

Development of a Pesticide Log: Design and Testing of a Three-Month Diary of Infrequent Behavior

Jocelyn Newsome, Kerry Levin, and Jennifer Crafts

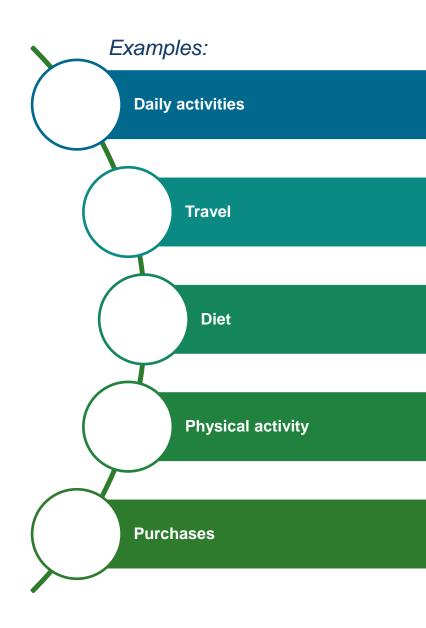
Survey Diaries

Survey diaries are a common tool for capturing detailed behavior over a period of time

(Dillman, Smyth, & Christian, 2009)

Respondents keep a detailed diary recording activities of interest

Diaries are a common means for government agencies to collect data on activities and expenditures



Literature on Survey Diaries

Advantages

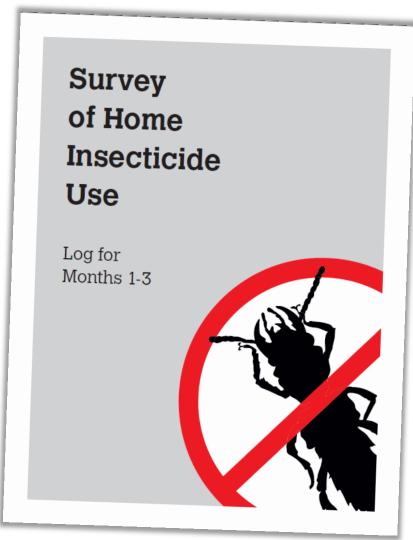
- Real-time data capture
- Potentially, more accurate data

Disadvantages

- Burden of reporting can lead to under-reporting of behaviors
- Completion may be postponed until the diary is due, and retrospective reporting often leads to over- or under-reporting

Designing and Testing a Diary for a Pesticide Study

- Object of pilot study: capture household use of (and exposure to) pesticides in homes, lawns, and gardens
 - Included pesticides used on people and pets
 - Six-month study
 - Respondent task:
 complete two three-month
 logs to keep track of use of pesticides



Data to be collected for each application

Full product name

(brand & product)

EPA Registration Number Reason for application

Type of product

(e.g., aerosol, candle, foam, fogger, shampoo, bait, flea collar)

Amount used

(including ounces for products mixed from concentrate)

Date of application

Who applied it, (Including age & gender)

Where applied

(including specific locations in and outside the home)

Safety precautions

Development and Testing of the Log

Cognitive Testing

Development

Collaborative group design • employ

 survey methodologists and graphic designer

Internal Westat focus group

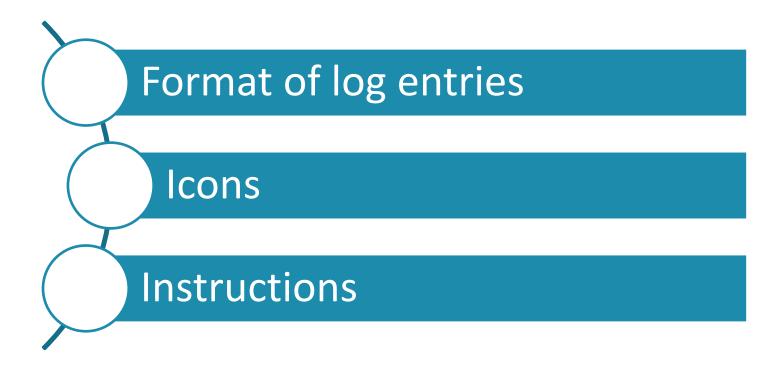
 employees in support & administrative roles

Round 1 testing

 25 respondents in three locations: Rockville, MD, Raleigh, NC, and Los Angeles, CA

Round 2 testing

 9 respondents in Rockville, MD Today's presentation will discuss our findings and revisions to three main components of the log:





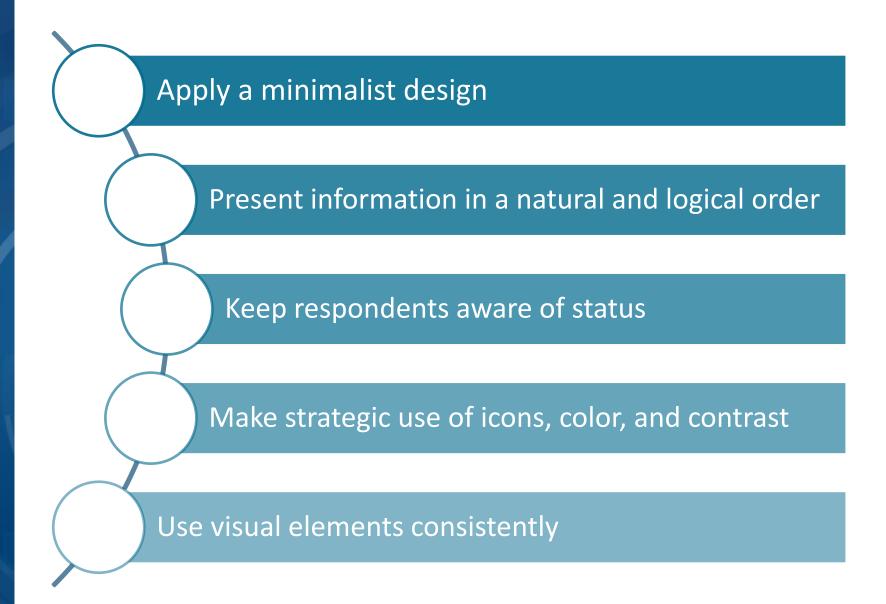
Format of Log Entries for each Application

Instrument Content— 6 pages per application

Next, we are interested in what form the product was in and how much was used.

