

Recordkeeping Manual for Private Pesticide Applicators

2019



University of Kentucky
College of Agriculture,
Food and Environment
Cooperative Extension Service



Recordkeeping Manual for Private Pesticide Applicators

Ric Bessin, PSEP Coordinator for Kentucky
Emily Pfeufer, Extension Plant Pathologist

Contents

Introduction	3
List of Certified Applicators	4
Worker Protection Standards (WPS) Training Records.....	5
Respirator Fit Test Record	6
Pesticides Used in this Operation that Require a Respirator	7
Sprayer Calibration	8
Volume and Weight Equivalents.....	10
Pesticide Record Form: Explanation	11
Pesticide Record Form.....	12-77
Important Phone Numbers for Pesticide Applicators.....	back cover

Acknowledgements

This manual was adapted and modified from the Recordkeeping Manual for North Carolina Private Pesticide Applicators developed by Wayne Buhler, Pesticide Education Specialist, and the Recordkeeping Manual for Private Pesticide Applicators issued through the USDA Agricultural Marketing Service (AMS)

Trade names are used to simplify information in this publication. No endorsement is intended, nor is criticism implied of similar products that are not named.

Introduction

Farm Owner/Operator: _____

Farm/Company Name: _____

Address: _____

Phone Number: _____

The 1990 Farm Bill, also known as the Food, Agriculture, Conservation, and Trade Act, is administered by the USDA Agricultural Marketing Service (USDA-AMS), and requires private applicators to keep records. The Environmental Protection Agency (EPA) and Kentucky Department of Agriculture (KDA) regulations have additional recordkeeping requirements.

The forms in this manual are designed to help private applicators record all of the information required by these governmental entities. However, applicators may keep records in other ways as long as they contain the required information. Requirements for commercial applicators (not covered here) differ from those for private applicators.

Agricultural pesticide users must make these records available to authorized representatives of the USDA and KDA Division of Environmental Services who present identification. In addition, a licensed health care professional (or someone working under their supervision) can request information at any time following application when treating individuals who may have been exposed to restricted use pesticides. **In the case of a medical emergency, this information must be made available immediately.** See the phone numbers on the back cover.

In Kentucky, applicators have 14 days to record information related to applications, and must keep those records for three years following the date of

the pesticide application. If you hire a commercial applicator to apply a pesticide, you should obtain the necessary recordkeeping information from that applicator within 30 days of application. Kentucky regulations require commercial and private applicators to record all pesticide applications made to commodities that enter commerce, this includes both General and Restricted Use Pesticides.

Failure to comply with USDA-AMS requirements are subject to a civil penalty of not more than \$650 for the first offense and not less than \$1,100 for each violation for subsequent offenses.

Recording Spot Treatments

Spot treatments are useful in certain situations, particularly with weed control. In this case, a spot treatment is defined as a single-day use of a restricted-use product where the total area treated is less than 1/10 of an acre. This could be 1/10 of an acre of weeds within a 5-acre pasture. Spot treatments require the following records:

- Date of application including month, day and year
- Brand or product name
- EPA registration number
- Total amount of pesticide applied
- Location of the pesticide application designated as "spot application" followed by a description

Benefits of Keeping Records

- Records help you evaluate how well a pesticide worked, particularly if you have used reduced rates or alternative application techniques.
- Allows you to compare effectiveness of different application rates, techniques, equipment or adjuvants.
- Records help you determine how much pesticide you will need in the future so you can manage your inventory more effectively.
- Records help to prevent carry-over injury and improve rotation decisions.
- Records may help to protect you from legal action if you are accused of improper pesticide use.
- Commercial customers may require pesticide records to evaluate the potential for unwanted residues.
- Credit lenders or land buyers may require records to evaluate potential environmental liability before lending money or buying land.
- Records can help determine the most economical pesticide management program. Keeping records is part of a successful Integrated Pest Management (IPM) program.
- Records can provide data to respond to surveys conducted Federal agencies and universities that can impact the availability of some pesticide through re-registration.

List of Certified Applicators

List all of the certified pesticide applicators for your operation below.

Name of Applicator	Certification No.	Date Trained	Year Expires	Dicamba Training Date*

* Applicators must complete annual dicamba-specific training prior to using Engenia, FeXapan, or XtendiMax. Only certified applicators can use these products. Keep training certificates with your records.

