



Food and Agriculture
Organization of the
United Nations

FMM/RAS/298: Strengthening capacities, policies and national action plans on
prudent and responsible use of antimicrobials in fisheries Final Workshop
in cooperation with AVA Singapore and INFOFISH

12-14 December, Concorde Hotel, Singapore

MALAYSIA:

Development of National Action Plans on AMR: Aquaculture Component,
Project Accomplishments and Impacts

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General: Status of Country NAP under One Health approach:

- Final draft
- Comprised of 4 main pillars (Education & Awareness, AMU, AMR and Best Practices)
- To be launched by end of February 2018

MALAYSIAN ACTION PLAN ON ANTIMICROBIAL RESISTANCE (MyAp - AMR)



Ministry of Health, Malaysia
& Ministry of Agriculture and
Agro Based Industry, Malaysia



1. Governance

Establishment of governance mechanism	2017										
	3	4	5	6	7	8	9	10	11	12	
a. Dialogue Session: AMR - Playing our part in combating the crisis (MOH, National Pharmaceutical Regulatory Agency, DVS, DOF, Federation of Livestock Farmers Association Malaysia) (Lead by MOH)	X						Workshop in Putrajaya				
b. Establishment of AMR (AQ) Working Group (DOF)		X									
c. Technical Working Groups (TWG) meetings	X	X									
d. AMR (AQ) Working Group Meeting (DOF)		X		X				X			X
e. Presented the NAP AMR (AQ) to the Department of Fisheries top management and endorsed (DOF)			X								
f. Coordination meeting of 4 TWGs on AMR and finalization of National Action Plan on AMR (MOH)										X	
g. Development and formalization of National Action Plan (NAP) AMR (which incorporated AMR (AQ))			X	X	X			X	X	X	X

2. EDUCATION AND AWARENESS (Internal awareness-Competent Authority level)

ACTIVITY/MONTH	4	5	6	7	8	9	10	11	12
a. MyOHUN National AMR Workshop, Putrajaya (6-9/3/17)									
b. FAO Workshop 1, Mangalore, India (10-13/4/17)	X								
c. MyOHUN National AMR Workshop, Faculty of Veterinary, University Putra Malaysia (UPM) (31/7-2/8/2017)					X				
d. FAO Workshop 2, Putrajaya, Malaysia (7-9/8/17)					X				
e. WHONet Training (28-29/8/17)					X			X	
f. FAO Workshop 3, Singapore (12-14/12/17)									X



2. AWARENESS BUILDING- Awareness within the agriculture sector and activities undertaken to disseminate the learnings from Mangalore and Putrajaya workshops

ACTIVITY/MONTH	4	5	6	7	8	9	10	11	12
a. Articles in Fisheries Bulletin (quarterly bulletin by DOF)			X				X		
b. A talk on AMR during APA 2017 (Farmers Day) (25/7/2017)				X					
c. A talk on AMR during Fisheries Biosecurity Strengthening Course (1-2 Aug 2017)					X				
d. AMR Awareness and Stakeholders Consultation (4/8/17)- Presented a talk and distributed a Fact Sheet on AMR					X				
e. Dissemination of AMR posters for aquaculture farmers							X		
f. A talk on Prudent Use of Antimicrobials during Aquaculture Course								X	
g. Executive Talk: AMR in Fisheries					X				



3. EVIDENCES



3 a. AMU Survey

ACTIVITY/MONTH	4	5	6	7	8	9	10	11	12
b. Preparation of questionnaires (FAO & NACA)			X	X					
c. Preparation of list of respondent (shrimp farmers, aquatic health professionals, antimicrobials dealer/manufacturer/supplier)			X	X					
d. AMU survey- shrimp farmers, aquatic health professionals, feed and antimicrobials dealer/manufacturer/supplier				X	X	X	X	X	X
g. AMU data analysis and report writing					X	X	X	X	X

AMU survey still on-going, preliminary analysis have been presented in 2nd FAO workshop in Putrajaya. Evidences/Data on the amount, supply and type of antibiotic used are still not comprehensive.



