APHIS

Veterinary Services Center for Epidemiology and Animal Health **Info Sheet**

September 2020

HPAI Virus Elimination: Per-Cubic-Yard Flat Rates for Table Egg-Laying Bird Barns and Table Egg Storage and Processing Facilities

Introduction

When a poultry facility becomes infected with avian influenza, virus elimination (VE) is a crucial step in the recovery process. The cleaning and disinfection (C&D) practices used to achieve VE should be cost-effective (APHIS Highly Pathogenic Avian Influenza Red Book). During past highly pathogenic avian influenza (HPAI) outbreaks, reimbursable payments for VE activities were, at times, delayed by the necessary paperwork required for cooperative compliance agreements (CCAs). These agreements allowed owners of land and structures and contractors to be reimbursed for completed work. In January 2016, APHIS issued a flat rate payment on a per-bird basis for HPAI virus elimination activities to help streamline the process and expedite payments to affected producers. A per-bird VE flat rate was released for table egglayer farms. Payments are made in two installments to help provide funds to producers more quickly.

APHIS continues to reevaluate the per-bird VE flat rates for other production types to make cost-effective improvements. Stakeholders have also expressed an interest in the development and updating of the flat rates for other production types. The HPAI VE flat rate for floor-raised birds was revised to convert the flat rate for a per-bird rate to a square-foot rate. Now the table egg facility rate is being revised for table egg-laying bird barns and table egg storage and processing facilities. The majority of egg-laying birds are housed off the floor; therefore, this evaluation's first priority was to develop a VE flat rate for table egg-laying bird barns paid on a cubic-yard basis. Secondly, this evaluation developed a VE flat rate for egg storage and processing facilities paid on a cubic-yard basis.

What kinds of poultry production are within the scope of the flat rates for table egg-laying bird barns and table egg storage and processing facilities?

The per-cubic-yard VE flat rate for table egg-laying bird barns applies to facilities for pullets or table egg-laying birds housed off the floor in cages, which includes manure management facilities that are attached to barns (i.e., manure pits). This rate does <u>not</u> apply to facilities for meat-type turkeys and broilers, floor-raised pullets and poults, table egg-laying birds not housed off the floor in cages, and breeder birds with nesting boxes. The per-cubic-yard VE flat rate for table egg storage and processing facilities applies to areas that store (i.e., coolers), wash, or break table eggs.

What costs were included in calculating the flat rates for table egg-laying bird barns and table egg storage and processing facilities?

An Overview of the Finance and Administration Procedures is located on the APHIS Emergency Management website for HPAI¹. The website outlines the appraisal and indemnity for birds and eggs, materials destroyed, depopulation and disposal, and VE, while the Finance and Administration Processes section includes documents specifying the activities and items covered under each topic. USDA makes the decision to clean and disinfect or destroy an item on a case-by-case basis for certain materials. Disposal includes items that would cost more to clean than they are worth: however, for materials that cannot be safely or adequately cleaned, the fair market value of disposed items is pro-rated based on the remaining usability of the item and paid separately.² Manure cleanout is part of disposal, not VE, and is not covered by the VE flat rate. The removal of birds, eggs, and manure from the house is covered in the detailed financial plan and is part of depopulation and disposal. VE begins after the removal of birds, eggs, and manure is complete. The revised VE flat rate is a single rate for all table egg-laying birds housed off the floor in cages on a cubic-yard basis. This rate still covers labor, equipment, and supplies to clean and disinfect the interior of barns, equipment, materials, and manure management facilities. The egg storage and processing cubic-yard flat rate covers personnel, equipment, and supplies needed to clean and disinfect the interior of egg facilities (store, wash, or break).

