

Worker Protection Standard: Additional Requirements for Agricultural Employers of Workers¹

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Background

In 1992, the US Environmental Protection Agency (EPA) issued a comprehensive regulation called the Worker Protection Standard for Agricultural Pesticides (WPS). This regulation is primarily intended to reduce the risks of illness or injury to workers and handlers resulting from occupational exposures to pesticides used in the production of agricultural plants on agricultural establishments (i.e., farms, forests, nurseries, and enclosed space production facilities, such as greenhouses). The WPS requires agricultural employers to take steps to reduce pesticide-related risks when agricultural workers and pesticide handlers are exposed to these pesticides. The EPA has made several changes to the WPS since it was fully implemented in 1995. On November 2, 2015, the EPA revised the WPS, making significant changes to the rule's requirements. Most of the revised provisions became effective January 2, 2017; there are four provisions that are delayed until January 2, 2018. In late 2016, the EPA released the revised "How to Comply" Manual to provide an updated resource. The entire document is posted on their website at https://www.epa.gov/sites/production/files/2016-09/documents/htcmanual_final.pdf. This document will address the additional requirements for agricultural employers of workers under the revised WPS.

The topics addressed in this document include:

- WPS implementation dates

- Agricultural employer requirements during pesticide applications
- Agricultural employer requirements after pesticide applications
- Notification of entry restrictions
- Decontamination supplies for workers
- Early-entry workers

Other topics that are relevant to agricultural employers of workers, including information displayed at a central location, the application exclusion zone, and pesticide safety training, are discussed in separate documents.

WPS Implementation Dates

Effective January 2, 2017

- Annual mandatory training for workers and handlers.
- No grace period to train workers (there has never been a grace period to train handlers).
- Recordkeeping of handler and worker training.
- Minimum age requirement of 18 years old for pesticide handlers or early-entry workers entering into a treated site before the REI (Restricted Entry Interval) has expired.
- Expanded mandatory posting of no-entry signs for outdoor production (e.g., farms, forests, and nurseries) if the REI is greater than 48 hours.

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- Recordkeeping and posting of pesticide application information and hazard information (i.e., SDS).
- Anti-retaliation protections strengthened.
- Requirements for medical evaluation, fit testing, and specific training for use of respirators and the associated recordkeeping.
- Provide specific amounts of water to be used for routine decontamination.
- Provide water for emergency eye flushing for handlers at mixing/loading sites if protective eyewear is required by the pesticide product labeling.
- Continued exemption for owners and their immediate family with an expanded definition of immediate family.
- During pesticide applications, agricultural employers must keep workers and other persons out of the Application Exclusion Zone (AEZ) surrounding the pesticide application equipment within the establishment's property boundary.

Effective January 2, 2018

- Expanded training content for workers and handlers (January 2, 2018, or within 6 months of EPA making training materials available, but not before January 2, 2018).
- The expanded content that must be included in the pesticide safety information display (safety posters).
- Suspending applications—the requirement for handlers to suspend applications if anyone other than a trained and equipped handler involved with the application is in the AEZ, which can extend beyond the establishment's property boundary.

Agricultural Employer Requirements During Pesticide Applications

The WPS includes several provisions to prevent workers, unprotected handlers, and other persons from pesticide exposure during applications. The AEZ is a zone or area surrounding pesticide application equipment that exists only during outdoor production pesticide applications. When applications of WPS-labeled pesticide products are in progress on their establishments, agricultural employers must not allow or direct any worker or other person, to enter or to remain in the treated area or the AEZ that is within the boundaries of the establishment.

- Prior to 2018: The AEZ did not exist.

The AEZ is discussed in greater detail in EDIS Document PI263, *Worker Protection Standard: Application Exclusion Zone (AEZ)* (<https://edis.ifas.ufl.edu/pi263>).

Enclosed space production pesticide applications also have precautions and restrictions during applications of WPS-labeled pesticide products.

During pesticide applications in enclosed space production areas, the agricultural employer must not allow or direct any worker or other person, other than an appropriately trained and equipped handler involved in the application, to enter or to remain in specific areas for specified times and/or conditions.

- Prior to 2017: “Enclosed space production” areas were referred to as “greenhouses.” Enclosed space production encompasses greenhouses, mushroom houses, hoop houses, high tunnels, and grow houses.

