



KEMENTERIAN
KELAUTAN DAN PERIKANAN

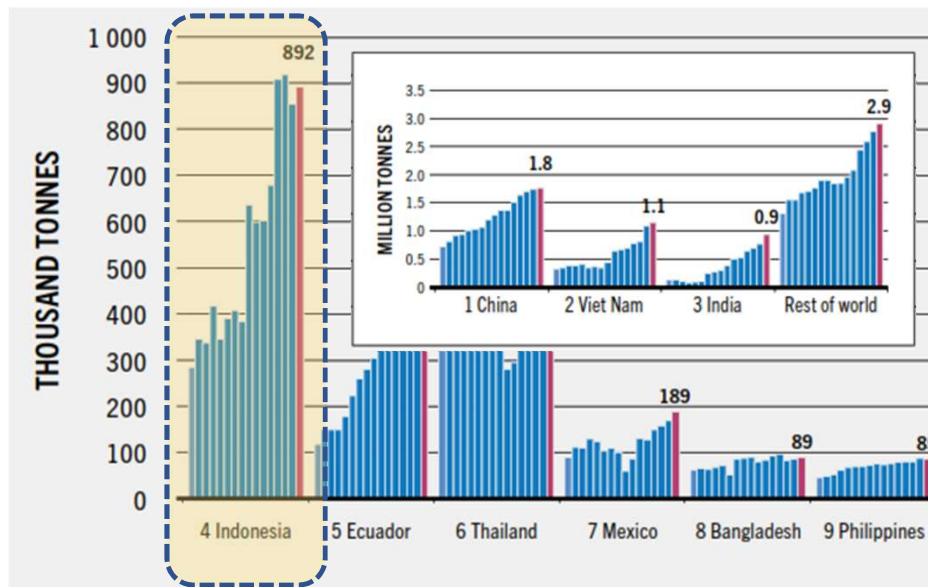
PROGRES
INDONESIA BREEDING PROGRAM
MMAF-RI 2026

NATIONAL BROODSTOCK CENTER
DIRECTORATE GENERAL OF AQUACULTURE
MINISTRY OF MARINE AFFAIRS & FISHERIES

Karangasem, April 3 2026

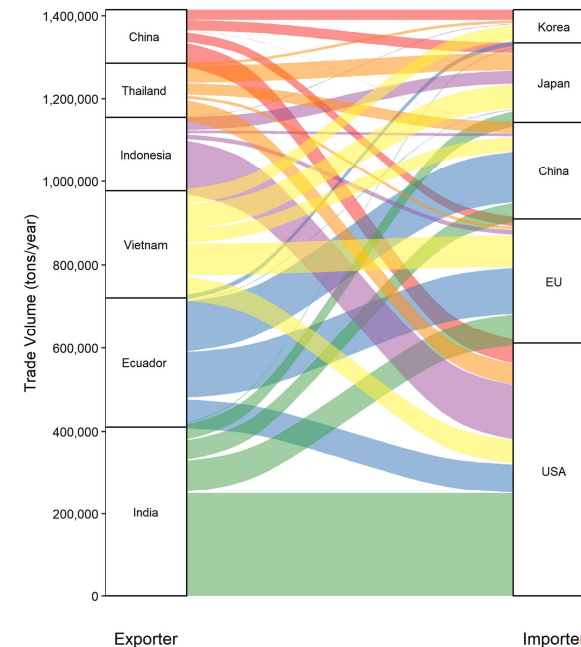
CURRENT STATUS OF SHRIMP PRODUCTION IN INDONESIA

MAJOR PRODUCERS OF CRUSTACEANS IN THE WORLD



Source : FAO 2022

TRADE FLOWS FROM MAJOR SHRIMP EXPORTERS TO MAJOR SHRIMP IMPORTERS

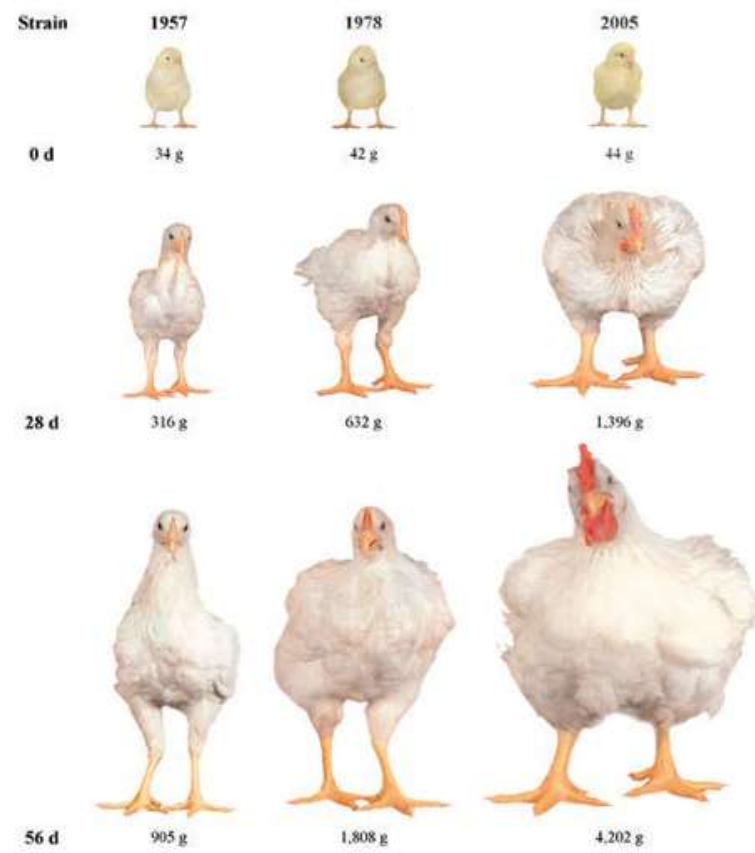


Source : Davis *et al.* 2021

- Indonesia is among the **top five shrimp producers in the world**. Its shrimp product exports to the European Union, Japan, and the United States.
- Constraint:** Unsustainable input sourcing; Damaged environment and constraints on sustainability; Biosecurity and disease management; Complex value chain

LATAR BELAKANG

COMMERCIAL BROILERS FROM 1957, 1978, AND 2005



Mar Biol (2006) 150:183–195
DOI 10.1007/s00227-006-0349-6

RESEARCH ARTICLE

Spatial and temporal variation in the size at maturity of the western rock lobster *Panulirus cygnus* George