11. Was the product	12. Amount Used
a. An aerosol can?	a. How many ounces was the container?
Yes 1 → GO TO Q12a	Ounces:
No 2 → GO TO Q11b	
	a1. Thinking about a full container, how much spray
	was used?
	Spot treatment (small amount) 1
	Half the container or less 2
	More than half, but not all of the GO TO Q13
	container3
	Entire container 4
b. A concentrate?	h Mas the concentrate (Circle one)
Yes 1 → GO TO Q12b	b. Was the concentrate (Circle one) Powder 1
No	Liquid 2
1102 7 GO 10 Q11C	Other
	(Specify)
	(Opechy)
	b1. How many ounces of the concentrate were added
	to water or other liquid?
	Ounces:
	b2. What was used to apply the product?
	Trigger or pump sprayer 1
	Hose end sprayer 2] GO TO
	Something else?91 Qb5
	(Specify)
	b3. How much water or other liquid did you mix with the
	concentrate? (Indicate ounces or gallons)
	Ounces:
	OR GO TO Q13
	Gallons:

Design: Application of Usability Principles



Initial Visual Design for Paper Log

Survey of Home Insecticide Use	3-Month Log	LOG ENTRY 1	Survey of Home Insecticide Use 3-Month Log	LOG ENTRY 1
Please fill out a new log ent	ry for each and every time you	use an insecticide.	TYPE OF PRODUCT c	Choose 1
WHEN & WHAT	HOW		Aerosol can	☐ Fogger 🍎
Date of Application	following worn	_	Size of can (in ounces) Amount used: Spot treatment (small amount)	Size of container (in ounces) Number of foggers used Number of rooms treated
Full Product Name	Protectiv Special o Dust Mas	lothing like coveralls	Half the container or less More than half, but not all of the container Entire container	Granules, dust, powder, or pellets Size of container (in ounces)
EPA Reg. No. EPA Reg. No. not fou	Did the person	n applying the product wash their	Bait station, trap, or fly strip	Amount used: Spot treatment (small amount)
WHO & WHY	hands when the	ney were done?	Number used	Half the container or less More than half but not all Entire container
Who applied it? Someone in the household Male Female Age	How quickly a others use the with the treate	•	Number used Time used: Less than 1 hour 1 to 2 hours More than 2 hours	Method of applying: Handheld spreader Walk behind or "push" spreader Spread directly from container Something else
Professional or Landlord Company Name Telephone Number ()	Used on		Concentrate Powder Liquid Other Ounces of concentrate used	Non-aerosol sprayer or pump bottle Size of container (in ounces) Amount used:
Reason for Application			Amount of water Ounces mixed with concentrate Gallons Don't know	More than half but not all Entire container
Was the product used <u>only</u> on furniture or bedding? Yes No Was the product used <u>only</u> in cracks and crevices or on	Check all that apply. Inside Home Whole house Attic Unfinished basement Bedroom	Check all that apply. Outside Home Perimeter of house such as crawl space/foundation Patio/porch/deck Lawn or grassy area	Amount of mixture used: Half the mixture or less More than half, but not all Entire mixture Square feet covered Method of applying: Trigger or pump sprayer Hose end sprayer	Shampoo Size of container (in ounces) Amount used: Spot treatment (small amount) Half the container or less More than half but not all Entire container
baseboards? YesNo	Bathroom Other living area (family room, living room, finished basement)	Vegetable garden Flower garden Garage or shed that is NOT	Something else	Spot-on drops for pets Size of container (in ounces)
Was the product used on a person, pet, or pet's bedding?	Dining room/kitchen/pantry Garage that is attached to your home	attached to your home Other outside area (Specify)	Size of container (in ounces) Amount used:	Flea collar for pet Number of pets with collars
Check all that apply. Person Pet	Other inside area (Specify)		Spot treatment (small amount) Half the container or less More than half but not all	Something else (Specify)
Pet's bedding	4	60350	Entire container 100001	Amount used 6035

©

LOG ENTRY 1

Please fill out a new log entry for each and every time you use an insecticide.

WHEN & WHAT	HOW
Date of Application	When the product was applied, were any of the following worn? Check all that apply. Protective gloves
Full Product Name EPA Reg. No. EPA Reg. No. not found	Protective glasses Special clothing like coveralls Dust Mask None
WHO & WHY Who applied it?	Did the person applying the product wash their hands when they were done? Yes No
Someone in the household Male Female Age	How quickly after the product was used did you or others use the treated space or come into contact with the treated pet? Immediately Less than one hour
Professional or Landlord Company Name Telephone Number ()	One to 2 hours Three to 4 hours More than 4 hours Used on a person
Reason for Application	

WHERE

Professional or Landlord Company Name Telephone Number () Reason for Application	One to 2 Three to More th	an one hour
WHERE		
Was the product used <u>only</u> on furniture or bedding?	Check all that apply. Inside Home	Check all that apply. Outside Home
Yes No	Whole house Attic	Perimeter of house such as crawl space/foundation
Was the product used <u>only</u> in cracks and crevices or on baseboards? Yes No	Unfinished basement Bedroom Bathroom Other living area (family room, living room, finished basement)	Patio/porch/deck Lawn or grassy area Vegetable garden Flower garden Garage or shed that is NOT attached to your home
Was the product used on a person, pet, or pet's bedding? Check all that apply. Person Pet Pet's bedding	Dining room/kitchen/pantry Garage that is attached to your home Other inside area (Specify)	Other outside area (Specify)
100001		600A