Table 1 identifies the entry restrictions when applying pesticides for enclosed space production to ensure workers and other persons are not exposed to the pesticide(s) being applied. The restrictions depend on the types of pesticides or application methods used.

Agricultural Employer Requirements after Pesticide Applications

After any WPS pesticide application is made on an agricultural establishment, the agricultural employer must not allow or direct any worker to enter or to remain in the treated area during the REI specified on the pesticide product labeling. The REI is stated in the product label's Agricultural Use Requirements box.

- Prior to 2017: Farms and forests—no entry into treated area. Nurseries—no entry into treated area or an area up to 100 feet around the treated area, where the size of the additional area depends on type of application.

When two or more pesticides are applied to a treated area at the same time, the enforceable REI is the longest of all applicable REIs.

When an application of a WPS-labeled pesticide product to an area of outdoor production is complete, the agricultural employer must keep any worker out of the treated area until:

- The the REI specified on the pesticide product labeling has expired,

- All treated area warning signs have been removed or covered, and
- The applicable pesticide application information and safety data sheet is displayed at the central location.

After the application of a WPS-labeled pesticide product to an area of enclosed space production, the agricultural employer must keep any worker out of the area specified in column D of Table 1. Entry restrictions apply during enclosed space production pesticide applications until:

- The REI specified on the pesticide product labeling has expired,
- All treated area warning signs have been removed or covered, and
- The pesticide application information and safety data sheet is displayed at the central location.

Notification of Entry Restrictions

To inform workers of where pesticide applications have taken place on an agricultural establishment, and of the entry restrictions for each situation, the agricultural employer must notify workers of restrictions to keep workers out of a treated area for a specified period of time. There are different ways to notify workers, including oral, posting, and double notification, and different situations when to use one method or another.

Double Notification

Some pesticide products have a labeling statement that requires both the posting of warning signs to treated areas **AND** oral notification to workers. This is known as double notification. The agricultural employer must notify workers **BOTH** orally and by posting when labeling requires double notification. Any pesticide product labeling that requires double notification must be followed, as it is more stringent than the WPS notification requirements.

POST WARNING SIGNS

Outdoor production areas with REIs greater than 48 hours. If a pesticide is applied to an outdoor production area and the product labeling requires a REI greater than 48 hours, then workers must be notified of the application by posting warning signs (Figure 1).

Enclosed space production areas with REIs greater than 4 hours. If a pesticide is applied to an enclosed space production area and the product labeling requires a REI greater than 4 hours, then workers must be notified of the application by posting warning signs (Figure 2).



Figure 1. Warning sign posted at a vineyard.
Credits: UF/IFAS Pesticide Information Office



Figure 2. Posting a warning sign in the entrance to an enclosed space facility.
Credits: UF/IFAS Pesticide Information Office

POST WARNING SIGNS OR GIVE ORAL WARNING TO WORKERS

Outdoor production areas with REIs equal to or less than 48 hours. If a pesticide is applied to an outdoor production area and the product labeling requires a REI equal to or less than 48 hours, then workers must be notified of the application by either posting warning signs or giving them an oral warning.

Enclosed space production areas with REIs equal to or less than 4 hours. If a pesticide is applied to an enclosed space production area and the product labeling requires a REI equal to or less than 4 hours, then workers must be notified of the application by either posting warning signs or giving them an oral warning.

- Prior to 2017: Farms, forests, and nurseries—post warning sign or give oral notification for any REI, unless label

requires both. Greenhouses—all applications require signs to be posted.

Table 2 provides a summary of the posting and notification requirements for pesticide products with labeling that do not require double notification.

Notification of a worker is not required, either oral or posted warning signs, if the agricultural employer can ensure to meet one of the following:

- **For enclosed space production:** the worker will not enter any part of the entire enclosed structure or space from the beginning of the application until the end of any REI.
- **For outdoor production:** the worker will not enter, work in, remain in, or pass on foot through the treated area or any area within ¼ mile of the treated area on the agricultural employer's establishment, from the beginning of the application until the end of any REI.
- **For enclosed space production or outdoor production:** the worker was involved in the application of the pesticide as a handler, and is fully aware of the location of the treated area, timing of the entry restrictions, and restrictions on entering that area.