Traditionally, cleaning followed by application of a wet disinfectant has been used for VE on HPAI-infected premises. During the 2014-2015 outbreak, however, APHIS found that in many instances dry cleaning and heat disinfection of barns was the most cost-and time-effective VE method. Since the presence of organic material reduces the effectiveness of chemical disinfectants, the use of chemical disinfection requires a thorough wet cleaning phase in the barn. This wet cleaning phase has historically increased costs and delayed VE completion. Wet cleaning requires increased time and labor to remove soil and large amounts of liquid and solid waste, as well as to apply multiple detergents, rinse, and apply disinfectants. Barns must also dry out completely before the chemical disinfectant can be applied. In addition, damp environments support the continued viability of the virus, which increases the risk for spread of disease. Heat disinfection, in contrast, penetrates remaining organic matter after dry cleaning, eliminating the need for wet cleaning and immediately removing organic matter, an environmental factor required for virus viability. Therefore, we used heat disinfection to calculate the VE flat rate for table egg-laying bird barns and table egg storage and processing facilities. For items that cannot be heat disinfected, wet cleaning and disinfection will be used for VE. The VE flat rate payment process allows the owner of the land and structures on the premises to select and implement the most appropriate method, as approved by State animal health officials and APHIS. Because there are no VE activities associated with lying fallow, producers who choose this approach rather than cleaning to eliminate virus are not offered funding.

¹ Overview of the Finance and Administration Procedures at https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/emergencymanagement/hpai/fadprep-hpai

² https://www.aphis.usda.gov/publications/animal_health/2016/hpai-indemnity.pdf

Tables 1 through 4 outline the specific activities used to calculate the VE flat rate for table egg-laying bird barns, and are based on the broad categories (i.e., barn preparation, dry cleaning, heat disinfection, wet disinfection of equipment, and other activities) listed in the "HPAI VE: Flat Rate Payments" document³. In addition, producers were more cost-efficient when doing VE on their own farm in the 2015 HPAI outbreak compared to contractors; the flat-rate approach recognizes cost-sharing by producers. The VE flat rate payments for table egg-laying bird barns and table egg storage and processing facilities do not include routine or deferred maintenance or biosecurity activities that are part of the producers' cost share.

USDA-APHIS-VS is not mandating any specific approach to VE. The information in this document includes examples of the kinds of expenses considered when calculating the flat rate for VE, such as labor, supplies, equipment, and utilities. Producers should not interpret this list to be required expenses. The VE flat rate is calculated using the costs for heat disinfection, which is a proven cost-effective method for performing VE. This approach gives the owner of the land and structures the latitude to decide what is needed to perform VE on their premises. However, if the total expenses exceed the amount paid under the VE flat rate, the remaining cost would be the responsibility of the owner of the land and structures.

Categories of activities	Activities covered by Federal flat rate	Industry/grower cost-share
Barn and facility prepa	aration	
Labor	 Disassembly and reassembly of: Feeders Drinkers Fans (when cannot stay in the barn and be heat disinfected) Heaters (when cannot stay in the barn and be heat disinfected) Egg bumpers (when cannot stay in the barn and be heat disinfected) Egg bumpers (when cannot stay in the barn and be heat disinfected) Egg belts (when cannot stay in the barn and be heat disinfected) Egg carts, racks, trays, etc. (when cannot stay in the barn and be heat disinfected) Egg carts, racks, trays, etc. (when cannot stay in the barn and be heat disinfected) Manure belts and curtains (when cannot stay in the barn and be heat disinfected) Other cleanable equipment Equipment operator time 	 Mowing around barns Barn repairs, such as screens or holes in barn walls Other routine deferred maintenance Gravel and road repairs
Equipment	Equipment to move items listed above, including trucks and trailers to haul equipment, fuel, and machinery	MowersHerbicide sprayers
Supplies	Worker safety supplies: Personal protective equipment (PPE) Dumpster for disposal of PPE	 Screens Herbicide, rodenticide, or insecticide

Table 1. Categories of barn and facility preparation activities in the VE flat rate for table egg-laying bir	d
barns, table egg storage and processing facilities, and responsible parties	

 $^{^{3}\} https://www.aphis.usda.gov/animal_health/animal_dis_spec/poultry/downloads/hpai_flat_rate.pdf$

