

BANTAY ASF SA BARANGAY: REPOPULATION OF SWINE FARMS IN ASF INFECTED ZONES

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PIC Philippines

7- 6 -2020

Pork Supply Shortage Looms

BusinessWorld Today's Paper Wednesday - Apr 29, 2020

DA sees pork shortage by year end, suggests poultry for protein

April 24, 2020 | 7:25 pm

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REUTERS

philstar GLOBAL



Imports of meat products, particularly pork, have slowed down and the trend is expected to persist due to the increase in the number of COVID-19 cases, according to the Meat Importers and Traders Association

AFP/File

'Pork shortage looms due to ASF, coronavirus'

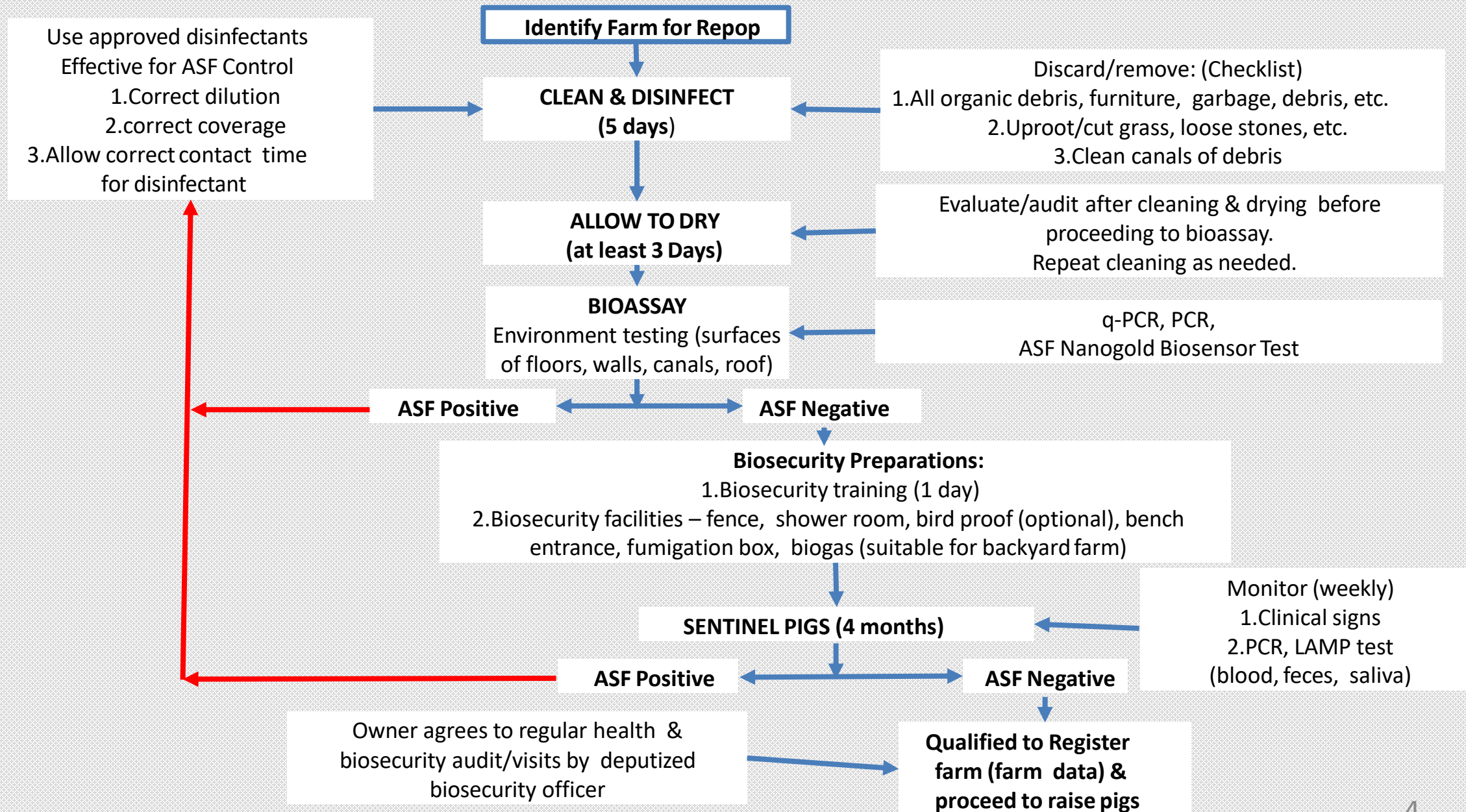
Louise Maureen Simeon (The Philippine Star) - March 11, 2020 - 12:00am

MANILA, Philippines — Consumers should brace for a possible shortfall in pork as African swine fever (ASF) continues to spread and meat imports decline amid global trade disruption due to the coronavirus disease-2019 (COVID-19).

OUTLINE of PROCEDURE for REPOPULATING ASF INFECTED SWINE FARM

- I. Identify & Qualify Farm for Repopulation
- II. Clean and disinfect farm facilities & surroundings
- III. Biosecurity (facilities & mind set)
- IV. Sentinel Pigs
- V. Register as a Business and proceed with swine raising.
- VI. Agree to Regular Farm Visit for Health Monitoring, Surveillance & Biosecurity Evaluation

Outline of Farm Repopulation Procedure Post- ASF Infection



Note: Procedure can be adapted to farms that depopulated but were not infected or partially depopulated.

Qualifications of Farm for Repopulation

The following parameters must be complied with to qualify for repopulation:

- 1. The farm has been emptied of **ALL** pigs for at least 3months**
2. There are no new ASF outbreaks within 1km radius of the farm (see surveillance protocol)
3. The farm owner agrees to strictly follow PCSP procedure for repopulation, Biosecurity, monitoring & surveillance.

ASFV Survival Time

Meat with and without bone and ground meat	-	105 days
Salted meat	-	182 days
Cooked meat (min of 30 minutes at 70 °C)	-	0
Dried meat	-	300 days
Smoked and deboned meat	-	30 days
Frozen meat	-	1000 days
Chilled meat	-	110 days
Offal	-	105 days
Skin/Fat (also dried)	-	300 days
Blood stored at 4 °C	-	18 months
Soil (underneath carcass – expt'l) ¹	-	112 days
Lake water (summer) ¹	-	50 days
Manure at room temperature	-	11 days
Putrefied blood		15 weeks
Contaminated pig pens		1 month

References:

¹Epidemiological considerations on African swine fever in Europe 2014–2018
Depner, et al BMC open access jan 2019

Beltran- Alcrudo et al., 2017
Resilience of ASFV in various environmental conditions

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BANTAY ASF sa BARANGAY PROJECT

SURVEILLANCE : RECOMMENDED ASF TESTING PROTOCOL

Active surveillance within the Quarantine zone (1km radius). An infected area will remain in quarantine for 90 days.



Active surveillance Outside the Quarantine area (7 km radius)



Release from Quarantine – After 90 days, if no new cases are detected within the Infected area, testing can begin to release the area from quarantine. All premises within the Infected area will be retested at random on day 150, 165 and 180 at a 10% premises-level.



D0 ← (PERIOD OF OBSERVATION FOR CLINICAL SIGNS OF ASF) → 150 ← 165 ← 180

FARMS RELEASED FROM QUARANTINE ARE SUBJECT TO BI-ANNUAL ASF RANDOM TESTING FOR ASF.