Oral Notification

Oral notification of the entry restrictions of a pesticide application provided to workers on an agricultural establishment must be in a language or manner that the workers can understand. The oral warning must be given to the worker:

- Before the application begins if a worker will be on the agricultural establishment at the time of the application.
- At the beginning of the worker's work period if a worker arrives while an application is taking place or a while REI for a pesticide application is in effect.

The oral warning must include:

- The location(s) and description of any treated area(s) subject to the entry restrictions either during or after the application,
- The dates and times when entry is restricted, and
- Instructions not to enter the treated area or an AEZ during an application, and that entry to the treated area is not allowed until the REI has ended and all posted warning signs are removed or covered. Early-entry workers are allowed to enter a treated site under a REI only under specific conditions (discussed under "Early-entry Workers").

Posted Warning Signs

Posted warning signs advising workers of entry restrictions into treated areas must meet all of the criteria regarding the content, size, timing, and location of posted warning signs. Worker entry into treated areas is not allowed while the signs are posted, even if the REI has expired, unless under special "early-entry" provisions (discussed under "Early-entry Workers"). If there are several contiguous areas that are treated with pesticides on a rotating or sequential basis, the entire area may be posted. However, workers are prohibited from the entire posted area except for those that meet the criteria and conditions as early-entry workers.

WHEN IS THE WARNING SIGN TO BE POSTED OR TAKEN DOWN?

- Post warning signs prior to, but no earlier than, 24 hours before the scheduled application of the pesticide.
- Warning signs are to remain posted throughout the application and any REI.
- Remove or cover warning signs within three days after the end of the REI (or end of the application if there is no REI). Signs may remain posted only if the posted area is treated as if it were under a REI by:
 - Instructing any workers on the agricultural establishment that may come within ¼ mile of the treated area not to enter the treated area, and
 - Ensuring workers do not enter the treated area, other than permitted early-entry activities.

WHAT MUST BE ON THE WARNING SIGN?

The warning sign must have:

- A white background,
- The words "DANGER" and "PELIGRO", "PESTICIDES" and "PESTICIDAS" at the top of the sign,
- The words "KEEP OUT" and "NO ENTRE" at the bottom of the sign,
- All letters clearly legible, and
- A circle containing an upraised hand on the left and a stern face on the right must be near the center of the sign. The inside of the circle must be red with the hand and a large portion of the face must be in white. The length of the hand must be at least twice the height of the smallest letters. The length of the face must be only slightly smaller than the hand.

The words on the warning sign in Spanish may be replaced with equivalent terms in a different language (non-English) if that language is read by the largest group of workers at

the agricultural establishment who do not read English. No other changes may be made to the format of the sign.



Figure 3. EPA-approved WPS warning sign.
Credits: UF/IFAS Pesticide Information Office

WHAT SIZE SHOULD THE SIGN BE?

The standard sign must be at least 14 inches by 16 inches with letters one inch high. The WPS allows smaller warning signs to be used to provide flexibility in situations where a smaller sign is more appropriate or practical, such as where the treated area is too small to accommodate the larger sign. Smaller warning signs may be used as long as the following conditions are met:

If the warning sign has $\frac{7}{8}$ inch high letters for “DANGER” and “PELIGRO,” then the sign must have:

- All remaining letters at least $\frac{1}{2}$ inch high, and
- A red circle that is at least 3 inches in diameter with the upraised hand and stern face.

If the warning sign has $\frac{7}{16}$ inch high letters for “DANGER” and “PELIGRO,” then the sign must have:

- All remaining letters at least $\frac{1}{4}$ inch high, and
- A red circle that is at least $1\frac{1}{2}$ inches in diameter with the upraised hand and stern face.

Signs any smaller are not allowed under any circumstances.

WHERE ARE WARNING SIGNS TO BE POSTED?

Standard sign in outdoor production areas: When using the standard sign (14” x 16”), post the signs so they are visible

from all reasonably expected points of worker entry to the treated area. This includes at least each access road, each border with any worker housing area within 100 feet of the treated area, and each footpath and other walking routes that enter the treated area. Where there are no reasonably expected points of worker entry, signs must be posted in the corners of the treated area or in any other location that gives maximum visibility.