Categories of activities	Activities covered by Federal flat rate	Industry/grower cost-share
	f any remaining organic material in barn interior after disp and feed storage, manure management facilities)	
Labor	 Cleaning of: Feeders Drinkers Fans (when cannot stay in the barn and be heat disinfected). Heaters (when cannot stay in the barn and be heat disinfected) Wall curtains Egg bumpers (when cannot stay in the barn and be heat disinfected) Egg bumpers (when cannot stay in the barn and be heat disinfected) Egg belts (when cannot stay in the barn and be heat disinfected) Egg carts, racks, trays, etc. (when cannot stay in the barn and be heat disinfected) Egg carts, racks, trays, etc. (when cannot stay in the barn and be heat disinfected) Manure belts and curtains (when cannot stay in the barn and be heat disinfected) Other cleanable equipment Dusting of barn interior spaces that house or have direct contact with poultry or poultry products and manure Equipment operator time Supervisor time 	Cleaning of: Control rooms Break rooms Locker rooms Offices Hallways
Equipment	Equipment to dry clean barn interior spaces that house or have direct contact with poultry or poultry products and manure, including trucks and trailers to haul equipment, fuel, and machinery	 Trucks and ATVs for site supervisor transportation Portable toilets
Supplies	 Worker safety supplies: Personal protective equipment (PPE) Dumpster for disposal of PPE and supplies used for dry cleaning Supplies needed to dry clean barns Scrapers and brooms 	 Meals for workers Utilities (keeping the lights on while dry cleaning) Hotel and transportation (airfare)

Table 2. Categories of <u>dry cleaning</u> activities in the VE flat rate for table egg-laying bird barns and table egg storage and processing facilities and responsible parties

Table 3. Categories of <u>disinfection</u> activities in the VE flat rate for table egg-laying bird barns, table egg storage and processing facilities, and responsible parties

Categories of activities	Activities covered by Federal flat rate	Industry/grower cost-share			
Heat disinfection of barns and manure management facilities (heat barns to between 100° F and 120° F for 7 days, with at least 3 of those days being consecutive)					
Labor	Time to: • Set up heaters • Install thermometers • Monitor heating and record temperatures • Labor to seal barn with plastic Equipment operator time Technician time to reroute existing heaters or install ducting	Supervisor time			

Categories of activities	Activities covered by Federal flat rate	Industry/grower cost-share
Equipment	Equipment to heat disinfect barns and manure management facilities, including trucks and trailers to haul equipment, fuel, and machinery	Trucks and ATVs for site supervisor transportation
Supplies	Fuel for heaters	
Utilities	Utilities to run heaters	
	nfection of equipment that will not be heat disinfected	
Labor	 Wash and disinfect: Feeders Drinkers Fans (when cannot stay in the barn and be heat disinfected) Heaters (when cannot stay in the barn and be heat disinfected) Egg bumpers (when cannot stay in the barn and be heat disinfected) Egg belts (when cannot stay in the barn and be heat disinfected) Egg belts (when cannot stay in the barn and be heat disinfected) Egg carts, racks, trays, etc. (when cannot stay in the barn and be heat disinfected) Egg carts, racks, trays, etc. (when cannot stay in the barn and be heat disinfected) All equipment listed for dry cleaning Other cleanable equipment Equipment operator time 	
Equipment	Equipment to decontaminate equipment listed above, including trucks and trailers to haul equipment, fuel, and machinery	Trucks and ATVs for site supervisors
Supplies	 Worker safety supplies: Personal protective equipment (PPE) Dumpster for disposal of PPE and supplies used for disinfecting equipment Water and approved detergent/disinfectant for decontaminating equipment 	 Sawdust or wood shavings

Table 4. Categories of additional activities that may be included in the industry/grower cost-share in the VE flat rate for table egg-laying bird barns and table egg storage and processing facilities

Categories of activities	Industry/grower cost-share
Wet cleaning and disinf	ection of barns
Labor	Washing and disinfecting:
	Light bulbs
	Ledges
	Eaves
	Other interior barn surfaces
	Exterior of barn
	Application of insecticide/rodenticide
Equipment	Equipment for wet cleaning and disinfection
Supplies	Supplies for wet cleaning and disinfection
Other activities	
Admin/ Bookkeeping	Clerical and accountant time
	Mileage to meetings

Categories of activities	Industry/grower cost-share			
	 Legal counsel to review documents Time spent at meetings 			
Restocking preparation (Labor, equipment, and supplies)	 Any other activities related to restocking preparation after final environmental testing has occurred 			

How did USDA-APHIS-VS analyze VE data from the 2014-2015 HPAI outbreak to estimate the flat rates for table egg-laying bird barns and table egg storage and processing facilities?