Qualifications of Farm for Repopulation

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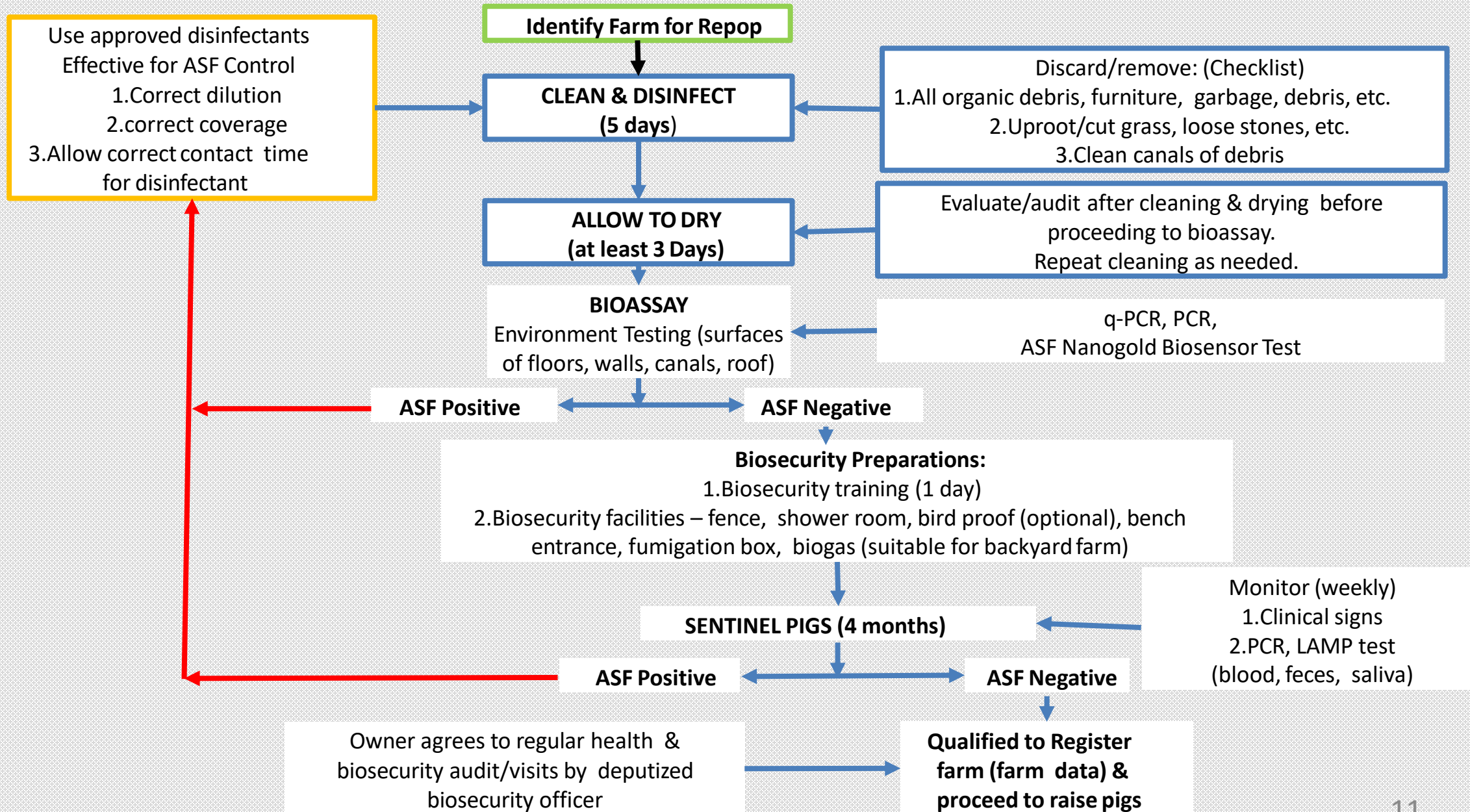
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Outline of Farm Repopulation Procedure Post- ASF Infection



Cleaning & Disinfection

Objectives:

1. Remove all organic debris from the farm
2. Clean, wash and disinfect all non-movable facilities
 - use only approved disinfectant for ASF control
3. Clean and disinfect all equipment and other movable farm facilities
4. Clean, disinfect and spray hydrated lime on grounds around the buildings.
5. Empty and lime lagoon and pits where pig manure are collected
6. BAI Deputized Biosecurity Officer to guide farm in proper cleaning & disinfection.

There are disinfectants proven effective for deactivating the ASF virus:

(From: PIC Russia)

Disinfectant In RU	Disinfectant In ENG	Constituents	min concentration	min exposure hours	consumption litr/m2
КЕМИЦ ИД	Quats w/ glutaraldehyde	quaternary ammonium compound - alkyldimethylbenzylammonium chloride (12%), synthetic bactericidal polyelectrolyte based on guanidine compounds - polyhexamethyleneguanidine hydrochloride (2.5%), glutaraldehyde (8.0%) and auxiliary components: alkyl glucoside, isopropyl alcohol, organic acids	0,5	3	0,3
Вироци Д	Quats alcohol aldehyde	quaternary ammonium compound - diethyldimethyl ammonium chloride 78 g / l; alkyldimethylbenzyl ammonium chloride 170.6 g / l, Glutaraldehyde 107.25 g / l, Isopropanol 150 g / l, Cedar oil: 20 g / l.	1	3	0,3
Дезкон тен	Quats + peroxide	tetramethylene diethylene tetramine (35%), and as surfactant surfactants (alkyldimethylbenzylammonium chloride, didecyldimethylammonium chloride)	2	12	0,5
Экоцид С	Peroxide salts	triple salt of potassium peroxomonosulphate - 50%, as well as auxiliary substances: surfactant (dodecylbenzene sodium sulfonate), organic acids (malic, sulfamic), inorganic buffer systems (sodium chloride and sodium polyphosphate), Azo diestaff dye and perfume Citron with lemon smell.	3	1	0,3
СФБИС ЕПТ-М	Double chain quats	N, N-bis (3-aminopropyl) dodecylamine 3.5%, Alkyl dimethylbenzylammonium chloride (АДБАН) 12%	4	1	0,3