Standard sign in enclosed space production areas: When using the standard sign (14” x 16”) and the entire structure or space is subject to a REI or WPS ventilation criteria, post the signs so they are visible from all reasonably expected points of worker entry to the structure or space. If the treated area is a subsection of the structure or space, post the signs so they are visible from all reasonably expected points of worker entry to treated area including each aisle or other walking route that enters the treated area. Where there are no reasonably expected points of worker entry, signs must be posted in the corners of the treated area or in any other location that gives maximum visibility.

Smaller signs in outdoor and enclosed space production areas: When using smaller signs, post signs in the locations required for the standard sign and:

- No farther than 50 feet apart around the perimeter of the treated area if the letters for “DANGER” and “PELIGRO” are at least $\frac{7}{8}$ inch in height, or
- No farther than 25 feet apart around the perimeter of the treated area if the letters for “DANGER” and “PELIGRO” are at least $\frac{7}{16}$ inch in height.

Signs are available for purchase from several commercial vendors.

Decontamination Supplies for Workers

Agricultural employers of workers must make sure that decontamination supplies are provided to workers who are working in a pesticide-treated area where, within the last 30 days, a WPS-labeled pesticide product has been used or a REI for such pesticide has been in effect, and are doing tasks that involve contact with anything that has been treated with the pesticide, including soil, water, or plants.

When must decontamination supplies be provided for workers?

- If the REI is greater than 4 hours, provide the decontamination supplies until 30 days after the end of the REI.

- If the REI is less than or equal to 4 hours, provide the decontamination supplies until 7 days after the REI expires.

What supplies must be provided to workers?

- Water: the agricultural employer must provide at least 1 gallon of water for each worker at the beginning of the work period. The water must be a quality and temperature that will not cause injury or illness if it contacts skin or eyes or is swallowed. If a water source is used for mixing pesticides, it cannot be used for decontamination without taking additional precautions to prevent contamination of the water by pesticides (e.g., back-flow prevention device, air gap, etc.).
- Soap and single use towels: enough for workers' needs. Hand sanitizers or wet towelettes do not meet the requirement for soap or towels.
- Prior to 2017: Provide enough water for routine washing and emergency eye flushing for workers and handlers. For handlers, also provide enough to wash entire body in emergency.

Where must decontamination supplies be located?

All decontamination supplies for workers must be located together, be reasonably accessible to where the workers are working (generally within ¼ mile of the workers), and be outside of any treated area or an area under a REI. For worker tasks performed more than ¼ mile from the nearest point reachable by vehicles (cars, trucks, or tractors) or more than ¼ mile from a non-treated area, the decontamination supplies may be at the nearest vehicular access point outside any treated area or area under a REI (Figure 4).

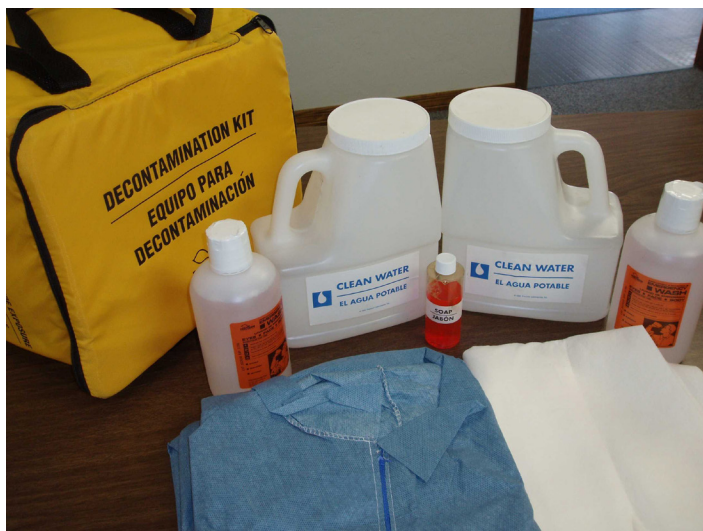


Figure 4. Commercially-available decontamination supply kit. Credits: UF/IFAS Pesticide Information Office

Early-Entry Workers

What are early-entry workers under WPS?