TYPE OF PRODUCT Choose 1 Aerosol can Fogger Size of can (in ounces) Size of container (in ounces) Amount used: Number of foggers used Spot treatment (small amount) Number of rooms treated Half the container or less Granules, dust, powder, or pellets More than half, but not all of the container Entire container Size of container (in ounces) Amount used: Bait station, trap, or fly strip Spot treatment (small amount) Number used Half the container or less More than half but not all Candles or coll Entire container Number used Method of applying: Time used: Handheld spreader Less than 1 hour Walk behind or "push" spreader 1 to 2 hours Spread directly from container More than 2 hours Something else Concentrate Non-aerosol sprayer or pump bottle Powder Size of container (in ounces) Liquid Amount used: Other Spot treatment (small amount) Ounces of concentrate used Half the container or less Amount of water More than half but not all mixed with concentrate Entire container Don't know Amount of mixture used: Shampoo Half the mixture or less Size of container (in ounces) More than half, but not all Amount used: Entire mixture Spot treatment (small amount) Square feet covered Half the container or less Method of applying: More than half but not all Trigger or pump sprayer Entire container Hose end sprayer

Findings from Round 1 Testing

- The generic two-page format intended to apply to any type of insecticide didn't always work as intended.
- Respondent issues:
 - Reluctant to fill out a twopage entry for every single application of mosquito repellent
 - Difficulties answering some of the questions (e.g., where was it applied?) for pesticides applied to a person or pet

Solution: Buckets

What Do I Do?

For the next three months, fill out a log entry for each and every time you use an insecticide.

An insecticide is a product used to control insects.

Insecticides are used in homes, yards, gardens, as well as on pets and people.



INCLUDE

- . Sprays or ball to treat roaches. ants, or other bugs in your home
- Sprays, creams, lotions, or shampoos that you put on your body to prevent mosquito or other bug bites or to treat for lice
- "Dust" or other pesticides for flower or vegetable gardens
- · Insecticide granules or powder applied to grass or lawns
- Sprays, powders, spot-on products. or collars to prevent or kill fleas or ticks on your pet



DON'T INCLUDE

- Weed killers
- Rodent control
- Distrifectants



IF YOU USE AN INSECTICIDE ON A PERSON

Go To Page 4



IF YOU USE AN INSECTICIDE ON A PET

Go To Page 6



IF YOU USE AN INSECTICIDE IN YOUR HOME OR YARD

Go to the Log Entries Beginning on Page 8

What if someone else uses an insecticide in my home or yard?

If a professional, landscaper, or your landford uses an Insecticide in your home or yard, please report it. You can sometimes find information about the insecticide on a receipt or letter.

What if I don't use any insecticides during





Please fill out the information below for each insecticide used on a person, including sprays, creams, or lotions used to prevent mosquito, tick, or other bug bites.

Please also include any lice treatments.

	Product 1	Product 2
BRAND & PRODUCT NAME		
EPA REG. NO.	EPA REG EPA Reg. No. unknown	EDA Reg. No unknown
WHO WAS IT USED ON?	Male Female Age Did they apply it on themselves? Yes No If NO, who applied it? Male Female Age	Male Female Age Did they apply it on themselves? Yes No If NO, who applied it? Male Female Age
CHOOSE 1 TYPE OF PRODUCT	Aerosol can Non-aerosol sprayer or pump bottle Shampoo Lotion or cream Other (specify)	Aerosol can Non-aerosol sprayer or pump bottle Shampoo Lotion or cream Other (specify)
DATES USED		

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If NO, w	
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Please fill out the information below for each insecticide used on a pet.

	Product	Product 2
BRAND & PRODUCT NAME		
EPA REG. NO.	BPA HBG	EPA Reg No unknown
WHO PUT IT ON THE PET?	Male Female Age	Male Female Age
CHOOSE 1 TYPE OF PRODUCT	Spot-on drops Size of container (oz.) Flea collar Flea powder Size of container (oz.) Amount used: Spot treatment (small amount) Half the container or less More than half but not all Entire container Flea shampoo Size of container (oz.) Amount used: Spot treatment (small amount) Half the container or less More than half but not all Entire container Flea spot treatment (small amount) Half the container or less More than half but not all Entire container	Spot-on drops Size of container (or.) Flea collar Flea powder Size of container (or.) Amount used: Spot treatment (small amount) Half the container or less More than half but not all Entire container Flea shampoo Size of container (or.) Amount used: Spot treatment (small amount) Half the container or less More than half but not all Entire container Flea spray Size of container (or.)
	Amount used: Spot treatment (small amount) Half the container or less More than half but not all Entire container Flea dip Method of applying: Cloth or sponge Poured directly Spray Other (specify)	Amount used: Spot treatment (small amount) Half the container or less More than half but not all Entire container Flea dip Method of applying: Cloth or sponge Poured directly Spray Other (apecify)
# OF PETS TREATED		
DATES USED		

Findings from Round 2 Testing

- Overall, buckets worked well.
- Respondent issues:
 - Difficult reporting a product used on more than one person
 - Unsure how to report when a product was used more than once a day (e.g., bug spray)

	Product 1
BRAND & PRODUCT NAME	
EPA REG. NO.	EPA Reg. No. unknown
WHO WAS IT USED ON?	Male Female Age Did they apply it on themselves? Yes No If NO, who applied it? Male Female Age
CHOOSE 1 TYPE OF PRODUCT	Aerosol can Non-aerosol sprayer or pump bottle Shampoo Lotion or cream Other (specify)
DATES USED	//

Product 1				
BRAND & PRODUCT NAME				
EPA REG. NO. You can find the number in small print on the package.	EPA REG EPA Reg. No. unknown			
CHOOSE 1 TYPE OF PRODUCT	Aerosol can Non-aerosol sprayer or pump bottle Shampoo Lotion or cream Other (specify)			
WHO WAS IT USED ON?	Person 1 Male Age Female Total times used Person 2 Male Age Female Total times used			
	Person 3 Male Age Female Total times used			
	Person 4 Male Age Female Total times used			
	Person 5 Male Age Female Total times used			
	Person 6 Male Age Female Total times used			

More Findings from Round 2 Testing

Respondents were unable to answer detailed questions about insecticides applied by professionals and landlords:

- True of both homeowners and renters
- Respondents often guessed at the product used or answered "Don't know"

Additional Bucket

What Do I Do?

