defined, through individual semistructured interviews. The criteria for selecting key informants were also defined and included: the length of time the respondent had been living in the region; his or her farm's productivity; whether the respondent had experienced or witnessed an episode of pesticide intoxication or knew of someone who had abandoned agricultural activities because of pesticide intoxication (of himself/herself or of a close relative). Thirty-seven key informants (27 in São Lourenço, 19–75 years-old, average 45 years, and ten in Boa Esperança, 32–72 years old, average 52 years) were selected based in the defined criteria.

Individual interviews were conducted in a private place, using a script containing 20 open-ended questions pre-tested in a previous study.⁸ To these questions, others were added, according to the progress of the interview, in a semi-structured interview approach. The first set of five questions was related to the description of local work processes. The second and the third sets (ten questions each) were about environmental and health risk perceptions. The last five questions were related to possible defensive strategies.

All the interviews were recorded on tape and later transcribed by the interviewers. Data analysis was based on qualitative discourse analysis techniques, such as content categorization, identification of recurrences, and meaning analysis.⁹ The analysis of the interviews began with a close reading, identifying the significant units. Next, analytical categories were created that allowed grouping of all the significant units with a minimum of ambiguity. Three major analytical categories were constructed in order to group data and facilitate the analysis process: risk minimization; risk denial; and defensive strategies.

Each of the three main categories incorporated sub-categories. Within the first category, it was determined: 1) whether workers knew the risks to which they were exposed; 2) the importance they attributed to each risk they identified during the interviews; 3) the determi-

nants of the importance attribution for each risk they identified during the interviews. Within the second category, it was determined; 4) whether workers knew the risks to which they were exposed, why they would deny the existence of such risks during the interviews; 5) the relationships between risk denial and work practices; 6) the determinants of risk denial. And within the third category: 7) how the workers continued working even when knowing the risks; 8) the determinants of defensive-strategies construction; and 9) the relationships between risk denial/minimization and defensive-strategies construction.

The data were grouped according to the analytical categories and subcategories, analyzed in the context of each category, and regrouped in accordance with: 1) the residence area of the key informant; and 2) the gender of the key informant.

Risk-communication Strategy Construction

Based on the results of the risk-perception assessment, a risk-communication strategy focused on women's participation in work was developed.

Using the categorized database, a theatrical sketch script about a fictional contamination episode involving a woman farm worker was developed. Through the presentation of this sketch, it was possible to discuss the risks related to pesticide use in farming, as well as some protective measures that should be taken into consideration prior to working with pesticides. It was also possible to discuss, through this theatrical sketch, the need to reduce use of pesticides in rural work and some possible alternatives to these chemical agents.

Two community consultations were performed to determine the feasibility of producing a video presentation and to identify the cultural activities that the women had in their (very limited) spare time. The results of the first consultation (contact with rural workers of São Lourenço Stream Valley during the Local Producers Association monthly meeting) showed that less than 5% of the homes had VCRs at that time. Although VCRs were frequently present, in the region, in churches and politicians' residences, this option was discarded, in order to prevent potential political or religious use of the material.

The second consultation (open-ended interviews with a group of ten women, all rural workers in São Lourenço Stream Valley, where questions were asked about possible hobbies and cultural interest) showed that watching televised soap operas was the major cultural activity. This led us to develop a photographic soap opera, based on the theatrical sketch script previously constructed and tested. A photo-shooting session was held in Boa Esperança with local residents and rural workers. To the photos, short text lines were added, using the material previously recorded during the interviews for risk-perception assessment in both

communities. The "fotonovela" was entitled "Menina Veneno" ["Poison Girl," which in Brazilian Portuguese means both "intoxicated girl" and "fearless girl"].

"Fotonovela" Analysis

Eight focus groups were conducted to evaluate the reception of the information among the São Lourenço Valley women (all rural workers). The basic script contained 40 questions regarding: 1) the content of the material; 2) the visual information presented; 3) the suitability of the material to their reality; 4) strong and weak points (what was right and what was wrong) of the material under evaluation; 5) the main objective of the material; 6) comprehension of the text and of the messages contained in the distributed material, and 7) after reading that material, what would change (or not) in their lives. Each group included by eight to 12 women (85 women total, 16–62 years old, average age 38 years, with a 20% rate of semi-illiteracy. The focus group sessions were approximately an hour and a half each. Data was recorded and transcribed by the interviewer/group leader. One assistant researcher took notes during the group sessions. The two sets of data (transcriptions and notes) were compiled for analysis of data.

