2022

Comprehensive Aquaculture Health Program Standards (CAHPS)

PREMISES WORKBOOK

CAHPS General Premises Information			
Premises Name			
APHIS/CAHPS/RAEF ID			
CAHPS Participation	Farm ☐	National (count) ☐ National (confidence) ☐	Global ☐
AAHT Point of Contact			
Name			
Email			
Cell/Phone			

Decision Tree Evaluations

Population Description (Figure 1)				
Population Description			**Yes**	**No**
	Is the premises layout well-described?			
	Are population groupings well-defined?			
	Are animal flow patterns and critical control (potential pathogen entry) points identified?			
	Should the entire population on the premises be treated as a single epidemiologic unit?			
Decision Outcome (Circle outcome)	**Single Population**	**Multiple Populations**		

CAHPS Pillars (Figure 2)			
Pillar	**CAHPS Element**	**Yes**	**No**
1	Aquatic Animal Health Team		
2	Risk Evaluation and Mitigation		
3	EDS and Surveillance		
4	Disease Investigation and Reporting		
5	Response and Recovery		
Decision Outcome	Are all CAHPS Pillars Implemented?		

Risk Evaluation (Figure 3)				
Risk Evaluation			**Yes**	**No**
	Has the AAHT identified pathogens of concern?			
	Is the premises' proximity to other related aquatic animal populations known and described?			
	Are the premises' business (or other) connections to other aquatic animal operations known and described?			
	Has a written risk evaluation of pathways for pathogen introduction been completed?			
	Is the assessment current?			
	Is the risk evaluation used as a basis for design of biosecurity and surveillance strategies?			
Decision Outcome (Circle outcome)	**Complete**	**Incomplete**		

Representative Sampling (Figure 4)			
		Yes	**No**
Representative Sampling	Are surveillance sampling strategies defined and appropriate at the population-level?		
	Are surveillance sampling strategies defined and appropriate at the animal-level?		
	Are sampling decisions documented and available for review?		
Decision Outcome	Sampling represents the larger population and is reliable for official assessment purposes.		

Early Detection System/Observational (Figure 5)				
			Yes	**No**
Early Detection System/Observational	Are clinical conditions likely to be seen and recognized as abnormalities on the premises?			
	Are observations representative of the larger population?			
	Are health issues communicated and effectively investigated?			
	Are detections likely to be timely?			
Decision Outcome (Circle One)	**Sufficient***	**Insufficient**		

***If determined to be sufficient – can use next table to determine CAHPS EDS credit**

CAHPS EDS Obs Credit (Figure 10)			
Early Detection System/Observational Credit Scoring		**Yes**	**No**
	Has the EDS/observational criteria been met for each pathogen of concern?		
	Are susceptible species or sentinels/proxies represented in the sample collection?		
	Would the pathogen CLEARLY raise suspicion if introduced by one or both of the following -		
	1) Impacting a large portion of the population in a small way, **and/or**		
	2) Impacting some (even small) portion of the population in a dramatic,		

	recognizable fashion.			
Decision Outcome (Circle One)	**If yes to all, CREDIT 0.33 pts**	**NO CREDIT**		

Early Detection System/Screening (Figure 6)				
Early Detection System/Screening			**Yes**	**No**
	Are *routine* morbidities or mortalities screened for additional assurance of normal health status?			
	Do positive results trigger appropriate responses (whether further testing, investigation, or corrective actions)?			
	Are screenings frequent and substantial?			
	Are detections likely to be timely?			
Decision Outcome (Circle One)	**Sufficient**	**Insufficient**		

CAHPS EDS Screening Credit (Figure 11)				
Early Detection System/Screening Credit Scoring			**Yes**	**No**
	Has the EDS/screening criteria been met for each pathogen of concern?			
	Are susceptible species or sentinels/proxies represented in the sample collection?			
	Do the screened animals count as unique samples? Yes if the following is true -			
	The tests were conducted on animals that are not already (or to be) counted under Official Surveillance. In other words, this credit only applies if the Screening EDS and OS tests capture different animals. If multiple tests are run on a single animal, use only those run through OS, or use the most sensitive (if none are OS) for EDS credit purposes, or consult a statistician or epidemiologist for direction.			
Decision Outcome (Circle One)	**If yes to all, CREDIT 0.33 pts**	**NO CREDIT**		