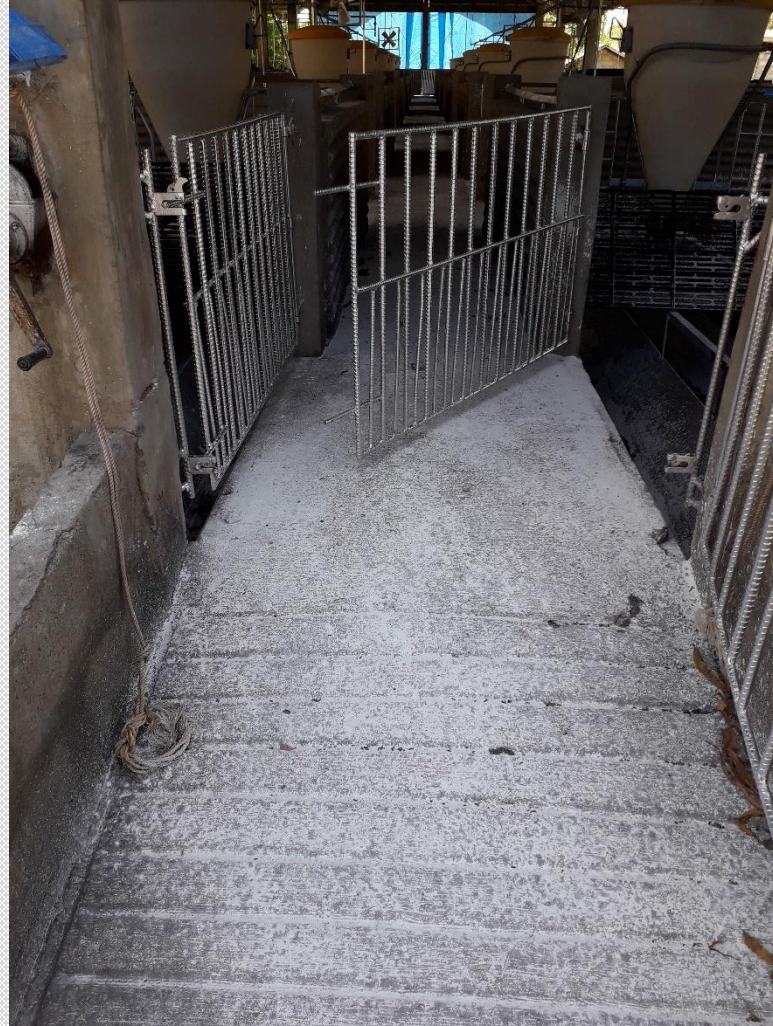
HIGH PRESSURE WASHERS



FOCUS ON EQUIPMENT WHERE VIRUSES ARE LIKELY TO PERSIST.



FEEDERS



WALKWAYS



FANS



CANALS & SLATTED FLOORS – REMOVE ALL ORGANIC DEBRIS, TREATED WITH CAUSTIC SODA and SPRAYED WITH HYDRATED LIME



**FEED DIVIDERS
INSTALLED**



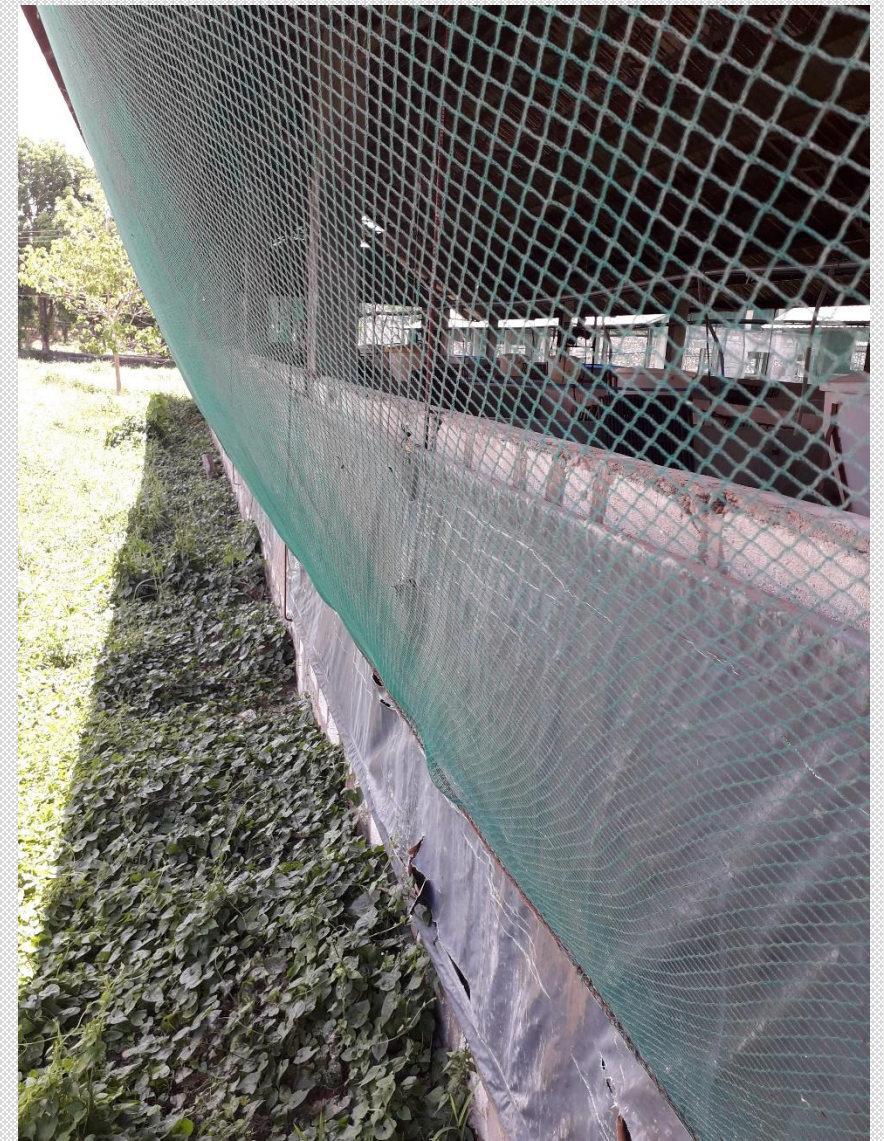
GESTATION PENS PAINTED



**FEED BINS, TUBES &
STOPPERS CLEANED and
DRIED**



CONCRETE FLOORS WASHED, TREATED WITH CAUSTIC SODA & SPRAYED WITH HYDRATED LIME



REPAIR & INSTALL BIRD PROOFING NETS

MMM, DVM 4-27-20

REPOPULATION OF SWINE FARMS IN ASF INFECTED ZONES



REMOVE ALL ORGANIC DEBRIS & CUT GRASS TO EXPOSE RAT BURROWS & HIDING PLACES OF OTHER PESTS



**PESTS and
SCAVENGERS**



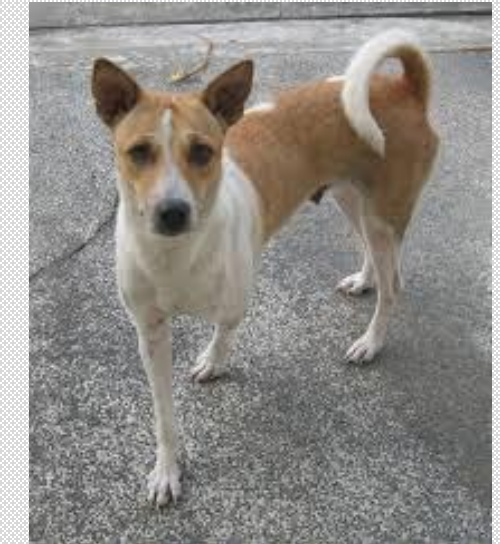
Uwak (Crow)



Tagak (Heron)