For the next three months, fill out a log entry for each and every time you use an insecticide.

An insecticide is a product used to control insects.

Insecticides are used in homes, yards, gardens, as well as on pets and people.



INCLUDE

- Sprays or bait to treat roaches, ants, termites, or other bugs in your home
- Sprays, creams, lotions, or shampoos that you put on your body to prevent mosquito or other bug bites or to treat for lice
- "Dust" or other insecticides for flower or vegetable gardens
- Insecticide grazules or powder are lind to grass or lawrs
- Sprays, powders, spot-on produc or collars to prevent or kill fleas ticks on your pet



DON'T INCLUDE

- Weed killers
- Products to control rodents such as mice, rats, or squirrels
- * Distrifectants



IF YOU USE AN INSECTICIDE ON A PERSON

Go to page 4



IF YOU USE AN INSECTICIDE ON A PET

Go to page 6



IF A PROFESSIONAL, LANDSCAPER, OR LANDLORD USES AN INSECTICIDE IN YOUR HOME OR YARD

Go to page 8



IF YOU USE AN INSECTICIDE IN YOUR HOME OR YARD

Go to the log entries beginning on page 10

Bucket: Professional Application

INSECTICIDES USED Survey of Home Insecticide Use | Log for Months 1-3 Survey of Home Insecticide Use | Log for BY A PROFESSIONAL Please fill out the information below for each time a professional, landscaper, or landlord uses an insecticide in your home, yard, or garden. DATE OF VISIT Company name Company name Company name PROFESSIONAL OR LANDLORD CONTACT INFORMATION Telephone number Telephone number **Telephone** rumber Address Address Address Street Street Street Street City City City Statu State State State REASON FOR APPLICATION Immediately Immediately Immediately HOW SOON DID YOU Less than one hour Less than one hour Less than one hour OR OTHERS COME One to 4 hours One to 4 hours One to 4 hours IN CONTACT WITH More than 4 hours More than 4 hours More than 4 hours. THE TREATED SPACE? Don't know Don't know

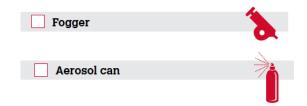


Icons

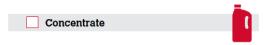
TYPE OF PRODUCT Choos	se 1
Aerosol can	☐ Fogger 🏂
Amount used: Spot treatment (small amount) Half the container or less	Size of container (in ounces) Number of foggers used Number of rooms treated
More than half, but not all of the container	Granules, dust, powder, or pellets Size of container (in ounces)
Bait station, trap, or fly strip	Amount used:
Number used	Spot treatment (small amount) Half the container or less
Candles or coil	More than half but not all Entire container
Time used: Less than 1 hour 1 to 2 hours More than 2 hours	Method of applying: Handheld spreader Walk behind or "push" spreader Spread directly from container Something else
Concentrate Powder Liquid Other	Non-aerosol sprayer or pump bottle Size of container (in ounces) Amount used:
Amount of water Ounces mixed with concentrate Gallons	Spot treatment (small amount) Half the container or less More than half but not all Entire container
Amount of mixture used:	Shampoo
Half the mixture or less More than half, but not all Entire mixture Square feet covered	Amount used: Spot treatment (small amount) Half the container or less
Method of applying: Trigger or pump sprayer Hose end sprayer Something else	More than half but not all Entire container Spot-on drops for pets
Foam or gel	Size of container (in ounces)
Size of container (in ounces)	Flea collar for pet
Amount used:	Number of pets with collars
Spot treatment (small amount)	

Findings from Round 1 Testing

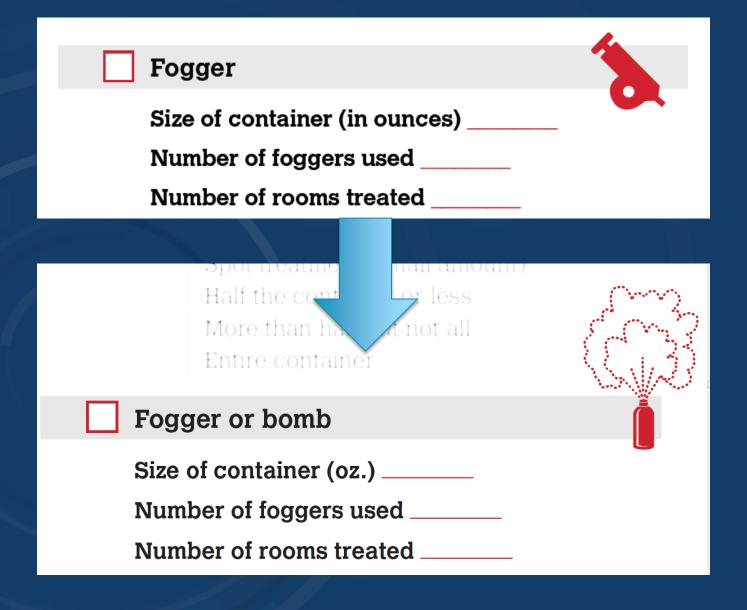
- Most icons worked well.
- Respondent issues:
 - Reported foggers under the aerosol can section



 Misinterpreted the concentrate section to refer to liquid products with "concentrate" or "concentrated" on the label



Fogger Icon



Concentrate Icon

☐ Concentrate	☐ Insecticide you mix with water
Powder Liquid Other	Powder Liquid Other
Ounces of concentrate used	Amount of concentrate used (oz)
Amount of water Ounces mixed with concentrate Gallons Don't know	Amount of water mixed with concentrate oz gal Don't know
Amount of mixture used:	Amount of mixture used:
Half the mixture or less	Half the mixture or less
More than half, but not all	More than half, but not all
Entire mixture	Entire mixture
Square feet covered	Square feet covered
Method of applying:	Method of applying:
Trigger or pump sprayer	Trigger or pump sprayer
Hose end sprayer	Hose end sprayer
Something else	Something else

Findings from Round 2 Testing

Icons worked as intended



Instructions

What should I include in my log?