Roy Melville-Smith · Simon de Lestang

RESEARCH ARTICLE

[< Previous](#) | [Next >](#)

Migration of the Ornate Rock Lobster, *Panulirus ornatus* (Fabricius), in Papua New Guinea

R Moore and JW MacFarlane

Australian Journal of Marine and Freshwater Research 35(2) 197 - 212
Published: 1984

Whole Genome Sequencing of the Giant Grouper (*Epinephelus lanceolatus*) and High-Throughput Screening of Putative Antimicrobial Peptide Genes

by Dengdong Wang^{1,2,†} , Xiyang Chen^{3,4,†}, Xinhui Zhang⁴, Jia Li⁴, Yunhai Yi^{3,4} , Chao Bian⁴, Qiong Shi^{3,4,5} , Haoran Lin^{1,2}, Shuisheng Li^{1,2,*} , Yong Zhang^{1,2,*}  and Xinxin You^{3,4,*}  

- ¹ State Key Laboratory of Biocontrol, Guangdong Provincial Key Laboratory for Aquatic Economic Animals and Guangdong Provincial Engineering Technology Research Center for Healthy Breeding of Important Economic Fish, School of Life Sciences, Sun Yat-Sen University, Guangzhou 510275, China
- ² Zhanjiang Bay Laboratory, Guangdong Research Center on Reproductive Control and Breeding Technology of Indigenous Valuable Fish Species, Fisheries College, Guangdong Ocean University, Zhanjiang 524088, China