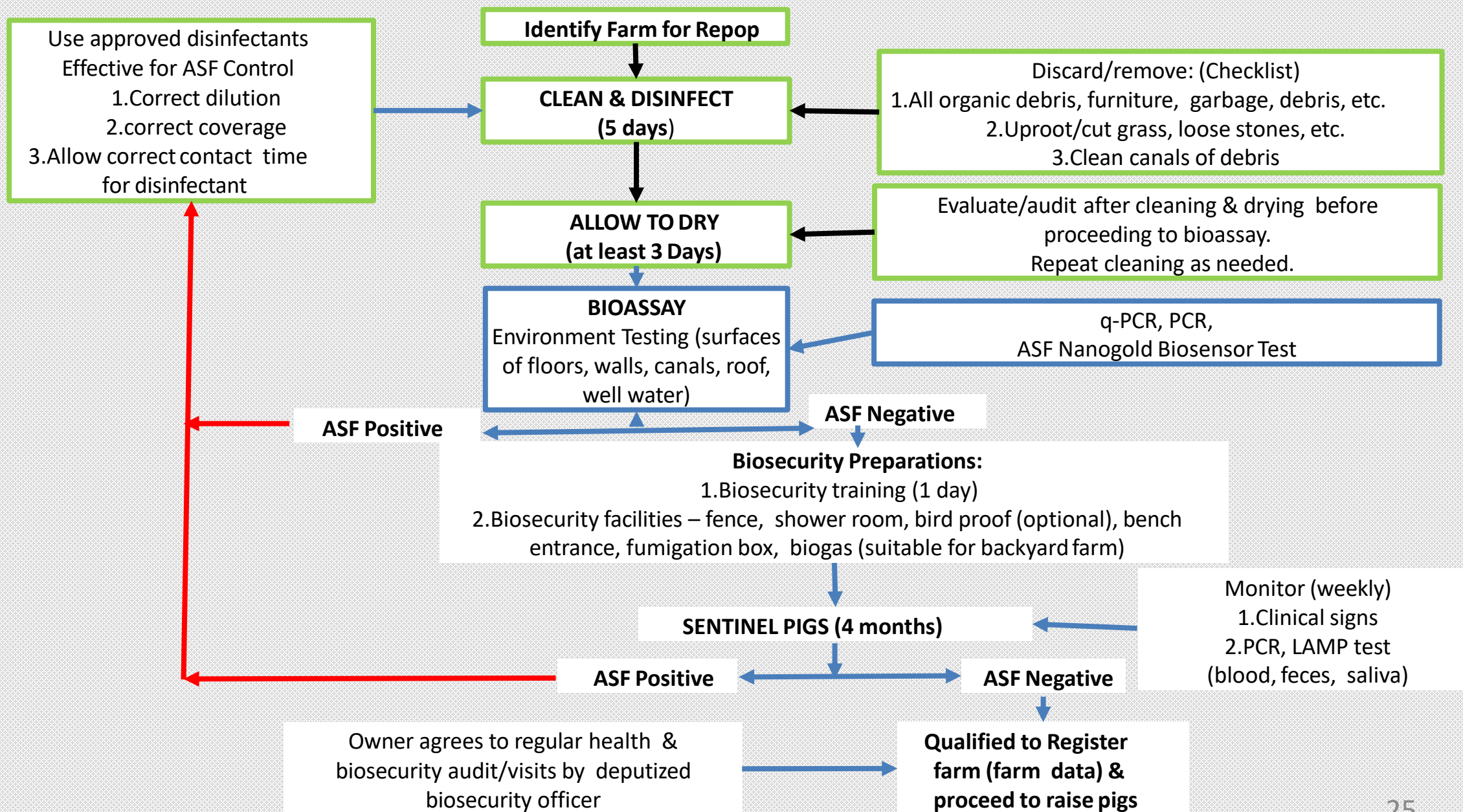


Pusa (Cat)



Asong Pinoy (Aspin Dog)

Outline of Farm Repopulation Procedure Post- ASF Infection



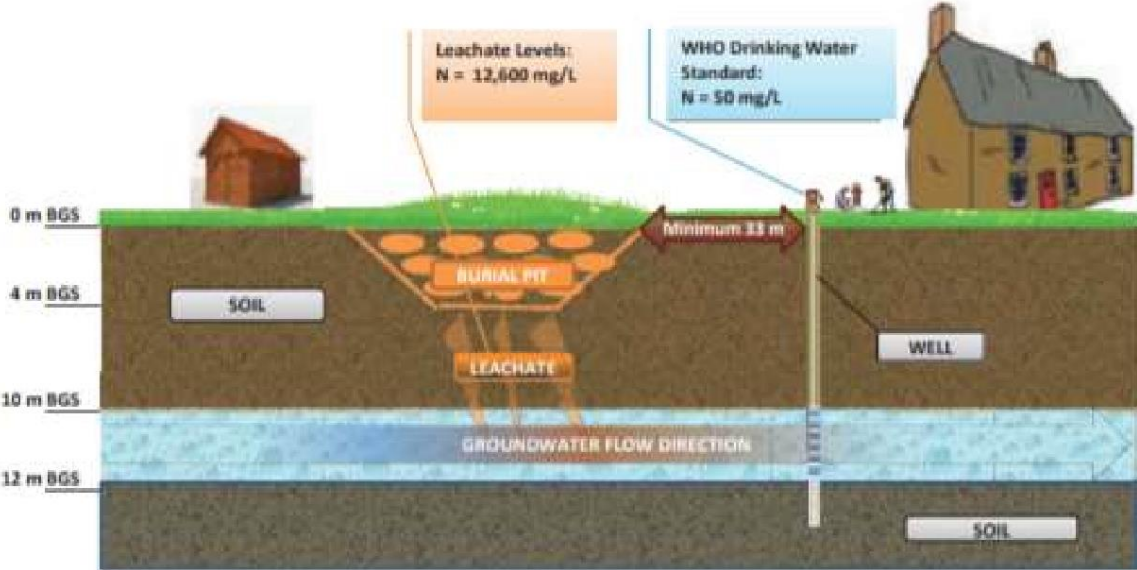
BIOASSAY

Objective:

1. Validate quality of cleaning and disinfection based on the failure to detect ASF virus in the farm using molecular tests.
2. Compare results of **ASF Nanogold Biosensor (LAMP) test** against **RT-PCR test**

DEEP BURIAL and RISK OF WELL WATER CONTAMINATION

DEEP BURIAL SCHEMATIC



BGS - below ground surface; m - meter(s); mg/L - milligrams per liter; N - Nitrogen; WHO - World Health Organization