Official Health Surveillance (Figure 7)			
Established Design Health Target: (check box)	2%/95% (CAHPS Global; WOAH and EU Standard) ☐ 5%/95% (National; confidence based) ☐ 5%/95% (National; count based) ☐ Other: _____ ☐		
		Yes	**No**
Official Health Surveillance	Are laboratory, assay, species, and tissue selections appropriate for the pathogens of concern?		
	Are samplings conducted by an APHIS-recognized health professional?		
	Are samplings representative of the larger population?		
	Are sample sizes and frequencies appropriate following one of these options -		
	1) Baseline rate, e.g., 175 animals (or pooling-adjusted equivalent) or their proxy are tested twice a year. Tests may accrue over each 6-month period to meet target numbers, as long as conditions at the times of collection are conducive to detection. **Sampling meets the 95%/2% target. OR**		
	2) Numbers, fewer than baseline, follow pathogen and/or risk-based modifications. Tests may accrue over each 6-month period to meet target numbers, as long as conditions at the times of collection are conducive to detection. Strategy and results are documented and available for review. *Note, this option is only available AFTER the enrollment stage.* **Sampling meets the 95%/2% target. OR**		
	3) Numbers, fewer than baseline, follow trade defined targets and frequency. **Sampling meets trade partner targets.**		
	Strategy and results are documented and available for review at 6 month intervals.		
Decision Outcome	**Sampling meets official health surveillance**		

	requirements.		

CAHPS Risk Introduction Pathways Assessments

- **Water Sources**
- **Animal Sources**
- **Feed and supplements**
- **Non-human Vectors**
- **Fomites and Humans**

Water Source* Biosecurity (Figure 8A)					
				Yes	**No**
Water Source Biosecurity	Influent waters meet *one or more* of the following criteria:				
	• There is a natural absence of aquatic animals in source waters (e.g., groundwater without surface access), **or**				
	• Water is sourced from a region with an APHIS-recognized freedom status for pathogens of concern, **or**				
	• There is a natural absence of conducive conditions for pathogens of concern (e.g., the environment precludes pathogen persistence, or the host is not susceptible to infection).				
	AND,				
	• There is no plausible mechanism (e.g., floods, storm surge, etc.) for exposure to surrounding surface waters.				
	Other mitigations required**				
Decision Outcome (Circle one)	**SECURE**	**MANAGED**	**INSUFFICENT**		
	3 risk mitigation points				

*Complete this table for each influent water source. For example, freshwater well, saltwater well, surface water etc.

** If yes, provide description of all mitigations in place.

Animal Source Biosecurity (Figure 8B)					
Animal Biosecurity	Are the following statements true for the premises?				
				Yes	**No**
	Animals are either sourced internally (from cohorts with verified equal or higher health status), or from premises or regions with APHIS-recognized disease freedom for all pathogens of concern, **AND**				
	Exposure to pathogens or carryover from previous life stages or cohorts is eliminated by				
	Hard breaks, e.g., all-in all-out, with cleaning, disinfection and fallowing, as appropriate for pathogens of concern, **AND,**				
	For semi-open or fully open systems, there is an absence of susceptible wild species in the region, **AND,**				
	Processes are documented and monitored				
	Other mitigations required**				
Decision Outcome (Circle one)	**SECURE**	**MANAGED**	**INSUFFICENT**		
	3 risk mitigation points				

** If yes, provide description of all mitigations in place.

* If yes, provide description of all mitigations in place.

Feed and Supplement Biosecurity (Figure 8C)					
Feed and Supplement Biosecurity	All feed and supplement sources meet one or more of the following criteria:				
				Yes	**No**
	All live feed is internally sourced (and culture water meets the secure definition), **and/or**				
	Feed and supplements derive from an APHIS-recognized disease freedom source, **and/or**				
	Feed and supplements are implausible pathways (per OIE or APHIS guidance) for the pathogens in question.				
	Processes are documented and monitored				
	Other mitigations required**				
Decision Outcome (Circle one)	**SECURE**	**MANAGED**	**INSUFFICENT**		
	3 risk mitigation points				