MULTIPLIER EFFECTS NSD



Naupli		
10.000	ekor induk (ratio1:1)	50.000
5.000	pasang	25.000
25	% MG/hr	10
50	% mating rate	
625	ekor mating/ hr	3.125
150.000	naupli/ekor/siklus	100.000
93.750.000	naupli/hr	312.500.000
4.687.500.000	naupli per siklus(2 bulan)	37.500.000.000
500.000	Rp/ sejuta naupli	500.000
46.875.000	Rp. Per hari	156.250.000
2.343.750.000	Rp. Per siklus	18.750.000.000
2,3	M rupiah per 3 bln (ekonomi)	11,7
40	SDM/ 10.000 ekor (tenaga kerja terlibat)	200
Post Larvae		
45	% SR	30
2.109.375.000	ekor PL per siklus 2 bln	11.250.000.000
20	Rp. Per ekor	10
42.187.500.000	Rp. Per 2 bln	112.500.000.000
42	M rupiah per 2 bln	113
25	SDM per 100 jt benur	5
52.734	orang SDM	28.125
Tambak		
100	Size	100
10	gr MBW/ ekor	10
80	% SR	80
33.750.000.000	ekor	90.000.000.000
337.500.000	kg	900.000.000
337.500	ton	
50.000	Rp / kg	50.000
16.875.000.000.000	Rp.	45.000.000.000.000
16.875	M rupiah per 2 bln	45.000
3	SDM per 1000 kg	3
337.500	orang SDM	900.000

Per ekor induk betina	Satuan	Valuasi	Satuan	SDM Terlibat	
Maturasi					
Naupli	150.000	naupli/ ekor induk	75.000	Rp	0,27
Hatchery					
SR PL	50 %				
PL	75.000	ekor	1.500.000	Rp	0,38
Tambak					
size	100				
	10	gr			
SR tambak	85 %				
Biomass	638	kg	31.875.000	Rp	13
Total Efek-Multi			33.450.000		14

Pengembangan Induk Udang Vanname di Indonesia

2001

Udang Vaname
Penaeus vannamei

- Pelepasan berdasarkan Keputusan Menteri Kelautan dan Perikanan Nomor KEP.41/MEN/2001
- Instansi Pemulia : BPBAP Situbondo

2009

Udang Vaname
Nusantara I

- Pelepasan berdasarkan Keputusan Menteri Kelautan dan Perikanan Nomor KEP.78/MEN/2009
- Instansi Pemulia : BPBAP Situbondo

2022

Peluncuran Program
Induk Udang Unggul
Vaname

- *Launching* program pengembangan induk udang unggul vaname pada 29 Oktober 2022 oleh Menteri Kelautan dan Perikanan

2023

Udang Vaname
NuSa Dewa

- Pelepasan berdasarkan Keputusan Menteri Kelautan dan Perikanan Nomor No. 181 Tahun 2023
- Instansi Pemulia : BPIUUK Karangasem

2024

Kerjasama
pengembangan induk
udang vaname dg OI

- Penyediaan induk unggul dan pembangunan NC dan MBC berdasarkan design criteria OI
- NC : BPIUUK Karangasem; MBC : BPBAP Takalar & BPBAP Ujung Batee

PELIBATAN TIM PEMULIAAN 2022 - 2024

JEJARING NUSA DEWA [PERBENIHAN DJPB]

NO.	NAMA	INSTITUSI
1	Prof. Dr. Alimuddin	IPB
2	Dr. Made L. Nurdjana	Pakar Udang Windu
3	Prof. Dr. Ketut Sugama	BRIN
4	Dr. Slamet Subjakto	DJPB
5	Ir. Hardi Pitoyo	Petambak (SCI)
6	Iwan Hermawan	Hatchery (FKPUI)
7	Dr. Siti Subaidah	Vaname Nusantara 1
8	Ir. Nono Hartanto, M.Aq	Dir Rumput Laut DJPB
9	Lutfi Hardian, S.Pi, M.Si	Dir Rumput Laut DJPB

OCEANI INSTITUTE OF HAWAII PACIFIC UNIV. [OI-HPU]

NO.	NAMA	INSTITUSI
1	Dr. Shaun Moss	OI - HPU
2	Dr. Dustin Moss	OI - HPU
3	Jeffrey Prochaska	Shrimp breeder

TIM PENILAI [KEPMEN KP NO 66 TAHUN 2023]