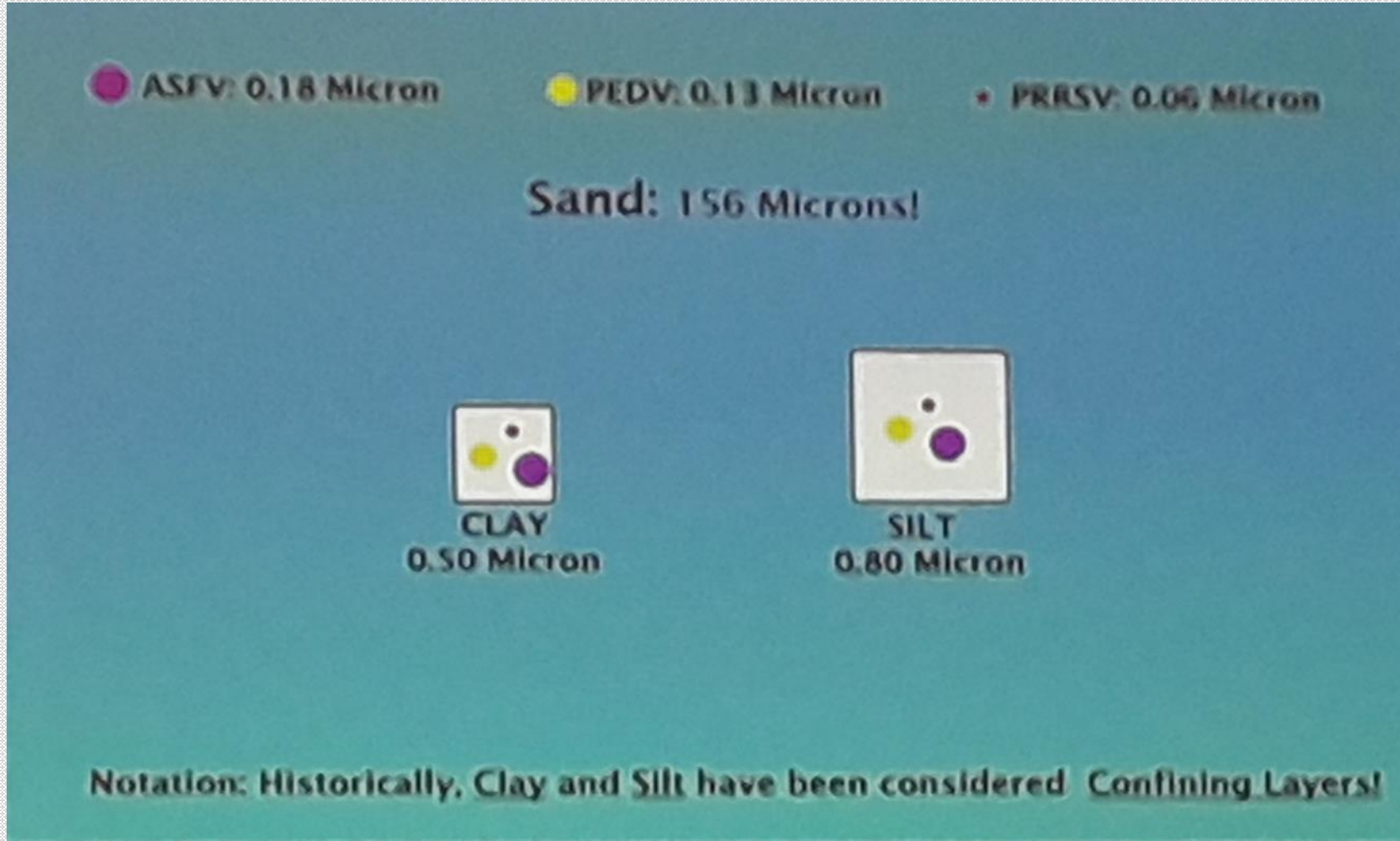


Source: Lori Miller, USDA, 2018



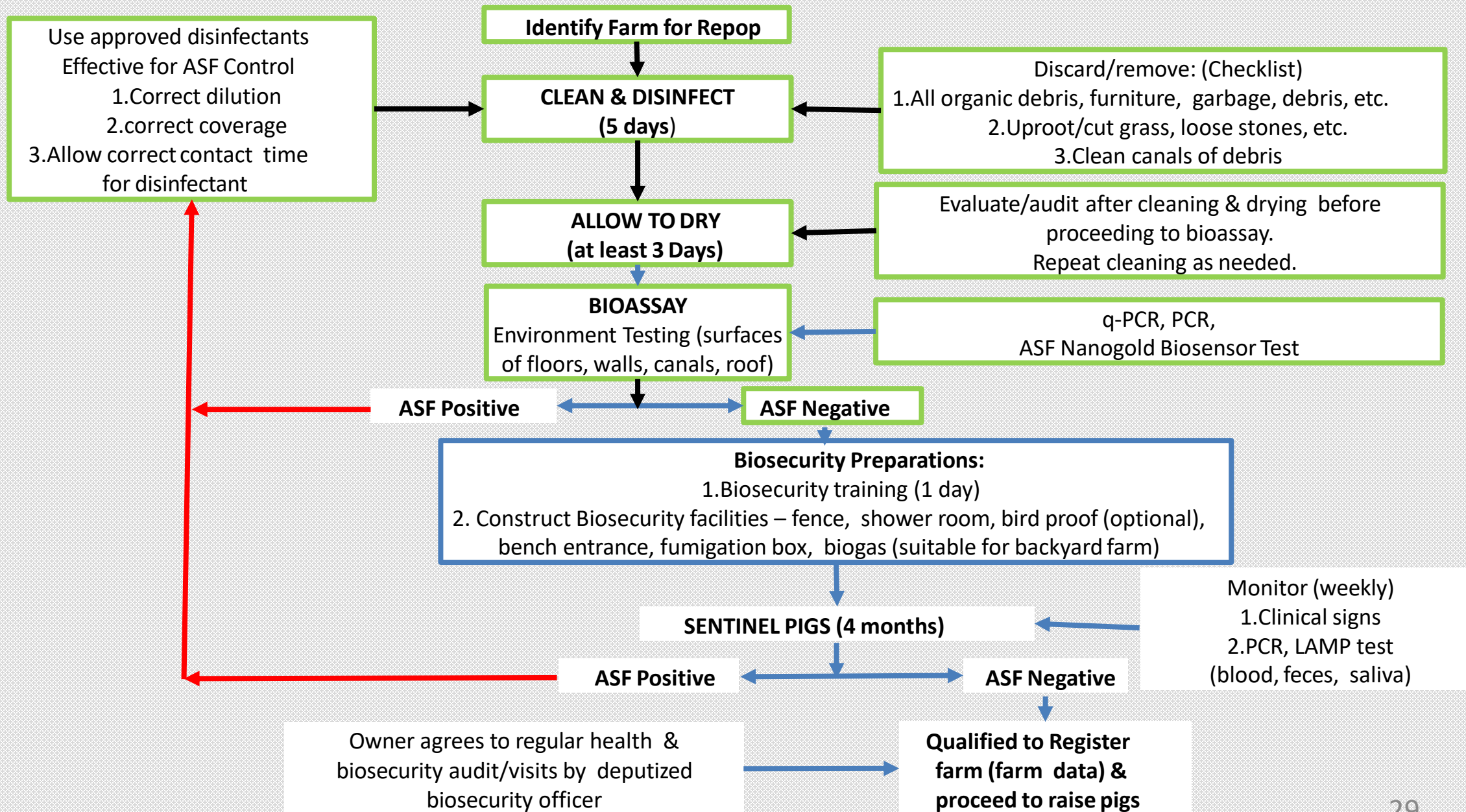
COMPARISON IN SIZE

(Virus vs, Interstitial Space)



Water Think Tank LLC 612 (791-1310)

Outline of Farm Repopulation Procedure Post- ASF Infection



BIOSECURITY

Objectives:

- 1. Reduce risk of reinfection.**
2. Train farm owner & staff in Biosecurity
 - adapt PCSP Biosecurity Training Module
3. Phase-in facilities required for implementation of Biosecurity
 - must conform with PCSP minimum Biosecurity standards for swine farms
4. Construct Waste Disposal System – Biogas Digester