Non-human Vector Biosecurity (Figure 8D)					
Non-human Vector Biosecurity	**Are the following statements true for the premises?**				
				Yes	**No**
	Regarding biological vectors, either - (a) biological vectors are an implausible route (the pathogen is not transmitted by biological vectors), **OR**				
	(b) there is a regional absence of biological vectors (primary and/or intermediate hosts), **AND**				
	Regarding all types of vectors (biological and mechanical), either (a) facility design and pest management effectively exclude vectors (aquatic, avian and terrestrial wildlife, livestock, pets, parasites, pests), **OR**				
	(b) there is an APHIS-recognized disease freedom status for regions within the home and migratory range of plausible vectors, **AND,**				
	Processes are documented and monitored.				
	Other mitigations required**				
Decision Outcome (Circle one)	**SECURE**	**MANAGED**	**INSUFFICENT**		
	1 risk mitigation points				

Fomites and Humans Biosecurity (Figure 8E)					
Fomites and Humans Biosecurity	**Are the following statements true for the premises?**				
				Yes	**No**
	Access to the premises is restricted, and includes a visitor/provider log, c/d protocols at entry, and a temporal lag between site visits.				
	Vehicles, shipping containers, shipping water, packaging (including water), and material deliveries are site-specific or first/single use, and mitigations preclude contamination during transit. **AND**,				
	Either of the following is true -				
	(a) equipment and gear are site-specific, **OR**				
	(b) the premises is in a region with APHIS-recognized disease freedom status, and any shared equipment or gear with potential prior contact with aquatic animals (or their water, wastes or products) receives c/d appropriate to pathogens of concern prior to entry				
	Processes are documented and monitored.				
	Other mitigations required** Any shared vehicles, containers, packaging, materials, gear, or equipment with potential prior contact with aquatic animals (or their water, wastes or products) receives c/d or treatment appropriate to pathogens of concern prior to entry. Please share justification and details with APHIS Aquaculture Commodity Health Center for discussion.				
Decision Outcome (Circle one)	**SECURE**	**MANAGED**	**INSUFFICENT**		
	1 risk mitigation points				

Pathogen-based Sampling Reductions (Figure 12) *Complete these steps for each pathogen of concern* *(Official surveillance test balance)*		
Pathogen-based sampling reduction	[redacted]	
	Was EDS **Observation** credit awarded for this pathogen?	0.33 x pathogen
	Was the EDS **Screening** credit awarded for this pathogen?	0.33 x pathogen
	Official Surveillance (OS) has been determined to be baseline sample size or Pool-adjusted Target and complete these steps -	[redacted]
	(1) Sum the Observational EDS credit and the Screening EDS credit (use percent/100, e.g., 0.33 rather than 33%).	Total EDS credit
	(2) Subtract the Total EDS Credit from 1.	1 – EDS Credit (Result is the sample proportion remaining for Official Surveillance to meet)
	(3) Multiply this remaining proportion by the sample size (number of animals) previously set for Official Surveillance.	**This is the Official Surveillance Test Balance (animal sample size), that incorporates all pathogen-based reductions.**

Risk Mitigation Score (Figure 13) *Complete these steps for each pathogen of concern*			
Risk Mitigation Score		**Yes**	**No**
	Completed Pathways Assessment		
	Were any pathways RED (insufficient)?		
	If no, complete these 4 steps -	**Score Tally**	
	1) Tally the risk mitigation points assigned to "secure" (dark green) pathways in Figures 8A-8E.		
	2) Subtract 2 points if the pathogen of interest is endemic in the State or connected regions (per business network, waterway, or geographic boundaries), or if the pathogen is emerging globally (i.e., potentially changing the population's risk status).		
	3) Subtract another 2 points if the premises has experienced a biosecurity breach as evidenced by detection of (any) OIE listed or emerging pathogen in the past 2 years.		
	4) Add 2 points if the premises has accrued 10+ yrs of negative (or confirmed negative) OS data and compliance with CAHPS pillars.		
Risk Mitigation Score TALLY			

Premises Freedom Eligibility (Figure 14)			
Premises Freedom Eligibility		Yes	No
	Can the premises demonstrate 2+ years history of compliance with CAHPS Pillars?		
	Has the Premises accrued 2+ years history of official surveillance (OS) *negative for the named pathogens*?		
	Are test results reviewed and maintained by the AAHT?		
	Are pathogen detections and suspect results reported in a timely fashion?		
	Are all 5 introduction pathways rated managed or secure for the named pathogens (Figures 8A-8E)?		
Decision Outcome (Circle one)	If all yes, premises may claim freedom for named pathogens.		