This log asks about **insecticides** that have been used in your home, in your yard or garden, including ones used on a pet or person. Insecticides are used to control **insects**, such as roaches or ants infesting your kitchen, termites causing damage to your home, fleas on your dog and cat, or mosquitos while you're in your yard. They do not include products used to control pests that are not insects, such as weeds or rodents.

How often should I fill out the log?

We want to know about **every time** an insecticide is used in your home, yard or garden, or on a pet or person. If someone puts an insecticide on your lawn – that's one log entry. The following month when they do it again, that is a second entry. If someone treats the kitchen for ants, that's another log entry.

It's easiest and most accurate if you fill out the log every time you use an insecticide. We will send you a reminder.

What if I don't use any insecticides during these 3 months?

Even if you haven't used an insecticide product in your home, yard, or garden or on a pet or person, please return the log. Check the box on the back cover to let us know you haven't used any insecticides during this time.

What if someone else uses an insecticide in my home?

If a landlord, building manager, landscaper, or pest control specialist, applies an insecticide, please tell us about it. Sometimes, a receipt or letter provides information on what insecticides were applied. If you don't know what insecticides were used, please provide the contact information for the professional applicator, the date of service, and the reason for the application, if known.

Where do I find the EPA Reg. No.?

The EPA Registration Number can be found on the package or container. It is a string of numbers following the words "EPA Reg. No." The EPA Reg. No. will not contain any letters.

For the next three months, fill out a log entry for each and every time you use an insecticide.



INCLUDE

- Sprays or bait to treat roaches, ants, or other bugs in your home
- Sprays, creams, or lotions that you put on your body to prevent mosquito or other bug bites
- "Dust" or other pesticides for flower or vegetable gardens
- Insecticide granules or powder applied to grass or lawns
- Sprays, powders, spot-on products, or collars to prevent or kill fleas or ticks on your pet



DON'T INCLUDE

- Weed killers
- Rodent control
- Disinfectants

Findings from Round 1 Testing

Respondents often did not read the instructions

- Missed important points, such as:
 - instruction to complete an entry for each and every application
 - what counts as an insect (e.g., not rodents)
 - what to do if no insecticides were used
 - what to do if need additional logs

Original

Log Instructions

What should I include in my log?

This log asks about insecticides that have been used in your home, in your yard or garden, including ones used on a pet or person. Insecticides are used to control insects, such as roaches or ants infesting your kitchen, termites causing damage to your home, fleas on your dog and cat, or mosquitos while you're in your yard. They do not include products used to control pests that are not insects, such as weeds or rodents.

How often should I fill out the log?

We want to know about every time an insecticide is used in your home, yard or garden, or on a pet or person. If someone puts an insecticide on your lawn - that's one log entry. The following month when they do it again, that is a second entry. If someone treats the kitchen for ants. that's another log entry.

It's easiest and most accurate if you fill out the log every time you use an insecticide. We will send you a reminder.

What if I don't use any insecticides during these 3 months?

Even if you haven't used an insecticide product in your home, ward, or garden or on a pet or person, please return the log. Check the box on the back cover to let us know you haven't used any insecticides during this time.

What if someone else uses an insecticide in my home?

If a landlord, building manager, landscaper, or pest control specialist, applies an insecticide, please tell us about it. Sometimes, a receipt or letter provides information on what insecticides were applied. If you don't know what insecticides were used, please provide the contact information for the professional applicator, the date of service, and the reason for the application, if known.

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For the next three months. fill out a log entry for each and every time you use an insecticide.



INCLUDE

- · Sprays or bait to treat roaches, ants, or other bugs in your home
- . Sprays, creams, or lotions that you put on your body to prevent mosquito or other bug bites
- . "Dust" or other pesticides for flower or vegetable gardens
- · Insecticide granules or powder applied to grass or lawns
- · Sprays, powders, spot-on products, or collars to prevent or kill fleas or ticks on your pet



DON'T INCLUDE

- · Weed killers
- · Rodent control
- Disinfectants

Revised

What Do I Do?

For the next three months, fill out a log entry for each and every time you use an insecticide.

An insecticide is a product used to control insects.

Insecticides are used in homes, yards, gardens, as well as on pets and people.



INCLUDE

- Sprays or bait to treat roaches, ants, termites, or other bugs in your home
- Sprays, creams, lotions, or shampoos that you put on your body to prevent mosquito or other bug bites or to treat for lice
- "Dust" or other insecticides for flower or vegetable gardens
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DON'T INCLUDE

- Weed killers
- · Products to control rodents such as mice, rats, or squirrels
- Disinfectants



The log asks for an EPA Reg. No. Where do I find it?

The EPA Registration Number can be difficult to find, but it is very important. It tells us exactly what insecticides were used. It is usually on the outside of the package in small print. It is a string of numbers following the words "EPA Reg. No." It will not contain any letters.



IF YOU USE AN INSECTICIDE ON A PERSON

Go to page 4



IF YOU USE AN INSECTICIDE

Go to page 6



IF A PROFESSIONAL, LANDSCAPER, OR LANDLORD USES AN INSECTICIDE IN YOUR HOME OR YARD

Go to page 8



IF YOU USE AN INSECTICIDE IN YOUR HOME OR YARD

Go to the log entries beginning on page 10

What if I don't use any insecticides during these 3 months?