PCSP BIOSECURITY STANDARDS for SWINE FARMS¹

DESCRIPTION		LEVEL 0			LEVEL 1			LEVEL 2		
				SCORE		TARGET	SCORE		TARGET	SCORE
Location	Distance (kms) from the nearest pig farm	<500 m			>500 m			>2 km		
Facilities	Clearly demarcated CDL - Clean Dirty Line, fenced	none			w/ fence			2x fence	4	0
	Signage of Biosecure Area / actions to follow	no								
	Shower In- Shower Out (with soap/shampoo)*	no			1x shower			2x shower	3	
	Complete change of clothing / footwear	no				4	0	NO	4	0
	Pest control program in place	no							4	0
	Regular cleaning & disinfection	no							4	0
	Observe downtime**	no			NO	4	0	NO	4	0
	Supplies decontamination (personal / farm supplies)***	no								
	Food items (no pork, pork products from outside)	no				3		YES	3	
	No food/ drinks in HSA / pig area	no								
	Water, chlorinated & regularly tested	no							4	0
	Load-in/Load-out (1-way), washed/disinfected between uses	no							3	
	Feeds, feed bags are not allowed to enter HSA****	swill				4	0	YES	4	0
	Dead pig disposal, covered	no				3			3	
Records	Visitors log, mortality, with written biosecurity measures	no						3		
Vehicle movement	Vertically-integrated (not exposed to viajeros)	no								
	Dedicated feed truck	no								
	Trucks washed/disinfected/dried upon entry	no			NO	4	0	NO	4	0
TOTAL					61			76		
MINIMUM PASSING SCORE					48			54		

*1st at the gate entrance, Medium Security Area (MSA) / 2nd shower to High Security Area (HSA)

** at least 1 night

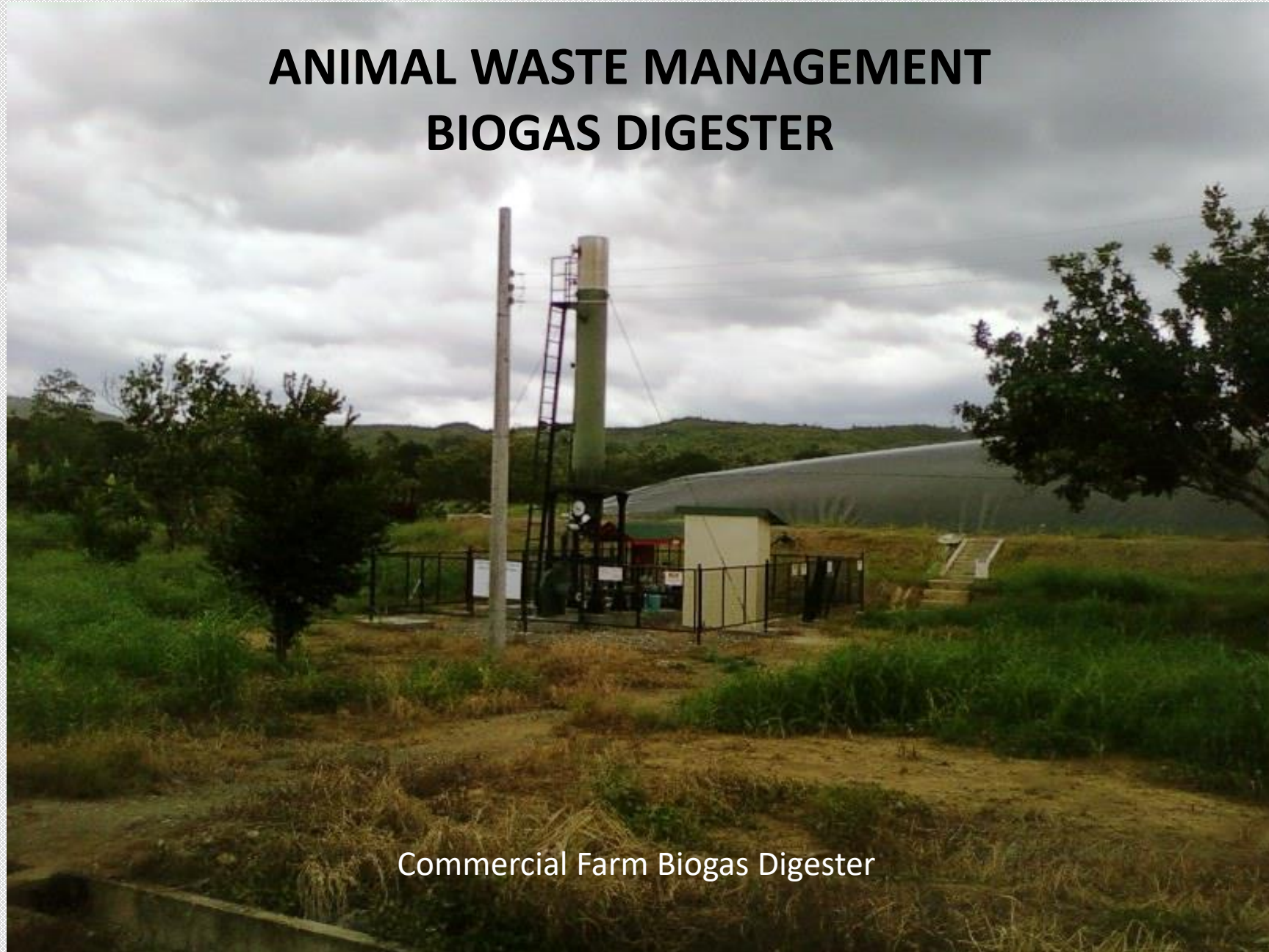
*** use if UV/ Ozone/ Disinfection/ Fumigation

**** Pelleted, no feed bags in HAS

¹Adapted in the Natl. Zoning & Movement Plan for ASF

			RISK LEVEL	
SCORE		4	very low. Mandatory score - PASS or FAIL only	
		3	low, Orange box is mandatory score	
		2	medium	
		1	high	
		0	A disqualification for the BIOSECURITY LEVEL.	