The agricultural employer may direct workers to enter treated areas when a REI is in effect to perform certain activities, provided that all of the conditions for the specific exception are met. Examples of such activities include moving irrigation equipment, driving a tractor in the treated area, responding to agricultural emergencies, and performing short-term or limited-contact tasks. In addition to meeting the WPS requirements for worker training and being provided the protections of a worker under the WPS, this section explains what additional conditions must be met to allow workers to be “early-entry” workers. An early-entry worker may only enter a treated area during a REI under the following limited situations and must meet all applicable conditions for each “exception”. Early-entry workers must be a minimum of 18 years old. Employers should make every effort to schedule pesticide applications and worker tasks in a way that will avoid the necessity of early-entry of workers into treated areas.

- Prior to 2017: Farms and forests—no entry into treated area. Nurseries—no entry into treated area or an area up to 100 feet around the treated area, where the size of the additional area depends on type of application.

Are there exceptions for activities with no contact?

- The early-entry worker must not touch anything treated by the pesticide to which the REI applies. This means no contact with things like soil, water, air, or surfaces of plants. There must be no contact with anything that may have pesticide residues on it, even if the worker wears PPE (personal protective equipment).
- No early-entry worker is allowed in the treated area under the “no-contact” exception until any inhalation exposure level listed on the pesticide product labeling has been reached, or until any ventilation criteria established by WPS (Table 1) or on the pesticide product labeling has been met.

What conditions must be met for early-entry workers to enter into a treated area where a REI is in effect for short-term activities?

If all of the following requirements are met:

- No hand labor activity is performed. Hand labor means any agricultural activity performed by hand or with any hand tool that causes a worker to have substantial contact

with plants, plant parts, soil, and other surfaces that may contain pesticide residues. Hand labor does not include operating, moving, or repairing irrigation or watering equipment or performing crop advisor tasks. Examples of hand labor tasks include: harvesting, detasseling, thinning, weeding, topping, planting, girdling, caning, sucker removal, pruning, disbudding, roguing, and packing product into containers in the field.

- The time in treated areas where a REI is in effect does not exceed one hour in any 24-hour period for any early-entry worker.
- No early-entry worker is allowed in the treated area during the first 4 hours after the application ends.
- No early-entry worker is allowed in the treated area until any inhalation exposure level listed on the pesticide product labeling has been reached, or until any ventilation criteria established by WPS (Table 1) or on the pesticide product labeling has been met.
- An exemption for Certified Crop Advisors allows them to “self-determine” their PPE if they must enter a field to conduct crop advising activities during an REI.

Are there exceptions for an agricultural emergency?

- An agricultural emergency is a sudden occurrence or set of circumstances that the agricultural employer could not have anticipated and could not have had any control over. This emergency requires entry into a treated area during a REI when no alternative practices would prevent or mitigate a substantial economic loss. A substantial economic loss means a loss in profitability greater than would be expected based on the experience and fluctuations of crop yields in previous years. Only losses caused by the agricultural emergency specific to the affected site and geographic area are considered. Losses from mismanagement are not included when determining whether a loss is substantial.
- An agricultural emergency must be declared by the Florida Department of Agriculture and Consumer Services. The agricultural employer determines if the emergency will result in a substantial economic loss to the agricultural establishment.
- If the labeling of any pesticide product applied to the treated area affected by the emergency requires double notification to workers, no early-entry worker is allowed to spend more than 4 hours out of any 24-hour period in treated areas.
- No early-entry worker is allowed in the treated area during the first 4 hours after the application ends.

- No early-entry worker is allowed in the treated area until any inhalation exposure level listed on the pesticide product labeling has been reached or until any ventilation criteria established by WPS (Table 1) or on the pesticide product labeling has been met.

What is meant by a limited contact task under WPS?

Limited-contact tasks are those that are not anticipated. They are tasks where early-entry workers’ only contact with treated surfaces—including soil, water, surfaces of plants, or crops—is minimal and is limited to their feet, lower legs, hands, and forearms. Hand labor tasks are not limited-contact tasks. Examples of limited-contact tasks include: operating or repairing weather monitoring and frost protection equipment; repairing greenhouse heating, air conditioning, and ventilation equipment; repairing non-application field equipment; and maintaining and moving beehives. Irrigation related activities are generally anticipated and are not included in the limited-contact definition; however, they have the same requirements for early entry.

Are there exceptions for limited contact and irrigation activities?