We still want to know. It's important for us to know when insecticides aren't used.



If you haven't used any insecticides, please check this box and send back the log at the end of the 3 months.

What should I include in my log?

This log sales about insecticides that have been used in your home, in your yard or gurden, including ones used on a pet or person. Itsecticides are used to control insects, such as rouches or ante indesting your letchen. terraites causing damage to your home, fless on your dog and cut, or mosepatou while you're in your yard. They do not include products used to control peets that are not truscits, such as weeds or rodests.

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Where do I find the EPA Reg. No.?

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For the next three months. fill out a log entry for each and every time you use an insecticide.



INCLUDE

- · Sprays or ball to treat roaches. ants, or other bugs in your home
- . Sprays, creams, or lotions that you put on your body to prevent mosquito or other bug bites
- . 'Dust' or other pesticides for flower or vegetable gardens
- · Insecticide granules or powder applied to grass or lawns
- · Sprays, powders, spot-on products, or collars to prevent or kill fleas or ticks on your pet



DON'T INCLUDE

- . Wood killers
- · Rodent control
- Distribution

What Do I Do?

For the next three months, fill out a log entry for each and every time you use an insecticide.

An insecticide is a product used to control insects.

Insecticides are used in homes, yards, gardens, as well as on pets and people.



INCLUDE



- * Sprage, creams, lottoms, or altampoors that you put on your body to prevent monequito or other bug bites or to treat for See
- * "Dust" or other insecticides for flower or vegetable gurdens
- * Insecticide granules or powder applied to grass or lawns:
- * Spraps, powders, spot-on products. or collars to prevent or kill finas or ticks on your pat



DON'T INCLUDE

- * Wood Milers
- . Products to control redents such as strice, rate, or sepaintels
- * Disinfactures



The log asks for an EPA Reg. No. Where do I find it?

The DR Registration Number can be difficult to find, but It to very proportiest. It tells us exactly what prescription were used. It is usually on the outside of the puckage in small print. It is a string of numbers following the words "ESN fing No." It will not contain any letters.



IF YOU USE AN INSECTICIDE ON A PERSON

Go to page 4



■ IF YOU USE AN INSECTICIDE ON A PET

Go to page 6



IF A PROFESSIONAL. LANDSCAPER, OR LANDLORD USES AN INSECTICIDE IN YOUR HOME OR YARD

Go to page 8



IF YOU USE AN INSECTICIDE TIP IN YOUR HOME OR YARD

Go to the log entries beginning on page 10

What if I don't use any insecticides during these 3 months?

We still want to know. It's important for us to know selven transcriptions aren't used.

If you haven't used any truscritizides, please check this box and send back the log at the and of the 5 months.

What should I include in my log?

This log sales about insecticides that have been used in your home. In your yard or parties, including ones used on a pet or person, busefinities are used to control insects, such as reaches or ante infesting your littless, terreites counting damage to your home, finus on your day and out, or manipules while you're in your yout. They do not include products used to control peats that are not include products used to control peats that are not include products used to control peats that are not include products used to control peats that are not

How often should I fill out the log?

We want to know about every time as issued in pour boars and a year boars, and or garden, or on a per or person. If someone puts an insectivitie on your learn - that's one long entry the following month when they do it again, that is a second only if someone breats the Michen for sets. Total's accelerate long entry.

It's easiest and most accurate if you fill out the logevery time you use an insectionic. We will send you a numinder.

What if I don't use any insecticides during these 3 months?

Even if you haven't used an itsectivitie product in your home, yard, or parlien or on a pet or person, please return the log. Check the box on the back cover to let us know you haven't used any insectivities during the time.

What if someone else uses an insecticide in my home?

If a landlord, building manager, landscaper, or post control specialist, applies as transcrizole please tell on about B. Somettesse, a receipt or letter provides information on what insectionless were applied. If you don't have what basectionless were used, please provide the contact information for the professional applicator, the date of service, and the reason for the application, If known.

Where do I find the EPA Reg. No.?

The IDA Registration Number can be found on the puckage or container. It is a string of numbers following the words "IDA Reg. No." The IDA Reg. No. will not contain any letters. For the next three months, fill out a log entry for each and every time you use an insecticide.



INCLUDE

- Sprays or ball to treat roaches, ants, or other bugs in your home.
- Sprays, creams, or lottons that you put on your body to prevent mosquito or other bug bites
- "Dust" or other pesticides for flower or vegetable gardens
- Insecticide granules or powder applied to grass or lawns
- Sprays, powders, spot-on products, or collars to prevent or kill fleas or ticks on your pet



DON'T INCLUDE

- Wood killers
- . Rodent control
- Distribution

What Do I Do?

For the next three months, fill out a log entry for each and every time you use an insecticide.

An insecticide is a product used to control insects.

Insecticides are used in homes, yards, gardens, as well as on pets and people.



INCLUDE

- Sprays or load to treat maches, units, terrollos, or other bugs in your home.
- Sprape, creams, Interse, or abanquous that you put on your body to prevent mosquito or other loag bites or to treat for low
- "Dust" or other insecticides for flower or vegetable gardens
- Insecticide granules or powder applied to grass or lawns
- Sprays, powders, spot-on products, or collars to prevent or kill finas or ticks on year pet



DON'T INCLUDE

- * Wood Milers
- Products to control rodents such as mics, rats, or squireds
- * Disinfectures



The log asks for an EPA Reg. No. Where do I find it?

The ESA Registration Number can be difficult to find, but it is very important. It talk us exactly what insecticibles were used. It is usually on the outside of the package in small print. It is a string of numbers following the words "ESA Rog No." It will not certain any letters.