ANIMAL WASTE MANAGEMENT BIOGAS DIGESTER



Commercial Farm Biogas Digester

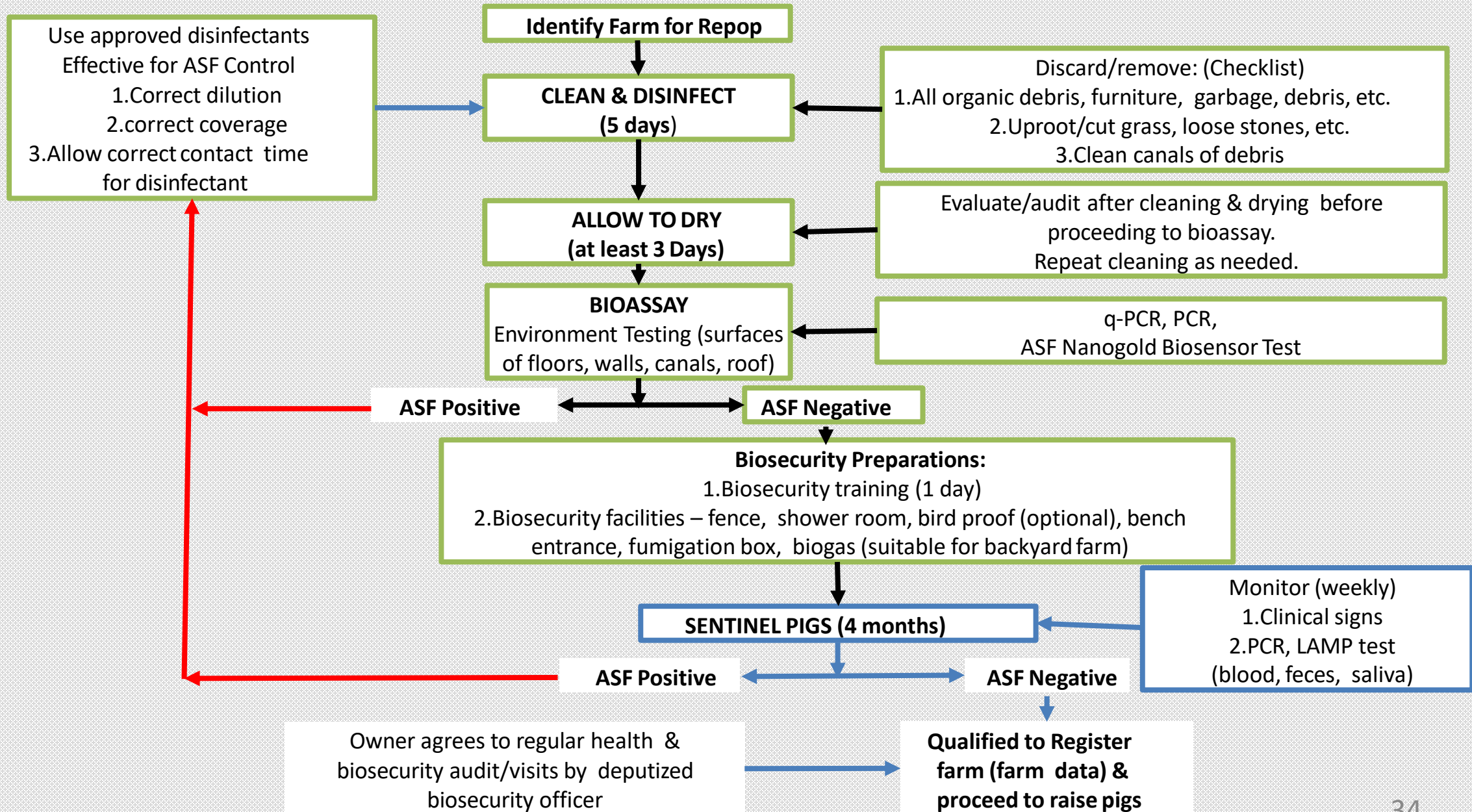
ANIMAL WASTE MANAGEMENT

BIOGAS DIGESTER FOR BACKYARD FARMS



From: Animal Waste Management : Biogas Systems
Dr. Gomersindo N. Canoy DVM, MSc
Aklan State University

Outline of Farm Repopulation Procedure Post- ASF Infection



SENTINEL PIGS

1. # of sentinel pigs depends on size of the farm and the appetite of the owner in taking risks.
2. Sourced from High Health farms tested free from ASF.

Objectives:

1. To validate eradication of ASF virus in the farm environment
2. Monitoring & Surveillance
 - **monitor pigs weekly to check for absence of clinical signs of ASF**
 - collect blood for PCR test or **¹ASF Nanogold Biosensor Test kit**

(¹NOTE: can be used as a screening test to detect ASF virus in soil, feces and saliva)

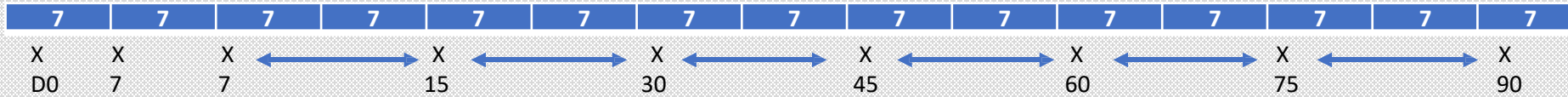
Monitoring for Clinical Signs of ASF

SCORE		CLINICAL SIGNS	DESCRIPTION
4		High fever (>40°C)	May see huddling, red skin/ears, listless attitude, hot to the touch
		Erythema	Black/red/purple discoloration of skin, hemorrhages of distal extremities (ear tips, distal limbs, tail)
	4	Lethargic, Depressed	Moderate to Severe: reluctant to walk/move, recumbent
		Vomiting	
		Abortion (sows)	
3		Abnormal gait	Hesitant walking, incoordination
	3	Off-feed/ Anorexic	Not eating, No interest in food
		Emaciated	Backbone and ribs visible, head appears larger than body
		Bloody diarrhea	
2		Reduced feed intake	Shows interest in food, but does not eat
	2	Respiratory signs	Cough, Increased rate or effort, nasal discharge
		Epistaxis	
1		Eats slowly when fed	
	1	Empty stomach	Thinned body muscles
		Reduced amount of feces	
Total Score:	10	HIGHLY SUSPICIOUS OF ASF. FOR LABORATORY CONFIRMATION (RT PCR)	

BANTAY ASF sa BARANGAY PROJECT

SURVEILLANCE : RECOMMENDED ASF TESTING PROTOCOL

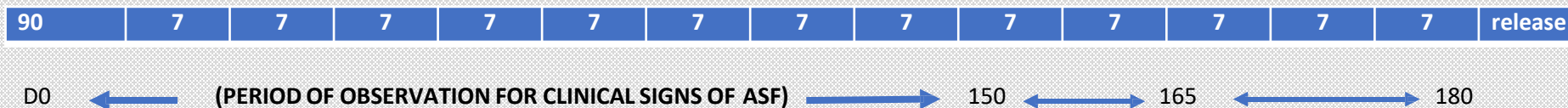
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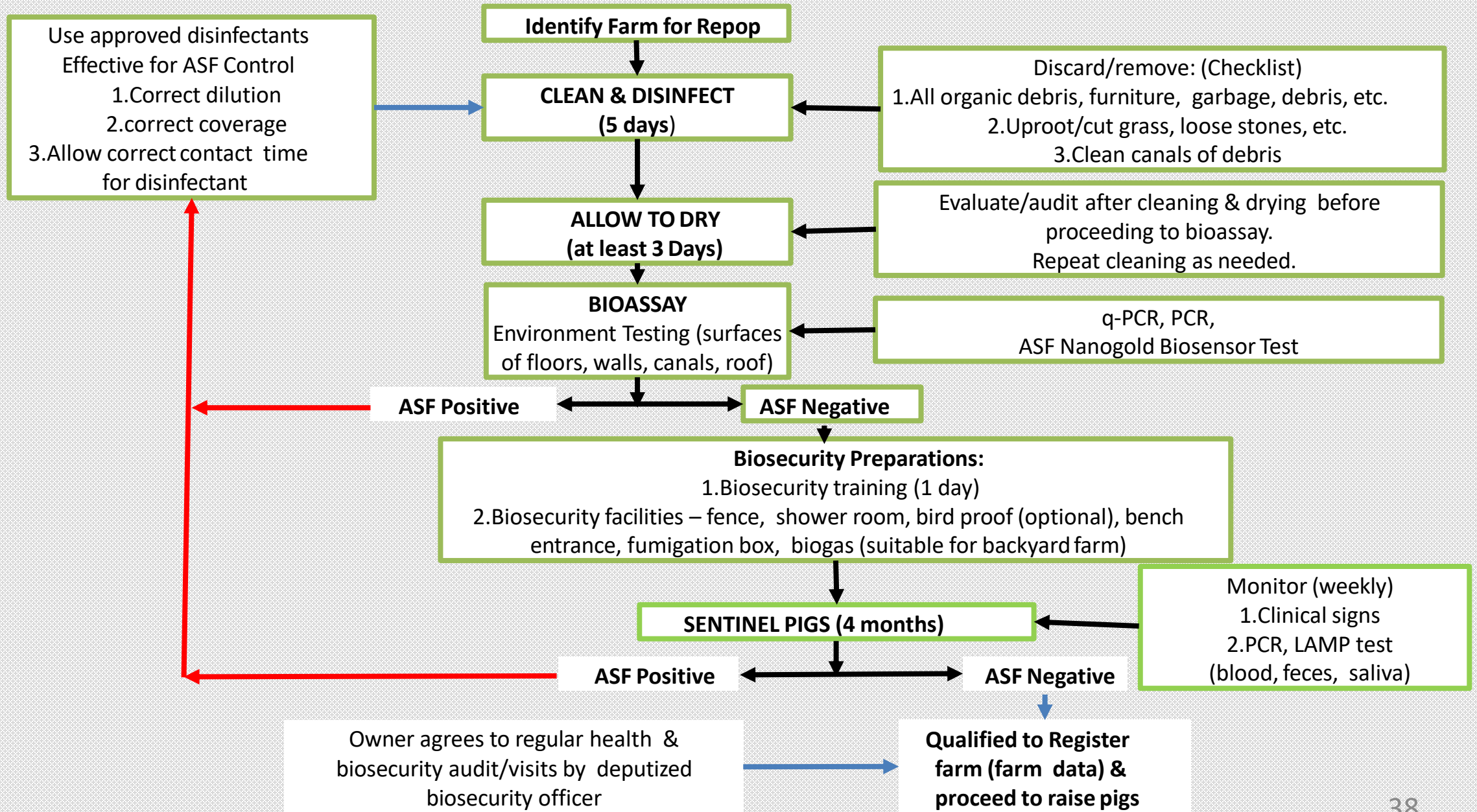