RESULTS

Risk-perception Assessment in Boa Esperança

A detailed discussion of the results of Boa Esperança risk-perception assessment is available elsewhere.¹⁰ In brief, the results showed that although rural agricultural activity in Boa Esperança had decreased significantly over the years, pesticide use rates were still rising, not only for crop protection, but also as a weeding practice in farms and gardens growing produce for family consumption.

Pesticides had been the main determinant of the local agricultural activity in the preceding three decades. In the mid-1970s, local farming practices changed with transformation of traditional farming almost completely directed to the local market to farming based on intensive pesticide use. The change forced local producers to re-orient their work processes and to abandon the traditional knowledge and practices. After two decades of intensive pesticide use, workers found themselves dependent of these chemical agents.

In the mid-1990s, the Brazilian inflation rate increased dramatically, putting many farms out of business. The younger workers migrated to the Rio de Janeiro urban center, where they found marginal positions in the job market. The older ones stayed in the region, cultivating small crops and working as maids or gardeners for the wealthy people who purchased second homes in the area.

Although these older producers had experienced both farming cultures the pesticides culture still dominated. Defensive strategies were evident, especially those regarding the attribution of individual characteristics as determinants of pesticides' harmful potential. According to these workers, individuals have different sensitivities to getting ill from similar pesticide exposures. There are those individuals who are strong (frequently they put themselves in this group) and those who are weak (always other people), as expressed in this statement:

For example, let's suppose that I'm a *cachaça* [Brazilian traditional liquor] drinker. I drink a lot of *cachaça* and very soon my liver is blown out, with cirrhosis, and I'm dying. Some other person drinks a lot of *cachaça* for all of his life, 80 years. One person smokes for a very short time and dies because of his smoking. The other smokes for all his life and doesn't have any problem. It's the same thing with the poison [pesticide]: there are organisms that support the poison, there are others that don't. Here in this region it is exactly how I'm saying to you. (Rural worker, male, 72 years old)

Regarding risk perception, male interviewees usually denied or minimized the existence of risks related to pesticide use in crop protection. Frequently this denial/minimization was associated with defensive strategies, or a way to support the harmful work practices that they had to experience. Among women, the risk minimization was related to unfamiliarity with the pesticides' harmful potential and/or the possible exposure routes:

I never had to deal with poison [pesticides]. When my husband is spraying pesticides I always stay behind him, just pulling the rubber hose. For me it's an easy little service. But for him, it's a tough job. (Rural worker, female, 68 years old)

This statement, present in most of the women's interviews, shows that the rubber hose-pulling activity, where the woman stays less than 2 meters of the hose's nozzle, is not seen as a potential danger.

Risk Perception Assessment in São Lourenço Stream Valley

Results of the São Lourenço Stream Valley risk-perception assessment showed that rural farm workers associated health problems from exposures to pesticides with simple symptoms and/or episodes of intoxication, that is, the visible symptoms of human pesticide contamination. This strengthens the hypothesis that previous experiences are important in workers' perceptions of risk. For the interviewees, therefore, risk existed when its effects became apparent or visible. So, when there is no visible effect from an exposure, they have the impression that risk is nonexistent.

Among women interviewees, it was found that the harmful potential of pesticides, especially the exposure

routes, was not clear to most of them. The invisibility of risks was evident, particularly related to rubber-hose pulling and to clothes and equipment washing.

Similar to what was observed in Boa Esperança, the women did not consider the rubber-hose pulling as a direct threat to their health. According to them, their husbands, who led the spraying operations, were the only ones exposed to the pesticides:

I had vertigo, I passed out. I was pulling the rubber hose. Once they took me to the hospital, the other time they took me to my house. I had it three or four times. Last year I passed out, they took me to the hospital and I only woke up in the following day. But I never had to deal with poison. Only my husband deals with that. He is my major concern, because he is dealing with this product directly. (Rural worker, female, 52 years old)

During my pregnancy I helped my husband pulling the rubber hose. But I think it doesn't represent any threat to my health. (Rural worker, female, 28 years old, five spontaneous abortions)

Another aspect related to the inclusion of women in rural work processes is that they are responsible for cleaning all clothes (including those used during the pesticide-spraying process) and equipment. Contaminated clothes are usually washed along with the family's regular clothes, elevating women's and children's exposures to these chemical agents. These activities are seen as regular/harmless 'housework':

There's no problem [washing contaminated clothes together with family's]. The problem of the poison is just at the moment someone is spraying it. (Rural worker, female, 38 years old)