Respirator Fit Test Record

All respirator fit tests must be conducted annually in compliance with OSHA Standard 1910.134(F). Before fit testing, applicators must have a medical clearance conducted within the previous two years. Keep any medical clearance and fit test certificates with your records for three years.

	Name of Applicator	Date	Date of Medical Clearance	Type of Approved Fit Test Used*	Name of Fit Tester and Location	Respirator Tested (make, model, style, size)	Fit Test (pass/fail)
			Limitations (y/n)				
EXAMPLE	John Doe	3/12/19	2/12/18	qualitative, irritant smoke	Dave Smith, Paducah Medical Center	3M 6800, full-face, medium	Pass
			No				

* Approved fit test protocols include: Qualitative (saccharin, Bitrex, isoamyl acetate, irritant smoke) or Quantitative.

Pesticides Used in this Operation that Require a Respirator

List all pesticides that require the use of a respirator, the tasks involved with their use, and the type of respirator worn. See the example below.

	Pesticide	Task	Type of Respirator
EX.	<i>Blastem 2EC</i>	<i>Mixing/loading</i>	<i>TC-23C Organic vapor</i>

Sprayer Calibration

1. Clean your sprayer. Before calibrating your sprayer, make sure it is in good working condition.

- Replace or carefully clean nozzles and screens with a soft brush or compressed air. Be sure to wear gloves and eye protection.

- Before reinstalling the screens and nozzles, partially fill the tank with water and thoroughly flush the lines.
- Reinstall the nozzles and screens. Make sure they are the same type and flow rate, and are in the correct alignment.

2. Average nozzle output. Fill the sprayer with water and pressurize to operating pressure. Record the psi used. Check hoses and lines for leaks.

Check for uniform spray pattern by spraying water over pavement or bare ground. Watch for streaks or skips. Streaks indicate over-application; skips indicate under-application.

Operating pressure used	Nozzle	Output for 1 minute (fl oz)	Nozzle	Output for 1 minute (fl oz)	Nozzle	Output for 1 minute (fl oz)	Nozzle	Output for 1 minute (fl oz)
	1		5		9		13	
	2		6		10		14	
	3		7		11		15	
	4		8		12		16	

Catch and record (above) the output from each nozzle for one timed minute. Add up these amounts and divide by the number of nozzles tested to determine the average output per nozzle.

$$\frac{\text{total output (fl oz)}}{\text{number of nozzles tested}} = \text{avg output } \mathbf{A}$$

If the output of any nozzle recorded here is not within 10% of the average output (box A, above), clean or replace that nozzle and repeat the test until its output is acceptable.

Replace pressure gauges as necessary.

3. Gallons per minute (GPM). In order to convert the average output from fluid ounces to gallons, divide by 128. In the following example, we collected 27 fl oz per minute, on average.

$$\frac{27 \text{ fl oz}}{128} = 0.213 \text{ GPM}$$

$$\frac{\text{avg output: from box A}}{128} = \text{GPM } \mathbf{B}$$

4. Time. Record the time it takes to travel 200 feet using the gears and RPM you plan to use when spraying. Repeat this twice to get an average time in seconds.

Gears used	time 1	average of times 1 and 2
RPM used	time 2	time \mathbf{C}

5. Sprayer speed (MPH).
Divide the distance travelled (200 ft) by the time it took to travel that distance.

$$\frac{\text{Distance (ft)} \times 60}{\text{Time (sec)} \times 88} = \text{MPH}$$

$$\frac{\overset{\text{distance}}{\boxed{200}} \times \boxed{60}}{\boxed{} \times \boxed{88}} = \boxed{} \text{ MPH} \quad \mathbf{D}$$

TIME: from box C

For example, say it took on average 34 seconds to travel 200 feet.

$$\frac{200 \times 60}{34 \times 88} = 4.01 \text{ MPH}$$

6. Determine the treated width (W) per nozzle. This will be different for broadcast, banded, or targeted row applications.

Broadcast Application:

Straight boom with evenly spaced nozzles adjusted to cover the complete length of the boom.