NO.	NAMA	INSTITUSI
1	Prof. Dr. Mas Tri Djoko Sunarno	BRIN
2	Prof. Dr. drh. Angela Mariana Lusiastuti, M.Si.	BRIN
3	Ir. Anang Hari Kristanto, M.Sc., Ph.D.	BRIN
4	Dr. Imron	BRIN
5	Prof. Dr. Gadis Sri Haryani	BRIN
6	Dr. Suryadi Saputra, S.Pd., M.Si.	BRIN
7	Dr. Raden Roro Sri Pudji Sinarni Dewi, S.Pi., M.Si.	BRPBATPP-BPPSDM
8	Prof. Dr. Alimuddin	IPB
9	Dr. Ir. Murwantoko, M.Si.	UGM
10	Dr. Sinar Pagi Sektiana, S.St.Pi., M.Si.	STP-BPPSDM
11	Dr. Ade Sunarma, S.Pi., M.Si.	DJPB
12	Ir. Darmawan Adiwijdaya	DJPB
13	Muh. Sabar Syafi, S.St.Pi.	DJPB
14	Ir. Ahmad Jauhari Pamungkas, M.Si.	DJPB
15	Solehudin Abdul Gani, S.Pi.	DJPB





PROGRESS PEMULIAAN 2022 - 2024

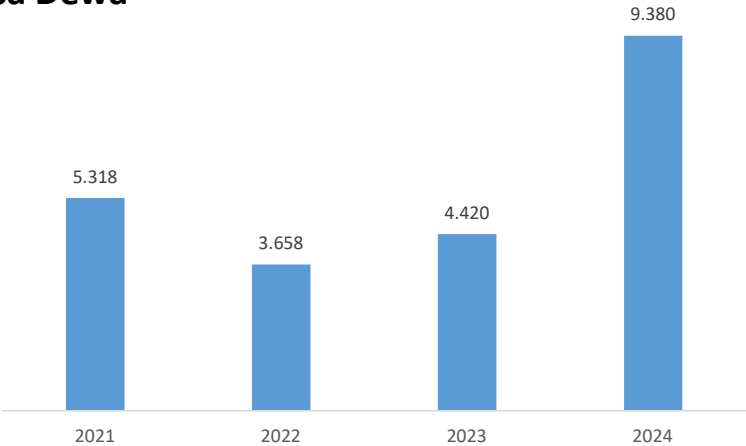
TAHUN	SEMESTER	RESISTEN - WSSV			FAST GROWTH			BALANCE			RESISTEN - EMS			PLANT BASED PROTEIN		
		Oktober 2022			Apr-23			Februari 2023			Agust 2024			Sep-24		
		Σ FAMILI	Σ CALIN	TAHAPAN	Σ FAMILI	Σ CALIN	TAHAPAN	Σ FAMILI	Σ CALIN	TAHAPAN	Σ FAMILI	Σ CALIN	TAHAPAN	Σ FAMILI	Σ CALIN	TAHAPAN
2022	I	8	36.000	Founder	3	70.200	Founder	7	63.850	Founder	3	60.150	Founder	1	150	Founder
	II	1	5.000	Marka	4	85.100	Uji Multilokasi	8	64.050	Uji Multilokasi	5	87.125	Founder	2	25.125	Breeding
2023	I	8	50.000	Distribusi	8	13.500	Distribusi	4	14.500	Distribusi	8	17.000	Genotyping	9	26.150	Genotyping
	II	3	14.550	Distribusi	5	44.033	Distribusi	2	59.300	Distribusi	2	53.600	Breeding	5	43.000	Breeding
2024	I	12	38.380	Distribusi	14	41.464	Distribusi	16	38.900	Distribusi	5	33.700	Breeding	12	40.200	Breeding
	II	9	32.050	Distribusi	10	38.180	Distribusi	5	83.500	Distribusi	6	106.000	Breeding	10	48.000	Breeding
		ADG 0.20-0.22 g/hr			ADG 0.25-0.30 g/hr			ADG 0.22-0.23 g/hr			ADG 0.20-0.22 g/hr			ADG 0.20-0.22 g/hr		
KETERANGAN		HAKI Marka & released			conventional breed			cross Res WSSV - Growth			survival fluktuatif 40-70%			heritability trait rendah		