Over the course of the 2014-2015 HPAI outbreak, C&D of barn interiors on affected premises shifted from wet cleaning and chemical disinfection procedures to less timeintensive and more cost-effective methods. The presence of organic material reduces the effectiveness of chemical disinfectants. Heat disinfection penetrates remaining organic matter after dry cleaning, eliminating the need for wet cleaning and saving time and money to complete VE. Data on the costs of these C&D activities were collected from farmer-reported expenditures on commercial table egg-layer farms under CCAs, which served as a detailed source of information. These expenditures were collected from producers who performed VE activities themselves during 2015 in lowa, Minnesota, and Nebraska for table egg-layer barns that ranged from 5,500 to 30,000 cubic yards. Financial plans typically included information on the costs per barn with barn size or information to estimate an average cost per barn. CCAs included the detailed labor, equipment, and supplies typically used to perform VE activities as outlined in Tables 1 through 4.

Many table egg-layer farms in the Midwest that used heat disinfection in the 2015 HPAI outbreak did not report electrician time to convert or modify heaters in barns in the CCA financial plans. Instead, many of those farms reported rental of external heating units. Therefore, the VE flat rates used estimates of heating cost for table egglayer barns and costs from the floor-raised flat rate to determine cost for rental of external heater units; mobilization of units to and from the farm; service technicians; and installation activities to supplement the barn preparation, dry cleaning, heating fuel, and barn temperature monitoring costs reported by table egg-layer farms.

USDA-APHIS-VS analyzed the data from the 2015 HPAI outbreak CCAs to calculate the VE per-cubic-yard flat rates for table egg-laying bird barns for use in future outbreaks. Supplemental data on rate inflation factors, personal protective equipment (PPE) used, and heat disinfection personnel, equipment, and supplies were also collected as described below. Farm-level response cost data used in this analysis did not include indemnity, USDA-APHIS-VS personnel, supplies, or overhead. Contractor fees were also not included. We used the Consumer Price Index reported from the Bureau of Labor Statistics to inflate some wages, equipment rental rates, and supply costs to 2020 dollars.

The quantity of disposable PPE needed to perform VE activities was estimated from the average total labor hours used by producers to complete an activity that required

PPE, assuming PPE would be worn for 3 hours and then discarded. An additional 5 percent was added to the total number of PPE units needed for tears and other incidences. PPE includes coveralls, gloves, boot covers, a cap or hood, and a respirator. We estimate that each responder changed out PPE once every 3 hours at a cost of approximately \$10/PPE unit. This estimate was used to ensure that the flat rate is adequately funded to protect the health and safety of producer employees and supervisors performing VE activities.

The average wage rates paid for farm labor were \$12.55/hour and for poultry workers, \$17.80/hour; both were collected from Indeed.com⁴. The average temporary general laborer wage rate collected from State and local level temporary employment agencies was \$19/hour, which included all expenses for worker's compensation, Federal and State income tax, Medicare tax, Social Security, etc., for the top 10 poultry-producing States⁵. Data were also collected from Indeed.com to support an average supervisor wage of \$20.74/hour.

How are flat rates calculated for table egg-laying bird barns and table egg storage and processing facilities?

The average amount of labor, equipment, and supplies used by activity was calculated across layer and pullet barns sized 5,500 cubic yards to 30,000 cubic yards, standardized by their respective cubic yards for each barn. A 22,000 cubic-yard barn was used to represent the barns involved in the outbreak in 2015, as well as common table egg-layer production barns. The average amount of labor, equipment, and supplies used included amounts to clean and disinfect manure management facilities (i.e., manure pits and barns).