3 b. AMR SURVEILLANCE

ACTIVITY/MONTH	4	5	6	7	8	9	10	11	12
b. Development of National Integrated AMR Surveillance Manual	X	X	X	X	X		2 nd Draft		
c. Preparation of *6 laboratories to conduct AMR surveillance for <i>V. parahaemolyticus</i> (from shrimp) (determined in 2 nd FAO Workshop) and <i>E. coli</i> (NARC interest)		X	X	X	X				
d. Bacterial isolation, identification and confirmation		X	X	X	X	X	X	X	
e. AMR Surveillance/AST						X		X	
f. WHONET data entry and reporting to NARC								X	X

* 1) Fisheries Biosecurity Laboratory (FBL) Kuala Lumpur; 2) FBL, Bintawa Sarawak; 3) FBL, Kuantan, Pahang; 4) FBL, Selangor; 5) Fisheries Research Institute, Penang; and 6) National Fish Health Division

AMR Surveillance/AST

Source of samples (April-Sept 2017)	Type of Samples	Location	Number of <i>V. parahemolyticus</i> isolates
Sanitary and Phyto-Sanitary Program	Tiger Prawn	Sarawak	4
National Shellfish Sanitation Program (NSSP)	Green mussel Clams	Sarawak	3
R&D	Tiger Prawn White shrimp	Perak, Confidential	27
Diagnostic cases	Tiger shrimp White shrimp	Melaka, Kedah, Penang, Sabah, Perak Sarawak	20
Antibiotic Residue Monitoring Program (ARMP)	Tiger Prawn	Sarawak	2
		TOTAL	56

AMR Surveillance/AST

Identification (API 20NE)

56 isolates

Identification - CONVENTIONAL PCR (Kim et al. 1999)-

Primer - ToxR Vp (350 bp), Marker – Vivantis 100 bp

46 out of 56
(confirmed)

AST TESTING (as determined in 2nd FAO workshop) 46 isolates

- ✓ Disc Diffusion, MHA (no added salt, 28°C, 48 hrs)
 - ✓ Reference strain: E. coli (ATCC 25922)
 - ✓ CLSI 2017
 - ✓ 20 antibiotics (Table 1)
-

Table 1 : List of antibiotics tested

Antibiotics	Code
1. Colistin (10µg)	COL_ND10
2. Ampicillin (10µg)	AMP_ND10
3. Tetracycline (30µg)	TCY_ND30
4. Chloramphenicol (30µg)	CHL_ND30
5. Ciprofloxacin (5µg)	CIP_ND5
6. SMZ-Trimethoprim (1.25µg)	SXT_ND1.2
7. Streptomycin (10µg)	STR_ND10
9. Cefotaxime (30µg)	CTX_ND30
10. Cefepime (30µg)	FEP_ND30
11. **Amoxicillin (10µg)	AMX_ND10

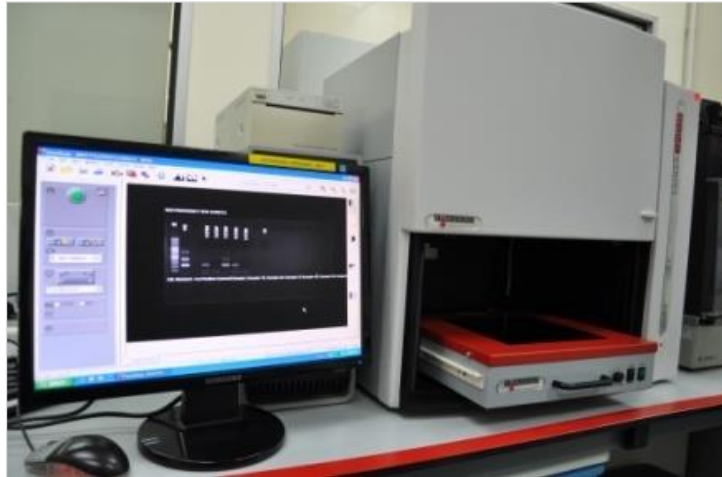
Antibiotics	Code
12. Oxytetracycline (30µg)	OXY_ND30
13. Fosfomicin (50µg)	COL_ND50
14. Flumequine (30µg)	FLM_ND30
15. Gentamicin (10µg)	GEN_ND10
16. Nitrofurantoin (300µg)	NIT_ND300
17. Doxycycline (30µg)	DOX_ND30
18. Sulfonamides (300µg)	SSS_ND200
19. Florfenicol (30µg)	FLR_ND30
20. Nalidixic acid (30µg)	NAL_ND30