You can wash it all together, water cleans everything. (Rural worker, female, 19 years old)

Among the men interviewees, defensive strategies had been developed, as we had observed before in the Boa Esperança locality. The same idea that individuals have different potentials or sensitivities for getting ill from similar pesticide exposures was observed here, as well as the attribution of a protective factor from individual physical strength:

I've been working with agriculture for 40 years and I've never felt anything, not even headaches. There are some people now who can't handle it, I mean, who are weak. (Rural worker, male, 68 years old)

I have the impression that this is a personal thing. Some have problems with it, some don't. That's how I see it. (Rural worker, male, 38 years old)

Risk-communication Strategy Development

A women's group was selected because their risk perception was even less accurate than that of the men. As

women don't lead the pesticide-spraying process (they usually help their husbands by pulling the rubber hose of the mechanical pulverization device), they do not perceive the risk to which they are exposed. Although they were less than 2 meters from the hose's nozzle, they didn't fear exposure because, in their opinion, the exposed ones were their husbands, who were holding the sprayer nozzle. Nevertheless, these women were responsible for all washing equipment and clothes, but they did not use any protective measure.

Our previous studies^{3,5,7} regarding risk communication in São Lourenço Stream Valley provided theoretical and practical support for the elaboration of this new strategy. These studies showed that: 1) the material should be constructed according to the cultural patterns of the rural workers' communities; 2) due to high levels of illiteracy, this material should contain as little written text as it was possible; 3) the material's text should avoid technical language; 4) it should also avoid the presence of a technician as the story narrator, due to a misconception that some health technicians were actually responsible for the pesticide manufacturers' technical support.

Using the data collected and consultation with the community members, a theatrical sketch script was based on a fictional story of a fearless rural worker (woman) who, after an acute exposure to pesticides, had a serious health problem. After the pesticide poisoning, the fictional heroine starts to rethink her work practices and communicate her experience to other women.

The fotonovela material was presented to the community of São Lourenço Stream Valley during a monthly meeting of the Local Producers Association. All women in the locality received a copy.

Risk-communication Strategy Analysis

One month after the distribution of the fotonovela, a focus group was convened with 12 women leaders in the community (23–52 years old, average 34 years old, all of them with minimum reading/writing skills), where the impressions of those women about the material were discussed.

The first outcome was the identification of the language pattern as “known,” “common in the region,” “the way they talk”:

Regina [the fotonovela's main character] talks just like we do. It's nice to hear her explaining to us the problems that the poison [pesticide] causes. (Rural worker, female, 52 years old)

It was very easy to read *Menina Veneno*. She talks like we do. (Rural worker, female, 37 years old)

It was like hearing my mother talking. (Rural worker, female, 23 years old)

When asked to compare the text lines to the photos, all of these women correctly correlated the pictures with the text. Each photo sequence (photos regarding similar problems/ aspects that were being discussed in the text lines) was identified correctly by these women, as was its correlated texts content.

Positive comments were made regarding general aspects focused on in the fotonovela, in particular about two aspects: 1. The importance of using a rural worker as the narrator of the story:

All materials people send to us have a [medical] doctor or an agronomist teaching how to do the things correctly. Here, we are teaching them.. (Rural worker, female, 41 years old)

2. The importance of the family's presence in the material:

It's very good to see such a wonderful family, where brother and father help the sister. (Rural worker, female, 37 years old) [in the fotonovela, these two characters are those who help the main character when she lost consciousness]

As we can see here, the most important thing in our lives is the family. (Rural worker, female, 32 years old)

Two negative aspects were highlighted: 1. At the end, everything went OK

This is like the soap operas, where in the last chapter, the good guy marries the good girl. Here, in our region, is different, at the end a lot of people die. (Rural worker, female, 52 years old)

I've seen cases where people die with much less pesticides that this girl used. She was lucky. (Rural worker, female, 41 years old)

2. The sudden change in the main character's thinking about pesticides:

There are a lot of people that even having a health problem never stop doing crazy and irresponsible things when spraying poison [pesticides] in the crops. (Rural worker, female, 37 years old)

Seven other focus groups were performed in the same locality, subsequently. Results were similar the first focus group's. Approximately 97% of these focus group participants ($n = 83$) said that reading was easy and comprehensible. The other two participants affirmed that text lines were boring and the fotonovela (24 pages) was too long.