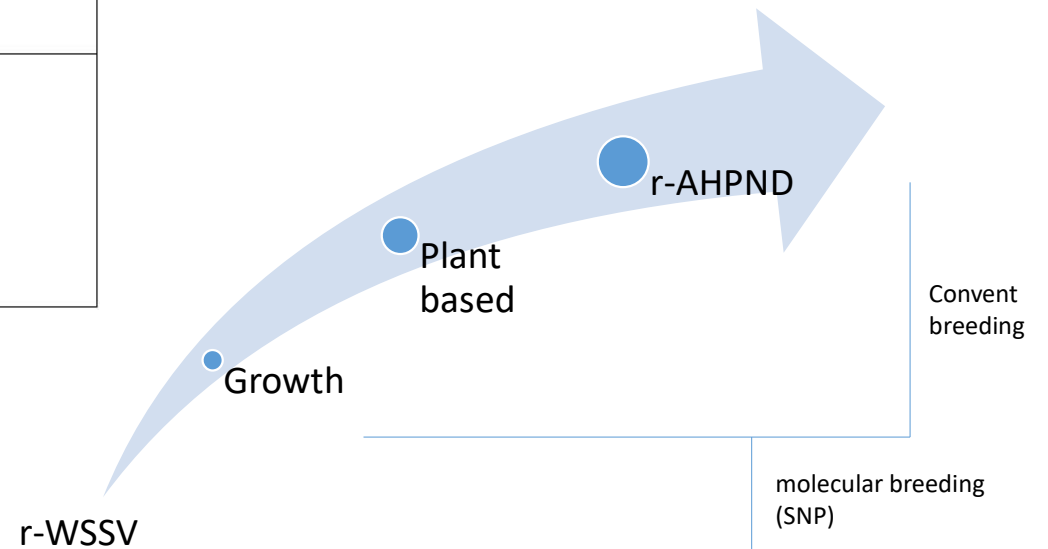
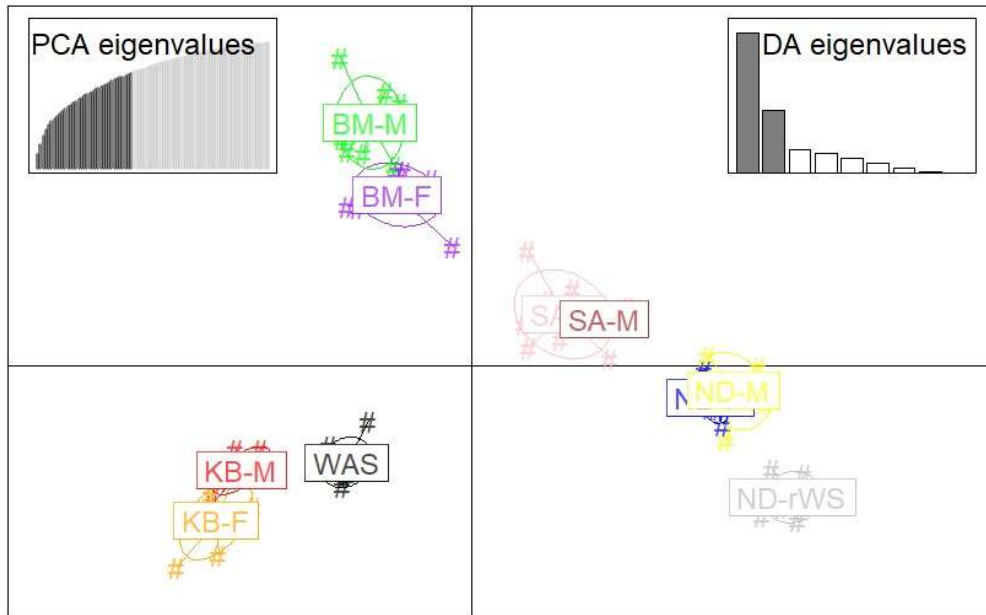
* HAKI No. 000389705; Releas KEPMEN No. 181 Tahun 2023