Risk-based Sampling Eligibility (Figure 15)			
Risk-based Sampling Eligibility		Yes	No
	Has the premises achieved CAHPS Global with (named pathogen) Premises Freedom status?		
	Is the Risk Mitigation Score ≥ 2		
Decision Outcome (Circle one)	If all yes, premises is eligible for risk-based reductions in Official Surveillance sampling for the named pathogen(s).		

CAHPS Pathogens of Concern List - Worksheet

Pathogen Name	Abbreviation or Common Name	2% APPL	5% APPL	10% APPL	CAHPS Official Surveillance Test Balance Score
Fish WOAH Listed Pathogens					
Aphanomyces invadens	Epizootic ulcerative syndrome (EUS)	☐	☐	☐	
Epizootic hematopoietic necrosis virus	EHN	☐	☐	☐	
Gyrodactylus salaris		☐	☐	☐	
Infectious salmon anemia virus HPR-deleted	ISA pathogenic	☐	☐	☐	
Infectious salmon anemia virus HPR0	ISA non-pathogenic	☐	☐	☐	
Infectious hematopoietic necrosis virus	IHN	☐	☐	☐	
Koi herpesvirus	KHV	☐	☐	☐	
Red sea bream iridovirus	RSIV	☐	☐	☐	
Salmonid alphavirus	SAV	☐	☐	☐	
Spring viremia of carp virus	SVCV	☐	☐	☐	
Tilapia lake virus	TILV	☐	☐	☐	
Viral hemorrhagic virus	VHS	☐	☐	☐	
Fish Pathogens of Concern (not WOAH Listed)					
Aeromonas salmoncida	furunculosis	☐	☐	☐	
Ceratomyxa shasta		☐	☐	☐	
Channel catfish virus	CNN	☐	☐	☐	
Heterosporosis		☐	☐	☐	
Infectious pancreatic virus	IPN	☐	☐	☐	
Lactococcus garvieae					
Largemouth bass virus	LMBV	☐	☐	☐	
Myxobolus cerebralis	MXY Whirling disease	☐	☐	☐	
Oncorhynchus masou virus	OMS	☐	☐	☐	
Piscine myocarditis virus	PMV	☐	☐	☐	
Piscirickettsia salmonis		☐	☐	☐	
Renibacterium salmonarum	Bacterial kidney disease	☐	☐	☐	
Salmon Gill Poxvirus	SGPV	☐	☐	☐	
Schyzocotyle acheilognathi	Asian tapeworm	☐	☐	☐	
Viral nervous necrosis/Viral encephalopathy retinopathy	*VNN/VER*	☐	☐	☐	
Yersinia ruckeri	Enteric redmouth disease	☐	☐	☐	