W = distance between nozzles on boom (in)

$$\frac{\text{distance between nozzles (in)}}{\boxed{}} = \boxed{} \text{ width (W)} \quad \mathbf{E}$$

Banded Application:

Across the boom there are treated and untreated zones.

$$W = \frac{\text{Band width (in)}}{\text{Nozzles per band}}$$

$$\frac{\text{band width (in)} \boxed{}}{\text{nozzles per band} \boxed{}} = \boxed{} \text{ width (W)} \quad \mathbf{E}$$

Targeted Row Application:

This is common when using drop nozzles or treating plants grown in beds.

$$W = \frac{\text{Row spacing (in)}}{\text{Nozzles per row}}$$

$$\frac{\text{row spacing (in)} \boxed{}}{\text{nozzles per row} \boxed{}} = \boxed{} \text{ width (W)} \quad \mathbf{E}$$

7. Calculate the sprayer output per acre in gallons (GPA) using the following equation:

$$\text{GPA} = \frac{\text{GPM} \times 5,904}{\text{MPH} \times W}$$

In the following example, we are broadcast spraying with 16 inches between nozzles.

$$\text{GPA} = \frac{0.213 \times 5,904}{4.01 \times 16} = 19.72 \text{ GPA}$$

$$\frac{\overset{\text{GPM: from box B}}{\boxed{}} \times \boxed{5,904}}{\underset{\text{MPH: from box D}}{\boxed{}} \times \underset{\text{W: from box E}}{\boxed{}}} = \boxed{} \text{ GPA} \quad \mathbf{F}$$

8. Compare the GPA output you calculate with the recommended output rate on the label. You can adjust the output per acre by changing sprayer pressure, tractor speed, or nozzles.

- Adjust pressure if the output is within 5% and 10% of the recommended GPA. Reduce pressure to deliver less (lower GPA) or increase pressure to deliver more. Recheck output and repeat the calculations.

- Adjust tractor speed if the output is off by more than 10%, but less than 25%. Slower speed delivers more spray, and faster speed delivers less. Measure speed under field conditions, insert new speed (Step 5, above) into the equation to calculate the new GPA.
- If output varies by more than 25%, change nozzles and repeat the pre-calibration processes.

Volume and Weight Equivalents

Volume Measurements

Gallon	Quart	Pint	Cup	Fluid Ounce	Tablespoon	Teaspoon	Milliliter	Liter
1	4	8	16	128	256	768	3,785	3.785
3/4	3	6	12	96	192	576	2,839	2.839
2/3	2+2/3	5+1/3	10+2/3	85+1/3	170+2/3	512	2,523	2.523
1/2	2	4	8	64	128	384	1,892	1.892
1/3	1+1/3	2+2/3	5+1/3	42+2/3	85+1/3	256	1,261	1.261
1/4	1	2	4	32	64	192	946	.946
1/8	1/2	1	2	16	32	96	473	.473
1/16	1/4	1/2	1	8	16	48	237	.237
	3/16	3/8	3/4	6	12	36	177	.177
	1/6	1/3	2/3	5+1/3	10+2/3	32	158	.158
	1/8	1/4	1/2	4	8	24	118	.118
		1/6	1/3	2+2/3	5+1/3	16	79	.079
		1/8	1/4	2	4	12	59	.059
			1/8	1	2	6	30	.030
			1/16	1/2	1	3	15	.015
						2	10	.010
						1	5	.005

Weight Measurements

Pounds	Ounces	Grams	Kilograms
1	16	454	0.454
3/4	12	340	0.340
2/3	10+2/3	302	0.302
1/2	8	227	0.227
1/3	5+1/3	151	0.151
1/4	4	113	0.113
1/8	2	57	0.057
1/16	1	28.4	0.028

Pesticide Record Form: Explanation

The information presented below should help you understand how to fill in the forms on pages 12 - 77. These tables satisfy the basic recordkeeping requirements for all pesticides, some specific pesticides may have additional recordkeeping requirements.

	Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
	Sub-location (if any)	Start and End Time	Certification Number		
EXAMPLE	2593 River Bend Road	5/1/2018	Dave Jones	corn	10 acres
	field #2	10:00 am to 12:30 pm	17568		

EXPLANATION	Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Can be a legal property description or an applicator-generated identification system that accurately identifies the location of the application. If the treated area is a greenhouse or nursery, identify it by name and location. Also include any applicable sub-locations (e.g., <i>field 1, greenhouse 3, etc.</i>)	This determines the start and end of the restricted entry interval.	Record the name and certification number of the applicator. This individual should also appear in the list of certified applicators on page 4.	The crop or commodity being treated.	Often this is acres, but it could be bushels, linear feet, square feet, or number of animals.	

Notifications: Either oral notification of workers or field posting is required for:

- open-field applications with an REI of greater than 48 hours
- applications in enclosed areas with an REI of greater than 4 hours

Post information before application to meet WPS requirements and maintain for 30 days past REI expiration.

Purpose of Application	Materials Applied				Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	Total Amount	
weeds, cutworms	Roundup Transorb	glyphosate	524-475	30 pts	
	Warrior II	lambda-cyhalothrin	100-1295	9.6 fl oz	24 hours

Purpose of Application	Product Name(s)	Active Ingredients	EPA Reg. No.	Total Amount	Restricted Entry Interval (REI)
Could be specific (early blight disease; Colorado potato beetle) or general (grassy weeds; Lepidoptera pests)	The name by which the manufacturer sells the product. If the application consists of a mixture of pesticides, list all of the products applied.	Found in the ingredient statement on the label. Some products may have more than one active ingredient. Do not list inert ingredients (sometimes listed on the label as "Other Ingredients").	Usually listed below the ingredient statement on the label. Do not confuse this with the EPA Establishment Number (EPA Est No).	Total amount of pesticide applied to the entire application area. Do not include the amount of water or other carrier that the pesticide was mixed with.	See <i>Agricultural Use Requirements</i> section on the label. Can be hours or days. Enter the <i>longest</i> REI among products applied.

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Purpose of Application	Materials Applied				Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	Total Amount	

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Purpose of Application	Materials Applied				Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	Total Amount	

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Purpose of Application	Materials Applied			Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Purpose of Application	Materials Applied			Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Purpose of Application	Materials Applied			Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Purpose of Application	Materials Applied			Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	

Purpose of Application	Materials Applied			Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Purpose of Application	Materials Applied			Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Purpose of Application	Materials Applied			Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Purpose of Application	Materials Applied			Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Purpose of Application	Materials Applied			Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Purpose of Application	Materials Applied			Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Purpose of Application	Materials Applied			Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Purpose of Application	Materials Applied			Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	

Purpose of Application	Materials Applied			Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	

Purpose of Application	Materials Applied			Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	

Purpose of Application	Materials Applied			Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Purpose of Application	Materials Applied			Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Purpose of Application	Materials Applied			Restricted Entry Interval (REI)	
	Product Name(s)	Active Ingredients	EPA Reg. No.		Total Amount

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Purpose of Application	Materials Applied			Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Purpose of Application	Materials Applied			Restricted Entry Interval (REI)
	Product Name(s)	Active Ingredients	EPA Reg. No.	

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Pesticide Record Form

Location	Application Date	Applicator Name	Crop/Product Treated	Units Treated
Sub-location (if any)	Start and End Time	Certification Number		

Important Phone Numbers for Pesticide Applicators

Emergency

National Poison Control Center(800) 222-1222

- Assistance in human poisoning cases

CHEMTREC(800) 424-9300

National Chemical Response and Information Center

- Help involving spills, leaks, fires, and accidents involving hazardous chemicals

Information

National Pesticide Information Center(800) 858-7378

<http://npic.orst.edu>

Monday through Friday 6:30 am to 4:30 pm, Pacific Time

- Medical and consumer information on pesticides

Pesticide Container Recycling(800) 205-6543

Kentucky Department of Agriculture (502)-573-0282

- Pesticide disposal assistance
- Pesticide labeling, licensing, and compliance information

My County Extension Service Office _____

Extension Agent _____

- Information on proper and safe pesticide use
- Private applicator certification training
- Up-to-date pesticide recommendations
- Information on pesticide disposal and recycling programs

Educational programs of Kentucky Cooperative Extension serve all people regardless of economic or social status and will not discriminate on the basis of race, color, ethnic origin, national origin, creed, religion, political belief, sex, sexual orientation, gender identity, gender expression, pregnancy, marital status, genetic information, age, veteran status, or physical or mental disability.