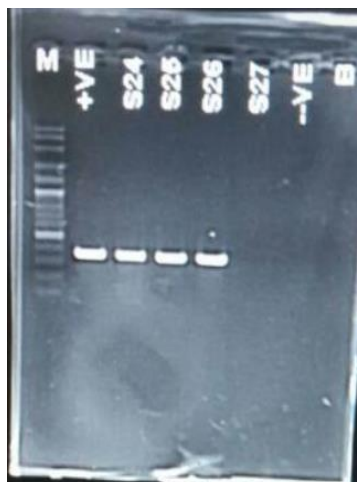
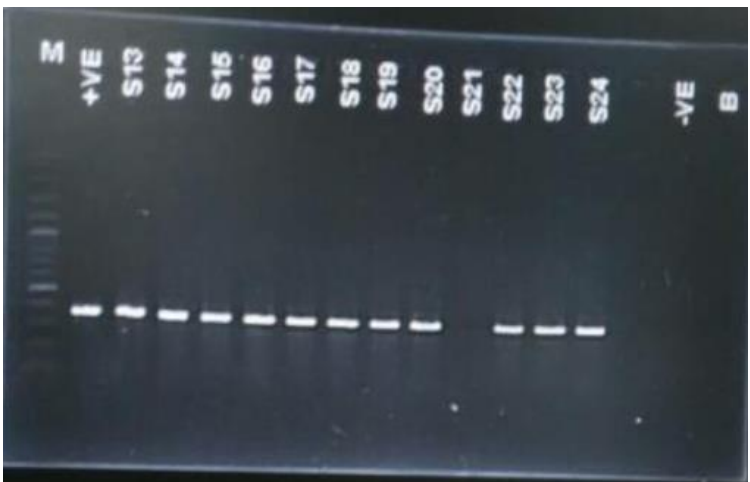
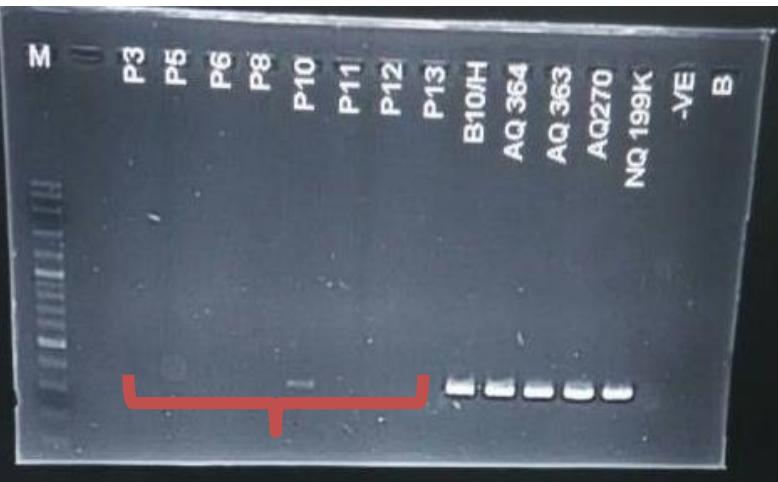
Confirmation of *V. parahemolyticus*