Mollusk WOAH Listed Pathogens					
Abalone herpesvirus		☐	☐	☐	
Bonamia ostreae		☐	☐	☐	
Bonamia exitiosa		☐	☐	☐	
Marteilia refringens		☐	☐	☐	
Perkinsus marinus	Dermo	☐	☐	☐	
Perkinsus olseni		☐	☐	☐	
Xenohaliotis californiensis	Withering syndrome of abalone	☐	☐	☐	
Mollusk Pathogens of Concern (not WOAH Listed)					
Haplosporidium nelsoni	MSX				
Hemocytic neoplasia of oysters		☐	☐	☐	
Clam neoplasia		☐	☐	☐	
Marteiliodes chungmuensis		☐	☐	☐	
Mikrocytos mackini	Denman Island Disease	☐	☐	☐	
Ostreid herpesvirus -1	OSHV1	☐	☐	☐	
Crustacean WOAH Listed Pathogens					
Acute hepatopancreatic necrosis disease	AHPND Early mortality Syndrome (EMS)	☐	☐	☐	
Aphanomyces astaci	Crayfish plague	☐	☐	☐	
Decapod iridescent virus 1	DIV1	☐	☐	☐	
Hepatobacter penaei	Necrotizing hepatopancreatitis	☐	☐	☐	
Infectious hypodermal and hematopoietic necrosis virus	IHHNV	☐	☐	☐	
Infectious myonecrosis virus	IMV	☐	☐	☐	
Macrobrachium rosenbergii nodavirus	Whitetail disease	☐	☐	☐	
Taura Syndrome virus	TS	☐	☐	☐	
White spot syndrome virus	WSSV	☐	☐	☐	
Yellow head virus -1	YH1	☐	☐	☐	
Crustacean Pathogens of Concern (not WOAH Listed)					
Baculovirus penaei virus	BP	☐	☐	☐	
Covert Mortality Nodavirus	CMV	☐	☐	☐	
Enterocytozoon hepatopenaei	EHP	☐	☐	☐	
Hepatopancreatic parvovirus	HPV	☐	☐	☐	
Laem-Singh Virus	LSV	☐	☐	☐	
Monodon Baculovirus	MBV	☐	☐	☐	
Mourilyan Virus	MV	☐	☐	☐	
Necrotizing hepatopancreatitis bacterium	NHB	☐	☐	☐	

Penaeus vannamei nodavirus	PvNV	☐	☐	☐	
Other Pathogens of Concern					
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	

CAHPS
Comprehensive Aquaculture Health Program Standards

CAHPS-Global Premises Freedom Security Worksheet

	Secure		Managed		Insufficient	
	Negligible risk of pathogen introduction via pathway		***Minimized risk of pathogen introduction via pathway***		***Pathway is UNCERTAIN (or not minimized)***	
Water	**AT LEAST ONE OF THE FOLLOWING:**		**AT LEAST ONE OF THE FOLLOWING:**		**AT LEAST ONE OF THE FOLLOWING:**	
	> Natural absence of aquatic animals in source waters, **or**	☐	> Mitigations to remove or inactivate pathogens in source water, **or**	☐	> UNCERTAIN (or not minimized) due to none of the above, AND/OR	☐
	> Natural absence of conducive conditions for pathogens of concern, **or**,	☐	> Locally recognized health status of source region	☐	> NOT documented & monitored	☐
	> APHIS-recognized health status of source region (or country)	☐	**AND** > Documented and monitored	☐		
	AND > Documented and monitored	☐				
Examples	*> Groundwater (well, spring) without surface access* *> Environment or host precludes pathogen persistence (do we need a reference table?)* *> Documentation includes SOPs, and records or other evidence of implementation, available during inspection*		*> UV treatment of source water appropriate for pathogen inactivation (do we need a reference table?)* *> Remove or test aquatic animals from source water*			
Animals	**ALL OF THE FOLLOWING:**		**ALL OF THE FOLLOWING:**		**AT LEAST ONE OF THE FOLLOWING:**	
	> Internally sourced animals are derived from lots with verified equal or higher health status, **and,**	☐	> Mitigations and/or testing demonstrate that incoming animals have a health status equal to or	☐	> UNCERTAIN (or not minimized) due to none of the above, **and/or**	☐

			greater than the resident population, **and**			
	> Externally sourced animals are derived from a CAHPS Global Premises or from populations with APHIS-recognized disease freedom status, **and**	☐	> If no to all-in all-out and hard breaks, then exposure to previous life stages is only permitted if the previous life stage is verified equal or higher health status, **and**	☐	> NOT documented & monitored	☐
	> All-in all-out and hard breaks prevent exposure from previous life stages, **and**	☐	> Documented and monitored	☐		
	> Documented and monitored	☐				
Examples	*> Hard break examples could include (1) All-in, all-out with c/d and synchronized (bay management) fallow between YC (this assumes no susceptible wild species in the region), or (2) All-in, all-out with c/d of tanks and fallow between YC* *> Documentation includes SOPs, and records or other evidence of implementation, available during inspection*		*> Lot based testing from a source with greater than 2-year health history of the premises verified by appropriate authority/oversight for animal health;* *> Quarantine animals (including stressors and/or temperature stress to ensure adequate pathogen detection if present) and repeated test negative prior to quarantine release;* *> Permanent quarantine with test/release of progeny; If eggs, combine one of the above with surface disinfection treatment*			
Feed and Supplements	**AT LEAST ONE OF THE FOLLOWING:**		**ALL OF THE FOLLOWING:**		**AT LEAST ONE OF THE FOLLOWING:**	
	>Implausible route, **or**,	☐				
	> Internally sourced live feed (and culture water meets secure definition), **or**	☐	> Mitigations are in place to inactivate pathogens of concern, **AND**	☐	> UNCERTAIN (or not minimized) due to none of the above, **AND/OR**	☐
	> Ingredients are treated in accordance with international standards for feed safety and security, **or**	☐				