For early entry into a treated area where a REI is in effect to conduct irrigation activities or unforeseen activities that have limited contact with treated materials (plants or soil), all of the following requirements must be met:

- No hand labor activity is performed.
- The time in treated areas where a REI is in effect does not exceed 8 hours in any 24-hour period for any early-entry worker.
- No early-entry worker is allowed in the treated area during the first 4 hours after the application ends.
- No early-entry worker is allowed in the treated area until any inhalation exposure level listed on the pesticide product labeling has been reached, or until any ventilation criteria established by WPS (Table 1) or on the pesticide product labeling has been met.
- The task to be performed must be one that, if not performed before the REI expires, would cause substantial economic loss and there are no alternative tasks that would prevent the loss.
- Except for irrigation tasks, the need for the task could not have been foreseen.

- The early-entry worker has no contact with pesticide-treated surfaces other than minimal contact with feet, lower legs, hands, and forearms.
- The labeling of the pesticide product applied does not require double notification.

What are an agricultural employer's responsibilities to protect early-entry workers?

For an agricultural employer to direct a worker to perform activities in a treated area where a REI is in effect, they must:

- Ensure that any early-entry worker is at least 18 years old.
- Give instructions to early-entry workers. Prior to early entry, give each early-entry worker all of the following information orally and in a manner that the worker can understand:
 - Location of early-entry area where work activities are to be performed.
 - Pesticide(s) applied.
 - Dates and times that the REI begins and ends.
 - The exception that is the basis for the early entry, and a description of tasks that may be performed under that exception.
 - Whether contact with treated surfaces is permitted under the exception.
 - Amount of time the worker is allowed to remain in the treated area.
 - PPE required by the pesticide product labeling for early entry.
 - Location of the pesticide safety information (poster).
 - Location of the decontamination supplies required for early-entry workers.
- Read the pesticide label. Ensure that each early-entry worker either has read the applicable pesticide product labeling or has been informed, in a manner that the worker can understand, of all labeling requirements and statements related to human hazards or precautions, first aid, and user safety.

What are the PPE requirements for early-entry workers?

It is the agricultural employer's responsibility to provide each early-entry worker with the PPE specified in the pesticide product labeling for early entry, ensure that the early-entry worker uses the PPE as intended according to

manufacturer's instructions, and follow any other applicable requirements on the pesticide product labeling. PPE for early entry must meet the standards required for handlers and be maintained as such. PPE for early-entry activities is listed on the pesticide label in the "Directions for Use" section in the "Agricultural Use Requirements" box (Figure 5).

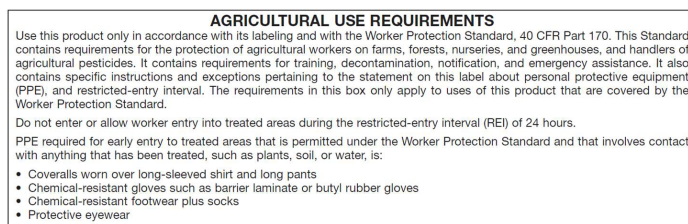


Figure 5. The Agricultural Use Requirements box on product labels list PPE required for early-entry.
Credits: CDMS

The agricultural employer must:

- Not allow or direct any early-entry worker to wear PPE unless they have received instruction in the prevention, recognition, and first aid treatment of heat-related illness. The worker must know and understand how to implement measures sufficient to prevent heat-related illness.
- Provide each early-entry worker with instruction on the proper use and removal of the PPE, and (as appropriate) on its cleaning, maintenance, and disposal.
- Not allow or direct any early-entry worker to wear home or to take home employer-provided PPE contaminated with pesticides.

What decontamination supplies are required for early-entry workers?

During any early-entry activity, the agricultural employer must provide all of the following decontamination supplies:

- At least three gallons of water per early-entry worker at the beginning of each early-entry work period for routine washing and potential emergency decontamination,
- Soap,
- Single-use towels, and
- Clean change of clothing, such as coveralls, for use in an emergency.

Additionally, if the pesticide product applied requires protective eyewear, 1 pint of water in a portable container must be immediately available to each early-entry worker (i.e., be on the worker's person or within immediate reach).

- Prior to 2017: Provide enough water for routine washing and emergency eye flushing for workers and handlers.

For handlers, also provide enough to wash entire body in emergency.