We used rates for personnel, equipment, and supplies that were consistent with those used for floor-raised poultry where appropriate. The hourly wage used for poultry workers was calculated by multiplying the average wage rates paid for farm labor and poultry workers by 1.5 to give producers the funds to cover their poultry worker costs (including wages, unemployment insurance, taxes, other benefits, and possible overtime pay). The average of these wage rates with the temporary general laborer wage rate resulted in an overall poultry worker wage rate of \$22/hour. The supervisor wage rate of \$20.74/hour was also multiplied by 1.5; however, in comparing to the previous published rates, supervisor wage rates were 1.5 times higher than poultry worker wage rates. As a result, we set supervisor wage rates at \$33/hour. For supervisors, a higher hourly wage may reflect a higher level of oversight needed for VE. The average rental rates per day for equipment were collected from national level companies for the top 10 poultry-producing States. The backpack blower, air compressor, and shop vacuum were priced to reflect purchase of these items, to be retained by the producer rather than rented. The costs per unit (supplies) were inflated to 2020 dollars.

The average amount of labor hours or units (equipment or supplies) used was multiplied by the corresponding rates to get a total cost for each activity. These activity

⁴ Accessed October 2019 from Indeed.com

⁵ Arkansas, California, Georgia, Indiana, Iowa, New York, North Carolina, Ohio, Pennsylvania, and Texas

totals were summed per barn to get a total barn cost and divided by the average barn volume to get a VE cost per cubic yard. Recognizing some variability in activities, the calculated VE cost per cubic yard was rounded up to the next dime to account for moderate variations in VE costs. Table 5 lists the budget of activities.

The table egg storage and processing facilities require heat disinfection. In lieu of having specific cost data for table egg storage and processing facilities, the estimated costs for these activities for the table egg-layer VE flat rate were used as a proxy. Heat disinfection costs were around 11 percent of total VE costs, and again recognizing some variability in activities, the calculated VE cost per-cubic-yard was rounded up to the next dime to account for moderate variations in VE costs. Heat disinfection costs are the only ones needed for the table egg storage and processing facility VE flat rate because these facilities are maintained at a standard of cleanliness for food safety inspections.

Again, since USDA-APHIS-VS determined dry cleaning and heat disinfection to be the most cost-effective VE method, we used this method as the basis for the table egglaying bird barn VE flat rate calculation. Producers are responsible for conducting or contracting some or all activities for successful VE and may choose to use any effective VE method with the funds provided.

How much will USDA-APHIS-VS pay for the flat rate for table egg laying bird barns and table egg storage and processing facilities and how is it paid?

The per-cubic-yard VE flat rate for table egg laying bird barns is \$3.00 per cubic yard. The per-cubic-yard VE flat rate table egg storage and processing facilities is \$0.40 per cubic yard. The VE payments are made to the owner of the land and structures that housed the infected birds. Most often, this is the grower. USDA-APHIS-VS makes two payments directly to the owner of the land and structures, each for 50 percent of the total calculated value. Owners of the land and structures may request the initial payment via a VS 1-23 form and are paid after completing the flock plan. A (second) final payment is made after laboratory testing of environmental samples is completed with negative results reported. The flock plan should clearly outline the detailed process and timeline for the expected VE activities as well as expectations for all parties. USDA-APHIS-VS will provide continued oversight (including input and inspections) to ensure that the HPAI virus is quickly contained and fully eliminated.

How will the cubic yard included in the payment calculation be measured?

Federal response personnel measure cubic yards. Primarily these are case managers, site managers, or field reimbursement specialists, but any persons acceptable to the industry and State may perform this task. The cubic-yard measurement for a premises can be calculated by multiplying the length, width, and height in yards or feet of barns housing table egg-laying birds off the floor in cages. If the measurements are taken by feet, divide the cubic-foot measurement (length X width X height of the barn) by 27 to convert to cubic yards. The areas to be measured are barns that house birds, including manure pits attached to barns that house birds and under normal biosecurity conditions would be expected to have contamination, including the areas where flock management personnel work. The barn's height is to be measured at the exterior wall

height, not the peak of the barn roof. The table egg storage and processing facilities should be measured separately from the barns housing birds and areas where flock management personnel work because they have a separate VE flat rate.

How frequently will the flat rate for table egg laying birds be reviewed?

Flat rates for VE in poultry will be reviewed annually, just before the beginning of the highest risk period for avian influenza. Rates will be reviewed in early November and released in mid-November each year to incorporate October propane prices. These rates should be appropriate through the majority of the influenza season.