IF YOU USE AN INSECTICIDE ON A PERSON

Go to page 4



IF YOU USE AN INSECTICIDE ON A PET

Go to page 6



IF A PROFESSIONAL, LANDSCAPER, OR LANDLORD USES AN INSECTICIDE IN YOUR HOME OR YARD

Go to page 8



IF YOU USE AN INSECTICIDE IN YOUR HOME OR YARD

Go to the log entries beginning on page 10

What if I don't use any insecticides during these 3 months?

We still want to know. He important for us to know when itsectivales aren't used.

If you haven't used any insecticides, please check this box and send back the log at the and of the 3 months.

What should I include in my log?

This log asks about insecticides that have been used in your home, in your yard or garden, including ones used on a pet or person. Insecticides are used to control insects, such as roaches or ants infesting your kitchen, termites causing damage to your home, fleas on your dog and cat, or mosquitos while you're in your yard. They do not include products used to control pests that are not insects, such as weeds or rodents.

How often should I fill out the log?

We want to know about every time on branchisch is used in your home, yard or parlies, or on a pet or person. If annexes pats as insecticité on your learn - that's one log entry the following month when they do it again, that is a second entry if annexes treats the little on the rate, that is a second entry if annexes treats the little on the rate, that is an observe to positry.

It's easiest and most accurate if you fill out the log every time you use an insecticide. We will send you a reminder.

What if I don't use any insecticides during these 3 months?

Even if you haven't used an imperitible product in your home, yard, or garden or on a pet or person, please relate, the log. Check the lost on the back cover to let us know you haven't used any inserticules during the time.

What if someone else uses an insecticide in my home?

If a landlered, building manager, landscoper, or post control specialist, applies an insecticals, please toil on about it is closestimes, a recoign or letter provides information, on what prescribides were applied. If you don't know what prescribides were used, please provide the contact adversarion for the professional applicator, the date of service, and the reason for the application, if lowest.

Where do I find the EPA Reg. No.?

The ISA Registration Number can be found on the package or container it is a string of numbers following the words "ISA Reg. No." The ISA Reg. No. will not contain any letters. or the next three months, ill out a log entry for each and every time you use in insecticide.

✓ INCLUDE

- Sprays or ball to treat roaches, ants, or other bugs in your home
- Sprays, creams, or lotions that you put on your body to prevent mosquito or other bug bites
- "Dust" or other pesticides for flower or vegetable gardens
- Insecticide granules or powder applied to grass or lawns
- Sprays, powders, spot-on products, or collars to prevent or kill fleas or ticks on your pet



DON'T INCLUDE

- Weed killers
- . Rodent control
- * Distribuctants

What Do I Do?

For the next three months, fill out a log entry for each and every

An insecticide is a product used to control insects.

Insecticides are used in homes, yards, gardens, as well as on pets and people.



INCLUDE

- Spraye or built to treat roaches, ante, termities, or other buge in your home
- Sprays, creams, Intiens, or shampoos that you put on your body to prevent mosquito or other log bites or to treat for lice
- "Dust" or other insecticides for flower or vegetable gurdens
- Insecticide granules or powder applied to grass or lasens
- Sprays, powders, spot-on products, or collars to prevent or kill fleas or ticks on your pet



DON'T INCLUDE

- · Wood killers
- Products to control rodents such as mics, rats, or equireels
- Disirdscharts



The log asks for an EPA Reg. No. Where do I find it?

The EDA Registration Number can be difficult to find, but it is very important. It follows exactly what insecticides were used. It is usually on the outside of the package in small print. It is a string of numbers following the words "EDA Reg. Mo." It will not contain any letters.



IF YOU USE AN INSECTICIDE ON A PERSON

Go to page 4



IF YOU USE AN INSECTICIDE ON A PET

Go to page 6



IF A PROFESSIONAL, LANDSCAPER, OR LANDLORD USES AN INSECTICIDE IN YOUR HOME OR YARD

Go to page 8



IF YOU USE AN INSECTICIDE IN YOUR HOME OR YARD

Go to the log entries beginning on page 10

What if I don't use any insecticides during these 3 months?

We still want to know. He important for us to know when insenticides aren't used.



If you haven't used any insecticides, please check this box and send back the log at the end of the 5 months.

What should I include in my log?

This log asks about insecticides that have been used in your home, in your yard or garden, including ones used on a pet or person. Insecticides are used to control insects, such as roaches or ants infesting your kitchen. termites causing damage to your home, fleas on your dog and cat, or mosquitos while you're in your yard. They do not include products used to control pests that are not insects, such as weeds or rodents.

How often should I fill out the log?

We want to know about every time an insecticide is used in your home, yard or garden, or on a pet or person. If someone puts an insecticide on your lawn - that's one log entry. The following month when they do it again, that is a second entry. If someone treats the kitchen for ants. that's another log entry.

It's easiest and most accurate if you fill out the log every time you use an insecticide. We will send you a reminder.

What if I don't use any insecticides during these 3 months?

Even if you haven't used an insecticide product in your home, yard, or garden or on a pet or person, please return the log. Check the box on the back cover to let us know you haven't used any insecticides during this time.

What if someone else uses an insecticide in my home?

If a landlord, building manager, landscaper, or pest control specialist, applies an insecticide, please tell us about it. Sometimes, a receipt or letter provides information on what insecticides were applied. If you don't know what insecticides were used, please provide the contact information for the professional applicator, the date of service, and the reason for the application, if known.

Where do I find the EPA Reg. No.?

The EPA Registration Number can be found on the package or container. It is a string of numbers following the words "EPA Reg. No." The EPA Reg. No. will not contain any letters.

For the next three months, fill out a log entry for each and every time you use an insecticide.