Where should the decontamination supplies for early-entry workers be located?

Decontamination supplies for early-entry workers:

- Must not be in an area being treated with pesticides.
- Must not be in an area under a REI, unless that location is necessary for the supplies to be reasonably accessible to early-entry workers.
- Must be reasonably accessible and generally not more than 1/4 mile from early-entry workers.
- May be located at the nearest vehicular access point if tasks being performed are more than 1/4 mile from the nearest point reachable by vehicle (car, truck, or tractor).

What decontamination supplies should be provided at the end of early-entry period?

Provide at the site where the early-entry workers remove their PPE:

- Soap,
- Single-use towels, and
- At least three gallons of water per early-entry worker so that the worker may wash thoroughly after removing PPE.

References

Fishel, F.M. 2015. *A Summary of Revisions to the Worker Protection Standard - 2015*. PI261. Gainesville: University of Florida Institute of Food and Agricultural Sciences. <http://edis.ifas.ufl.edu/pi261>

Fishel, F.M., and T. Sanchez. 2016. *Worker Protection Standard: Application Exclusion Zone (AEZ)*. PI263. Gainesville: University of Florida Institute of Food and Agricultural Sciences. <https://edis.ifas.ufl.edu/pi263>

Fishel, F.M, and T. Sanchez. 2016. *Worker Protection Standard: Information at a Central Location*. PI112. Gainesville: University of Florida Institute of Food and Agricultural Sciences. <https://edis.ifas.ufl.edu/pi149>

Fishel, F.M. 2016. *Worker Protection Standard: Training Workers and Handlers under the 2016 Revision Requirements*. PI268. Gainesville: University of Florida Institute of Food and Agricultural Sciences. <https://edis.ifas.ufl.edu/pi268>

US EPA. 2016. *How to Comply with the 2015 Revised Worker Protection Standard for Agricultural Pesticides: What Owners and Employers Need to Know*. EPA 735-B-16-001. United States Environmental Protection Agency. https://www.epa.gov/sites/production/files/2016-09/documents/htcmanual_final.pdf.

Table 1. Entry restrictions during enclosed space production pesticide applications (ventilation criteria).

A. When a pesticide is applied:	B. Workers and other persons, other than appropriately trained and equipped handlers, are prohibited in:	C. Until:	D. After the expiration of time specified in column C, the area subject to the restricted-entry interval is:
(1) As a fumigant.	Entire enclosed space plus any adjacent structure or area that cannot be sealed off from the treated area.	*The ventilation criteria are met.	No post-application entry restrictions required after criteria in column C are met.
(2) As a smoke, mist, or fog, or as a spray using a spray droplet size of smaller than medium (236–340 microns).	Entire enclosed space.	*The ventilation criteria are met.	Entire enclosed space.
(3) Not as in (1) or (2), and for which a respirator is required for application by the pesticide product labeling.	Entire enclosed space.	*The ventilation criteria are met.	Treated area.
(4) Not as in (1), (2) or (3), and: <ul style="list-style-type: none"> • from a height of greater than 12 inches from the planting medium, or • as a spray using a spray droplet size of medium or larger. 	Treated area plus 25 feet in all directions of the treated area, but not outside the enclosed space.	Application is complete.	Treated area.
(5) Otherwise.	Treated area.	Application is complete.	Treated area.

*When column C of the table specifies that ventilation criteria must be met, ventilation must continue until the air concentration is measured to be equal to or less than the inhalation exposure level required by the labeling. If no inhalation exposure level is listed on the labeling, ventilation is complete when one of the following conditions is met:

- i. Ten air exchanges are completed.
- ii. Two hours of ventilation using fans or other mechanical ventilating systems.
- iii. Four hours of ventilation using vents, windows, or other passive ventilation.
- iv. Eleven hours with no ventilation followed by one hour of mechanical ventilation.
- v. Eleven hours with no ventilation followed by two hours of passive ventilation.
- vi. Twenty-four hours with no ventilation.

Table 2. Posting and notification requirements for pesticide products without double notification.

Treated site	Restricted-entry interval (REI)	Post warning sign	Post warning sign or oral notification
Outdoor	>48 hours	X	
Outdoor	≤48 hours		X
Enclosed space	>4 hours	X	
Enclosed space	≤4 hours		X