Relative to negative aspects, it was also observed that:

1. The belief that hearing the speech of the main character, regarding her own negative experience with pesticides, will change the way people use these chemical agents:

I don't think people will do like her friend [start to use protection during pulverization]. As we see here, people don't change their activities based on others' experience. People only change when they face death. (Rural worker, female, 54 years old)

2. The presence of a medical doctor character did not help:

Here, you see, the [medical] doctor of the local health unit doesn't know anything, she looked at the patient at a glance and sent her to the hospital. That's the way it is, they don't know anything. (Rural worker, female, 62 years old)

DISCUSSION

Risk-perception studies can be important tools to be incorporated into risk assessment and community intervention approaches. The systematic assessment of risk-perception concepts and methods into risk assessment/management procedures can increase the efficacy of intervention efforts, such as environmental remediation and/or educational risk-communication strategies.

Risk-perception studies are particularly suitable for augmenting community-based participatory research (CBPR). Arcury et al.,¹¹ reviewing CBPR projects performed in the United States, points out that the success of each CBPR is determined by interconnected features, especially: 1) taking the time to interact with the community; 2) using multiple approaches to engage the different parts of the community; 3) understanding that different participants often have different goals; 4) appreciating each group's strengths; 5) valuing community knowledge; and 6) being flexible and creative in conducting research. These ideas were confirmed by case studies conducted by this research group¹¹⁻¹⁴ and others,^{10,15-17} as well as in the present study, highlighting the importance of participatory approaches to the formulation of intervention strategies.

The data presented here showed that workers' risk perceptions in the two study areas were very similar, differing, however, between men and women. This result led us to focus primarily on a risk communication effort designed for women. However, it's important to highlight that within the men's groups some serious problems were observed, such as the development of defensive strategies (individual fearless behavior, in which male workers tend to expose themselves intentionally to pesticides as a way to show everyone—themselves included—that those work activities do not represent any threat to their health).¹⁸ This behavior, seen by the group as "bravery," allows these workers to keep working in a dangerous environment and, at the same time, increases their vulnerability to harmful effects and can lead to serious mental illness problems.¹⁹

In contrast, the women had a low level of risk perception. The men usually saw the risks to which they were exposed, but denied and/or minimized them.

The women did not perceive the risks to which they were exposed, as during the rubber-hose pulls (assistance in the pulverization process) and washing clothes and equipment.

Studies in both developed and developing countries²⁰⁻²³ have indicated that women rural workers are extremely vulnerable to pesticide exposure. First, as they don't lead the pesticide pulverization process, women do not see the risks they face when assisting their fathers and husbands in this process. For them, pulling a rubber hose 2 meters behind the pulverization device is not a threat to their health, as they understand that only those who are holding the nozzle—husbands, fathers, colleagues, etc.—are exposed to pesticides. According to London et al.,²⁰ as this erroneous risk perception increases women's exposure to pesticides, it is necessary to review the "gendered nature of health workers' practices and surveillance" (which focus on rural work as a predominantly masculine activity), highlighting women's role in the rural work organization. These authors suggest that it is necessary to stimulate and implement gender-sensitive research to address the particularities of women's pesticide exposures.

A second problem is related to the gender-oriented division of rural work: women are responsible for washing the family's clothes and equipment, including those used to spray pesticides. This is seen by the group as housework, and not risky. For this reason, women can significantly and unknowingly increase their exposure to these chemical agents and put their homes and families on risk, especially when the family's regular clothes are washed together with contaminated ones. McCauley et al.,²⁴ in their community-based research among migrant rural workers in Oregon, showed that risky behaviors such as these are the most important take-home pathways for pesticides from work into homes. Goldman et al.²³ also highlighted, in their study of pregnant rural workers in California, that most women rural workers do not take steps that could prevent pesticide exposures to themselves and their families.

We agree with London et al.²⁰ that since women are concentrated in the most marginal positions in the formal and informal workforces, and production is organized in a gender-specific way, opportunities for women to control their exposures are limited. For all those reasons, the present study focused on women as the target for communication. Our previous studies regarding rural communication analysis in the region provided some direction to the development of the risk-communication strategy.^{3,5}

First, it led us to observe that, although we were dealing with a technical-based problem, we should avoid technical language and information, in order to prevent misunderstandings and false interpretations. Second, these studies showed a distrust of medical doctors and agricultural experts, stemming from previous studies in

the region that were identified with a medical doctor or an agronomist who conducted research and never gave feedback of the collected data to the community.