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Outline of Farm Repopulation Procedure Post- ASF Infection



ASF FREE CERTIFICATE

Objective:

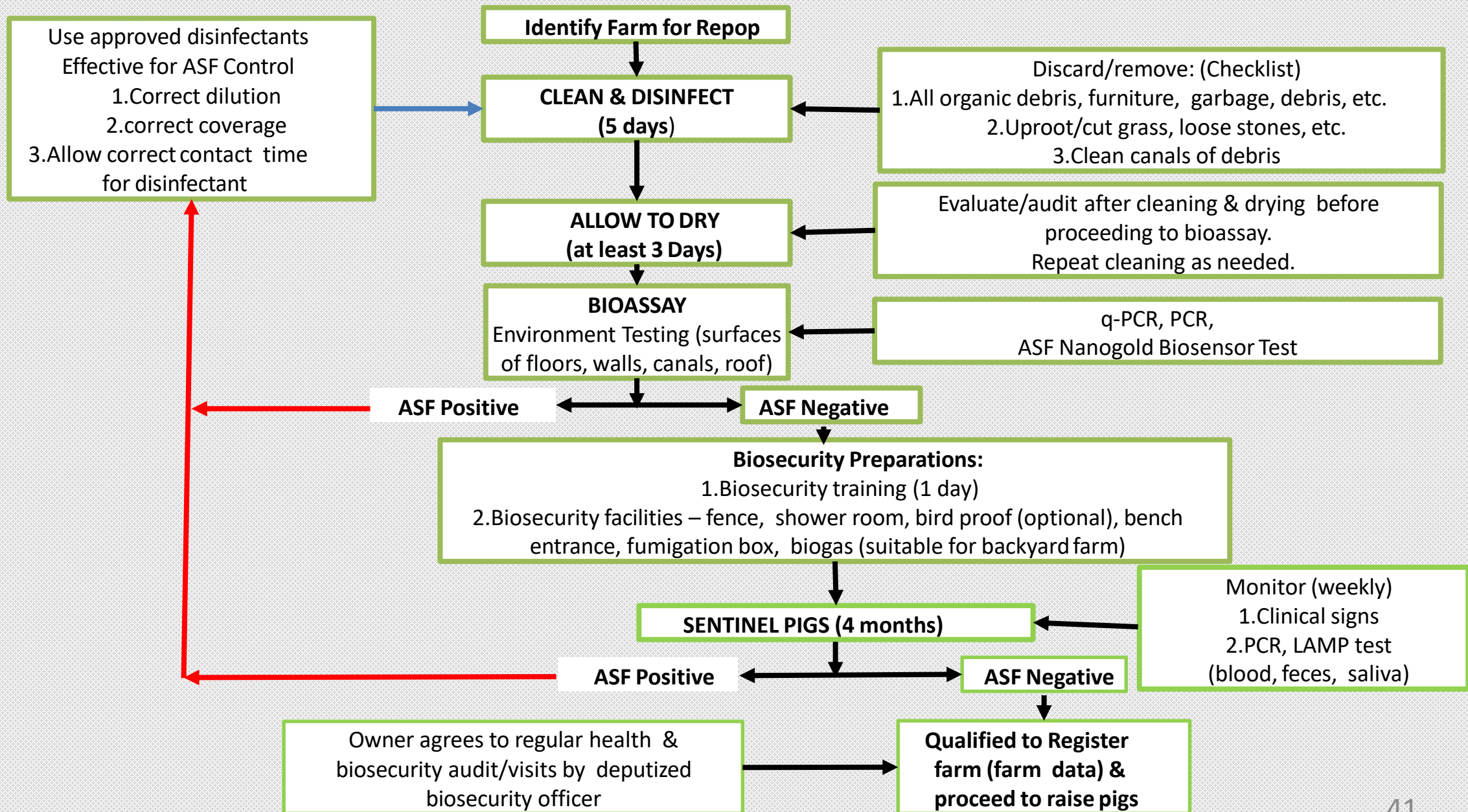
1. To certify to the BAI that the farm is free from ASF.
 - qualify for govt. swine farm repop loans (?)
 - DA P400M swine farm repop budget available for backyard farms
1. To certify to the LGU that the farm is a viable business unit that is qualified for business registration

CONTINUED MONITORING OF PIG HEALTH & BIOSECURITY

Objectives:

1. To monitor health of the pigs in the farm during normal operation.
 - trained Biosecurity Officers to monitor farm
2. To monitor continued compliance with Biosecurity.
3. To monitor developing health risks in the farm vicinity.
4. Recommend procedures and actions to maintain health of the animals & mitigate observed risks in the environ of the farm.
5. To report progress of the farms under Bantay ASF sa Barangay.
 - negative reporting based on surveillance & monitoring

Outline of Farm Repopulation Procedure Post- ASF Infection



WE CAN WIN THE FIGHT AGAINSTS ASF!

**SUPPORT THE
BANTAY ASF SA BARANGAY PROJECT
OF PCSP**

THANK YOU!

Deep Burial-Advantages and Disadvantages

DEEP BURIAL ADVANTAGES AND DISADVANTAGES

Advantages	Disadvantages	Time/Cost	Considerations
<ul style="list-style-type: none">• On-farm• Easy to implement	<ul style="list-style-type: none">• Public health risk• Biosecurity risk• Pathogens may survive• Not sustainable• Regulatory limitations• Limits future land use• Requires heavy equipment or excessive labour	<ul style="list-style-type: none">• Fast• Low cost	<ul style="list-style-type: none">• Burial may be viable for small numbers of animals in suitable soils, but it is site-specific

DISINFECTION OF DRINKING WATER PART 1

Primary Disinfection (PART 1)

Inactivate or otherwise remove bacteria, viruses, and other potentially harmful organisms from entering a drinking water distribution system.

Secondary Disinfection (PART 2)

Prevent the formation of biofilms and drinking water remains absent of pathogens as it flows through a plumbing distribution system.