1. API 20 NE

2. PCR method





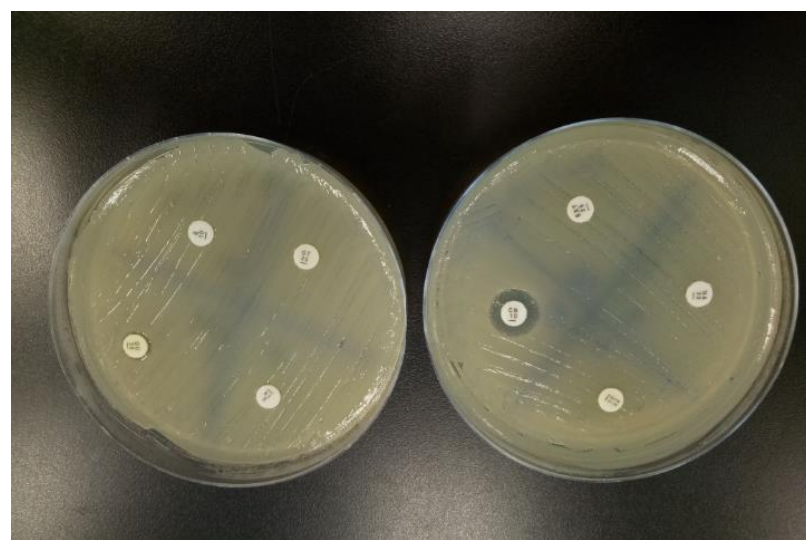
negative

- Targeted band ~350bp
- A total of 56 numbers of fish samples were analysed by Vp-toxR PCR assay, directly from single colony (TSA+). Vp-toxR PCR assay detected 46 (82.1%) samples positive for *V. parahaemolyticus*.

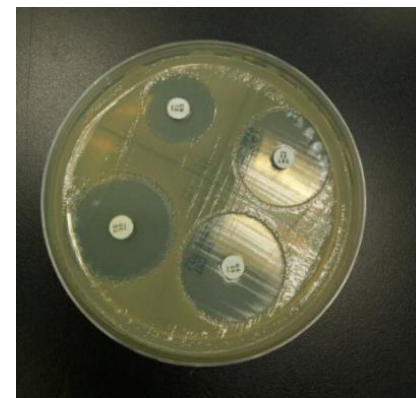
**AST activities carried out in
Fisheries Biosecurity Laboratory
Kuala Lumpur
25-29/9/2017**







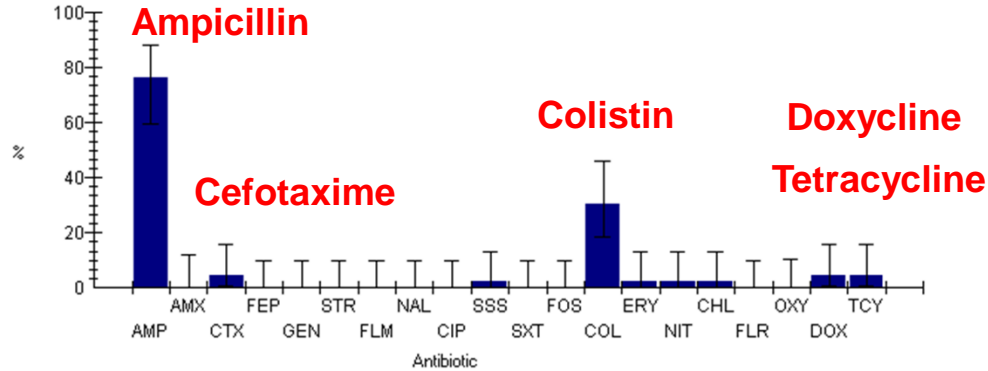
Multi Drug Resistant *V. parahaemolyticus*



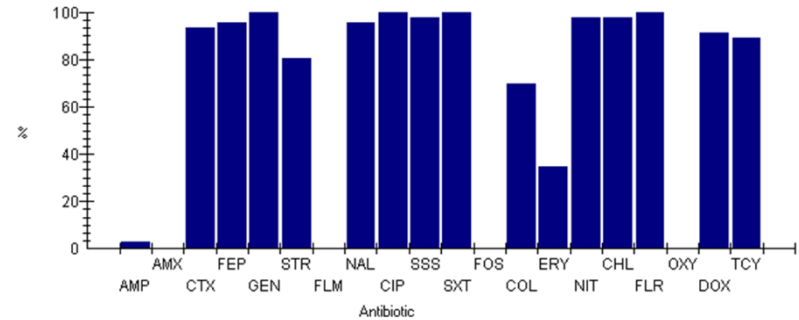
Sensitive strain of *V. parahemolyticus*