Table 5. Representative budget used to estimate a per-cubic-yard flat rate for egg-laying bird barns and table egg storage and processing facilities for VE in a representative 22,000 cubic-yard barn

VE Activities	Description of the Activity	Use	Unit	Rate (\$/unit)	Total (\$)
Barn preparation					
Personnel					
Poultry worker	Disassembly/reassembly of feeders, drinkers, fans, heaters, and other cleanable equipment	24	hr	\$22	\$528
Supervisor	All barn prep activities	2	hr	\$33	\$66
Equipment					
Skid steer /1	50 hp	0.5	day	\$490	\$245
Supplies					
PPE	Personal Protective Equipment	7	suits	\$10	\$70
Dry cleaning					
Personnel					
Poultry Worker	All dry cleaning activities	975	hr	\$22	\$21,450
Supervisor	All dry cleaning activities	144	hr	\$33	\$4,752
Equipment					
Pay loader /1	150 hp	1	day	\$531	\$531
Skid steer /1	50 hp	4.5	day	\$490	\$2,205
Blower /2	Backpack blower	4	per barn	\$300	\$1,200
air compressor /2	100 psi with hose	2	per barn	\$300	\$600
Shop Vacuum/2	For feed troughs and other dry cleaning activities	1	per barn	\$150	\$150

VE Activities	Description of the Activity	Use	Unit	Rate (\$/unit)	Total (\$)
Lifts /1	All types	6	day	\$453	\$2,718
Supplies					
PPE	Personal Protective Equipment	342	suits	\$10	\$3,420
Dumpster	All dry cleaning activities	1	dumpster	\$326	\$326
Brooms and Scrapers	All dry cleaning activities	1	per barn	\$1,520	\$1,520
Wet cleaning and disinfection of eq	uipment that will not be heat disinfed	cted			
Personnel					
Poultry Worker	All washing and disinfection of equipment that will not be heat disinfected	121	hr	\$22	\$2,662
Supervisor	All washing and disinfection of equipment that will not be heat disinfected	3	hr	\$33	\$99
Equipment					
Pressure washer/1	PTO-powered for equipment that will not be heat disinfected	3	day	\$300	\$900
Tractor/2	for PTO-powered equipment	3	day	\$200	\$600
Water trailer /2	1,000 to 1,500 gallon	3	day	\$154	\$462
Supplies					
Disinfectant	Virkon	12	tubs	\$66	\$792
Detergent	For cleaning equipment	2	tub	\$38	\$76
PPE	Personal protective equipment	40	suits	\$10	\$400
Water system cleaner	Cid 2000	16	gal	\$32	\$512
Heat Disinfection					
Personnel					
Poultry worker	Installation of thermometers, monitor and record temperatures, sealing barn	102	hr	\$22	\$2,244
specialized labor	Service technician activities	1	per barn	\$679	\$679
Equipment					
Heaters	1 million BTU per barn	4	heaters	\$2,120	\$8,480

VE Activities	Description of the Activity	Use	Unit	Rate (\$/unit)	Total (\$)
Ducting/2	ducting	1	per barn	\$195	\$195
Mobilization/1	mobilization-in and out	1	per barn	\$2,555	\$2,555
Supplies					
Fuel	Fuel for heaters (for the representative 22,000 Cubic-yard barn)	0.25	gal/cu yd	\$0.80	\$4,400

1/ Equipment rates (\$/hr) include equipment, mobilization, operator, and fuel cost.

2/ Equipment rates (\$/hr) include the equipment and mobilization cost.

For more information, contact:

USDA-APHIS-VS-CEAH NRRC Building B, M.S. 2E7 2150 Centre Avenue Fort Collins, CO 80526-8117 970.494.7200

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720–2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250–9410, or call (800) 795–3272 (voice) or (202) 720–6382 (TDD). USDA is an equal opportunity provider and employer.

Mention of companies or commercial products does not imply recommendation or endorsement by the U.S. Department of Agriculture over others not mentioned. USDA neither guarantees nor warrants the standard of any product mentioned. Product names are mentioned solely to report factually on available data and to provide specific information.