	> APHIS-recognized disease freedom source	☐	> Documented and monitored	☐	> NOT documented & monitored	☐
	AND > Documented and monitored	☐				
Examples	*> Implausible would include feed ingredients of non-susceptible species appropriately sourced and handled to prevent contamination* *> Documentation includes SOPs, and records or other evidence of implementation, available during inspection*		*> Reputable source, plus test and ship, confirm safety of source or product* *> Processing treatments to inactivate pathogens -* *> Heat-extruded pelleted feed,* *> Shipment health attestation (and negative testing results) AND 2+ yr history plus audit, support pathogen absence* *> Certification or audit confirms manufacture/distribution biosecurity*		*> Supplements, probiotics, and other animal-derived products that do not have a certificate of analysis for quality control and pathogen inactivation* *>Products that contain other similar animal species being fed to resident population*	
Vectors and non-human Biosecurity	**AT LEAST ONE OF THE FOLLOWING: (re: biological vectors)**		**ALL OF THE FOLLOWING:**		**AT LEAST ONE OF THE FOLLOWING:**	
	> Implausible route (not transmitted by biological vectors), or	☐	> Terrestrial livestock and pets are also deterred or are restricted to premises of equal or higher health status for the same pathogens, **and**	☐		
	> Regional absence of vectors (primary and/or intermediate hosts)	☐	> Integrated pest management strategies deter parasite vectors and/or their intermediate hosts, **and**	☐	> UNCERTAIN (or not minimized) due to none of the above, **AND/OR**	☐
	AND		> Mitigations (and integrated pest management strategies) deter plausible vectors including aquatic, avian and terrestrial wildlife, **and**	☐		
	AT LEAST ONE OF THE FOLLOWING: (re: both mechanical and biological vectors)		**AND** > Documented and monitored	☐	> NOT documented & monitored	☐
	> APHIS-recognized disease freedom status for regions within home or	☐				

	migratory range of plausible vectors, or		[redacted]			
	> Facility design (and integrated pest management) effectively excludes vectors (aquatic, avian and terrestrial wildlife, and livestock, pets, parasites, and pests)	☐				
	AND > Documented and monitored					
Examples	Documentation includes SOPs, and records or other evidence of implementation, available for review during inspection.		> Integrated pest management > Farm pets are restricted to non-animal areas			
Fomites & Humans	**ALL OF THE FOLLOWING:**		**ALL OF THE FOLLOWING:**		**AT LEAST ONE OF THE FOLLOWING:**	
	> Human access to premises is restricted, including visitor/provider log, c/d protocols at entry, and temporal lag between site visits, **and**	☐				
	> Vehicles, containers, and material deliveries are site-specific, or first/single use	☐	> Human access to premises is restricted, including visitor/provider log, c/d protocols at entry, and temporal lag between site visits, **and**	☐	> INCONSISTENT mitigations, **and/or**	☐
	AND					
	AT LEAST ONE OF THE FOLLOWING:		> Any shared vehicles, containers, materials, gear, or equipment with potential prior contact with aquatic animals (or their water, wastes or products) receives c/d prior to entry	☐	> NOT documented and monitored	☐
	(1) Site-specific equipment and gear, **or**	☐				
	(2) APHIS-recognized disease freedom status for the region, and any shared equipment or gear with potential prior	☐	**AND** > Documented and monitored	☐	[redacted]	

	contact with aquatic animals (or their water, wastes or products) receives c/d prior to entry				
	AND > Documented and monitored	☐			
Examples	> Documentation includes SOPs, and records or other evidence of implementation, available for review during inspection				