Preliminary Results (N=46)

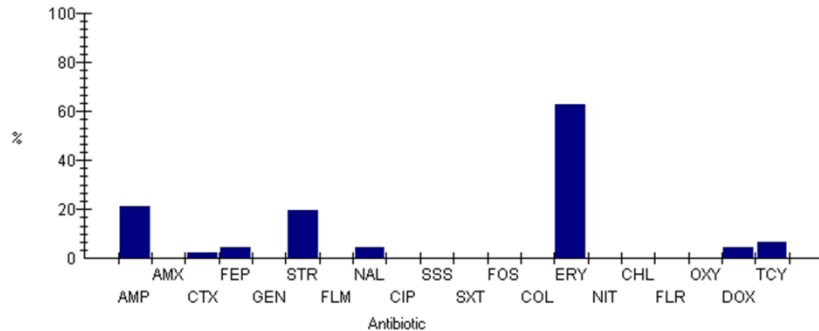
Resistant



Susceptible



Intermediate



4. BEST PRACTICES

ACTIVITY/MONTH	4	5	6	7	8	9	10	11	12
a. My GAP	X	X	X	X	X	X	X	X	X
b. Implementation of the Inland Fisheries Rules 2016	X	X	X	X	X	X	X	X	X
C R&D in vaccine development	X	X	X	X	X	X	X	X	X



WARTA KERAJAAN PERSEKUTUAN
*FEDERAL GOVERNMENT
GAZETTE*

28 Februari 2017
28 February 2017
P.U. (A) 65

KAEDAH-KAEDAH PERIKANAN
(AKUAKULTUR PERIKANAN DARAT)
(WILAYAH PERSEKUTUAN KUALA LUMPUR DAN
WILAYAH PERSEKUTUAN LABUAN) 2017

*FISHERIES (INLAND FISHERIES AQUACULTURE)
(FEDERAL TERRITORY OF KUALA LUMPUR AND
FEDERAL TERRITORY OF LABUAN) RULES 2017*



Plans for 2018

Governance

- ✓ Launching of Malaysia National Action Plan on AMR in Feb 2018

Education and awareness

- ✓ Talk/awareness program for farmers, aqua culturist, feed distributor and suppliers during MAHA (Malaysia Agricultural and Horticultural Expo) 2018
- ✓ Posters to be distributed to farmers, feed distributors and suppliers (**engagement of students from Multimedia University**)



Plans for 2018

AMU

- ✓ Continuation (interview method), AMU report

AMR

- ✓ Continuation, AMR report

Best practises

- ✓ Target number of farms to be certified: 175
- ✓ Implementation of the Inland Fisheries Rules 2016 (licencing the farms)



As country delegates and/or focal points on aquatic AMR for this project, please describe the following

a. Your concrete contribution in term of Initiatives/action taken

Thanks to FAO, we have managed to initiate quite a number of things on aquatic AMR which were not in our initial work plan for 2017.

b. How do you see your future role on AMR work and can you describe your plan to achieve this role

i. Continue to asses and record the valid AMR status in Malaysia

ii. Educate stakeholders

Plan : Work together with the respective agencies and close networking with experts.



Impact of the project in terms of :

- a. raising awareness at fisheries/aquaculture sector level (government and other stakeholders) (awareness)- **YES. DOF's commitment in AMR work**
- b. enhancing knowledge and capacity of Competent Authority – **YES.**
- c. positioning the aquaculture component within the agriculture and food sectors – **The aquaculture component is already within the NAP together with agriculture and food sectors.**



Impact of the project in terms of :

- d. implementing activities related to AMU in aquaculture- **on going, data obtained at present is not enough to make any valid conclusion.**
- e. were you able to secure some internal funding to support future work on AMR, e.g. internally within the country NAP; externally through some donor support. **Internally-YES**
- f. limitations and general/specific recommendations – **manpower, resources, skill and know how in AMU, AST**



**THANK YOU FOR YOUR
ATTENTION**