These studies also showed that most of the material available for rural workers is constructed in imperative language, transferring all responsibility for use, protection, and disposal of pesticides to these workers. This responsibility transfer, based on massive imperative messages such as “do not pollute,” “protect the environment,” “you are responsible for your environment,” frequently, leads the workers to construct negative self-images, considering themselves stupid, careless citizens’ who deliberately pollute the local environment.^{3,5}

Similar studies¹²⁻¹⁸ show that a suitable communication strategy that recognizes rural workers as heterogeneous groups is key to the success of each intervention strategy. According to Quandt et al.,¹³ “the general problem inherent in presenting research findings and risk messages to individuals and communities is adapting the message to the needs, concerns, beliefs, and knowledge base of these individuals and choosing effective channels for delivering the message.” These authors, in their study regarding a risk-communication strategy development, application, and evaluation in North Carolina, showed that it is possible to convey complex scientific finding in an appropriate way, which leads the audience (rural workers) to appropriate the information even without a scientific background.

Some common findings between similar studies¹²⁻¹⁷ and the present one can be summarized here as possible determinants of the success of the risk-communication strategy (fotonovela) developed: 1) the low literacy level observed within the group was not considered deterrent to the risk-communication strategy—instead, it gave the direction for the communication strategy development; 2) the use of technical language was avoided; 3) the use of normative educational approaches was avoided; 4) the reference to the community structure rather than generalizations engaged the group’s interest.

All of these factors were respected during the fotonovela construction process, which increased the good reception of this material among the community of São Lourenço Stream Valley, where it was tested. The narrator was a worker, a woman like all the others. Texts were extracted from their own speeches during the interviews. There isn’t a single recommendation in the text, only the narrator’s impressions regarding her own experience. The story takes place in the residence, around the family.

Recognizing themselves in the characters of the fotonovela, the women rural workers of São Lourenço Stream Valley allowed the discussion of several issues in environmental health, especially those related to their role in the rural work processes and the use of pesticides in farming activities.

This leads us to conclude that risk-perception studies are important approaches in the development

process of educative and risk-communication campaigns, bridging research to action.

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United States Postal Service Statement of Ownership, Management, and Circulation

1. Publication Title: International Journal of Occupational and Environmental Health
2. Publication Number: 0012-9770
3. Filing Date: September 30, 2006
4. Issue Frequency: quarterly
5. Number of Issues Published Annually: 4
6. Annual Subscription Price: \$108 (U.S. individuals)
7. Complete Mailing Address of Known Office of Publication: Abel Publication Services, Inc., 1611 Aquinas Court, Burlington (Alamance County), NC 27215
Contact Person: Sandra A. Lovegrove Telephone: (336) 585-1850
8. Complete Mailing Address of Headquarters or General Business Office of Publisher: Abel Publication Services, Inc., 1611 Aquinas Court, Burlington (Alamance County), NC 27215
9. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor: *Publisher:* Abel Publication Services, Inc., 1611 Aquinas Court, Burlington, NC 27215 *Editor:* Joseph LaDou, MD, 563 Mountain Laurel Drive, Aspen, CO 81611 *Managing Editor:* Sandra A. Lovegrove, Abel Publication Services, Inc., 1611 Aquinas Court, Burlington, NC 27215
10. Owner: Abel Publication Services, Inc., 1611 Aquinas Court, Burlington, NC 27215 (Sandra A. Lovegrove, 1611 Aquinas Court, Burlington, NC 27215; Joseph LaDou, MD, 563 Mountain Laurel Drive, Aspen, CO 81611)
11. Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages, or Other Securities: none
12. Tax Status: has not changed during preceding 12 months
13. Publication Title: International Journal of Occupational and Environmental Health
14. Issue Date for Circulation Data Below: July-September 2006
15. Extent and Nature of Circulation

	Average No. Copies Each Issue During Preceding 12 Mo.	No. Copies of Single Issue Published Nearest to Filing Date
a. Total No. Copies (Net Press Run)	500	400
b. 1. Paid Requested outside county mail subscriptions (form 3541)	130	114
2. Paid in-county subs (form 3541)	0	0
3. Carriers, non-USPS	186	151
4. Other classes mailed through USPS	1	1
c. Total Paid/Requested Circulation	317	266
d. Free Distribution by Mail	0	0
e. Free Distribution Outside Mail	0	0
f. Total Free Distribution	0	0
g. Total Distribution	317	266
h. Copies Not Distributed	183	134
i. Total	500	400
j. Percent Paid &/or Requested Circ.	100%	100%

16. Publication of Statement of Ownership: October-December 2006 issue
17. Signature and Title of Editor, Publisher, Business Manager, or Owner:
Date: 9/30/06

Sandra A. Lovegrove

Publisher