INCLUDE

- . Sprays or ball to treat roaches. ants, or other bugs in your home
- . Sprays, creams, or lotions that you put on your body to prevent mosquito or other bug bites
- . 'Dust' or other pesticides for flower or vegetable gardens
- · Insecticide granules or powder applied to grass or lawns
- . Sprays, powders, spot-on products, or collars to prevent or kill fleas or ticks on your pet

DON'T INCLUDE

- « Wood killers
- Rodent control
- * Distinfectants

What Do I Do?

For the next three months, fill out a log entry for each and every time you use an insecticide.

An insecticide is a product used to control insects.

Insecticides are used in homes, yards, gardens, as well as on pets and people



- . Sprays or ball to treat maches, units. termities, or other bugs in your home
- * Sprays, creams, lottoms, or shampoos that you put on your body to prevent monegatio or other bug bites or to treat for See
- * "Dust" or other insecticides for firmer or vegetable gardens
- * Insecticide granules or powder applied to gross or lawns
- * Sprays, powders, spot-on products. or collars to present or kill finas or ticks on your pet



- * Wood Milers
- . Products to control redents such as strice, rate, or separrels
- * Disinfactures

IF YOU USE AN INSECTICIDE Go to page 4

- IF YOU USE AN INSECTICIDE Go to page 6
- LANDSCAPER, OR LANDLORD USES AN INSECTICIDE IN YOUR HOME OR YARD
- IF YOU USE AN INSECTICIDE IN YOUR HOME OR YARD

Go to the log entries beginning on page 10

Go to page 8



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If you haven't used any insecticides, please check this box and send back the log at the end of the 3 months.

What should I include in my log?

This log asks about insecticides that have been used in your home, in your yard or gurden, including ones used on a pet or person, Itsaecticides are used to control insects, such as rouches or ante infesting your letchen. torregion causing damage to your home, fless on your dog and cut, or mosquatox while you're to your yard. They do not puckade products used to control peats that are not tracets, such as weeds or roderts.

How often should I fill out the log?

We want to know about every time as insectionly is used in your home, yard or garden, or on a pet or person. If someone puts an insecticate on your lasen - that's one log entry The following month when they do it again, that is a second entry If someone treats the kitchen for units. that's spother log entry

It's easiest and most accurate if you fill out the logevery time you use an insectionic We will send you a mandpoline

What if I don't use any insecticides during these 3 months?

Even if you haven't used an itsection's product in your home, pard, or garden or on a pet or person, please return the log. Check the loss on the back cover to let us know you haven't used any itsenticides during this time.

What if someone else uses an insecticide in my home?

If a landierd, building manager, landscaper, or pest control specialist, applies on truscriticals; please tell un about 2. Sometimes, a receipt or letter provides information. on what transfiction were applied. If you don't know what purefiction were used, please provide the contact information for the professional applicator, the date of service, and the reason for the application, Electors,

Where do I find the EPA Reg. No.?

The IDA Registration Number can be found on the puckage or container. It is a string of numbers following the words "EPA Reg No." The EPA Reg No. will not contain any letters.

For the next three months. fill out a log entry for each and every time you use an insecticide.



INCLUDE

- . Sprays or bull to treat roaches. ants, or other bugs in your home
- . Sprays, creams, or lotions that you put on your body to prevent mosquito or other bug bites
- . "Dust" or other pesticides for flower or vegetable gardens
- Insecticade granules or powder applied to grass or lawns
- . Sprays, powders, spot-on products, or collars to prevent or kill fleas or ticks on your pet



DON'T INCLUDE

- « Wood killers
- Rodent control
- . Distribuctants

What Do I Do?

For the next three months, fill out a log entry for each and every time you use an insecticide.

An insecticide is a product used to control insects.

Insecticides are used in homes, yards, gardens, as well as on pets and people.



INCLUDE

- . Sprays or built to treat maches, units. termites, or other bugs in your home
- * Sprays, creams, lottons, or shampoos that you put on your body to prevent monopolito or other bug bites or to treat for los
- * "Dust" or other insecticides for flower or vegetable gardens
- * Insecticide granules or powder applied to grass or lawns
- * Sprays, powders, spot-on products. or collars to prevent or kill fless or ticks on your pet



DON'T INCLUDE

- * Wood Milers
- . Products to control rodents such as strice, rate, or sepatrovia
- * Disirdectares



The log asks for an EPA Reg. No. Where do I find it?

The CDA Registration Nigniler can be difficult to find, but It to very proportiest. It tells us exactly what proscription were used. It is usually on the outside of the puckage in small print. It is a string of numbers following the words "ESA fing No." It will not contain any letters.



IF YOU USE AN INSECTICIDE ON A PERSON

Go to page 4



IF YOU USE AN INSECTICIDE ON A PET

Go to page 6



IF A PROFESSIONAL, LANDSCAPER, OR LANDLORD USES AN INSECTICIDE IN YOUR HOME OR YARD

Go to page 8



IF YOU USE AN INSECTICIDE IN YOUR HOME OR YARD

Go to the log entries beginning on page 10

What if I don't use any insecticides during these 3 months?

We still want to know. It's important for up to know selven transcriptions aren't used.

	If you haven't used any insecticides, please	
ш	check this box and send back the log at the	į
	and of the 3 months.	

Findings from Round 2 Testing

Respondents read instructions more often and were much more likely to remember vital information

 One respondent defined a mouse as an insect, so we added examples of rodents to the exclusion list



DON'T INCLUDE

- Weed killers
- Products to control rodents such as mice, rats, or squirrels
- Disinfectants



Final Thoughts

Takeaways

- Design does impact respondents' ability to report data correctly
- Color & icons matter
- Simplifying instructions is best
- Some information needs to be repeated everywhere

Final Thoughts

- The complexity of survey diaries require a great deal of expertise to design
 - Combined expertise of three survey methodologists (one of whom was also a usability expert) and graphic designer was key
- Iterative testing is important
 - Even with a strong initial design, two rounds of cognitive testing still revealed significant issues

References

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