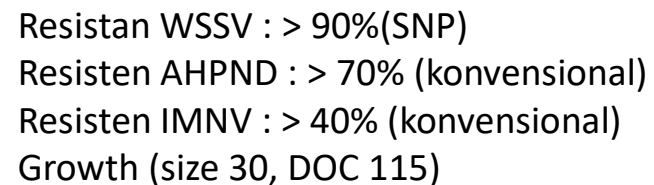
Progres Produksi Induk Nusa Dewa

TAHUN	PNBP
	JUMLAH (ekor)
2021	5.318
2022	3.658
2023	4.420
2024	9.380
TOTAL	36.426

LAUNCHING NUSA DEWA
RELEAS NUSA DEWA





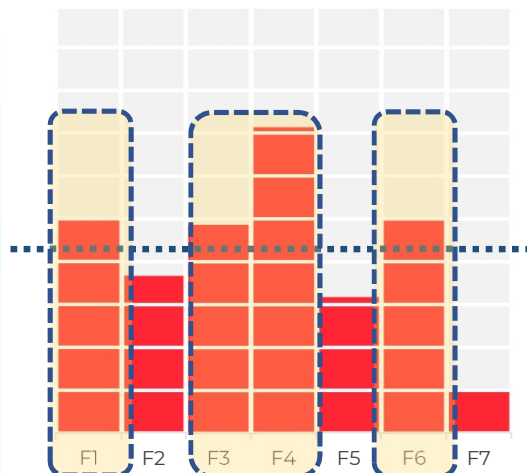


CURRENT METHODS FOR BROODSTOCK PRODUCTION

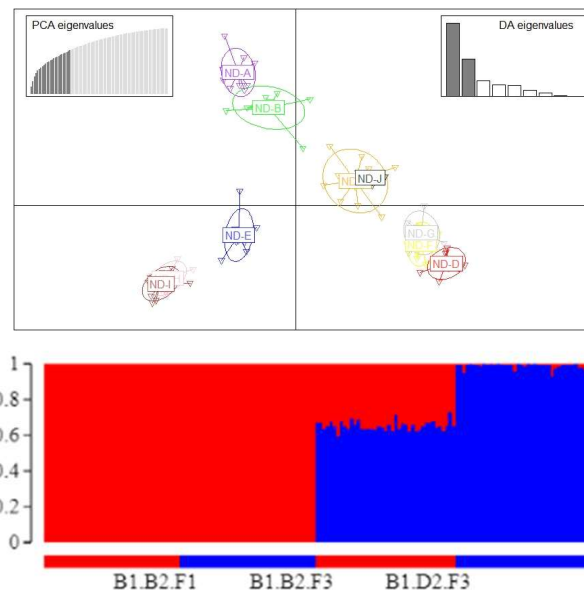
QUANTITATIVE GENETICS

MOLECULAR APPROACH

SHRIMP LINE



FAMILY SELECTION



SNP ANALYSES

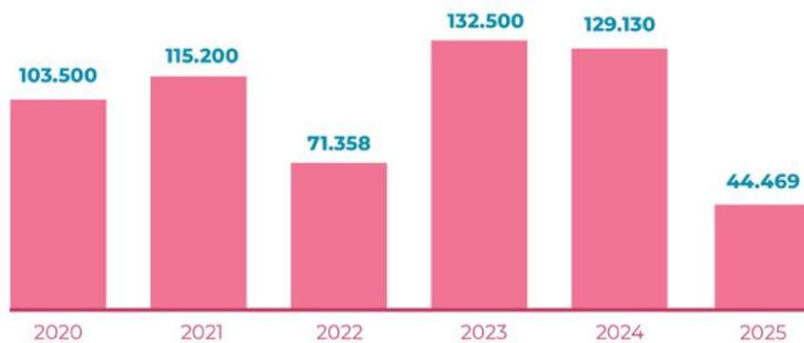


"The molecular marker technology has been independently developed by BPIU2K, encompassing the discovery of SNP markers and the establishment of an identification platform."

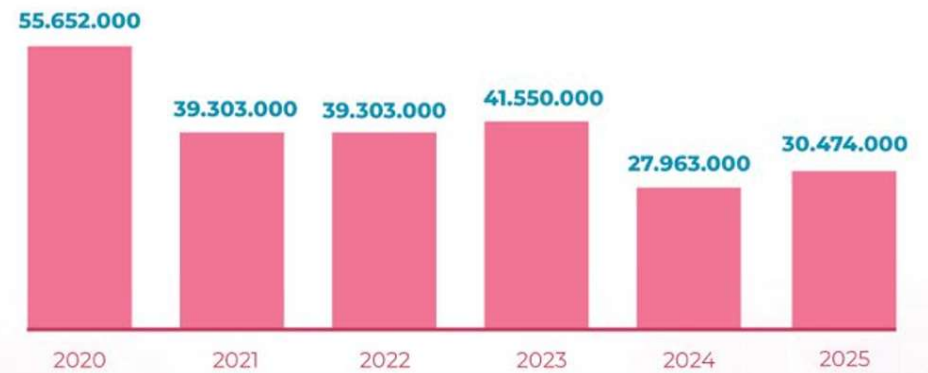


PRODUKSI UDANG VANAME BPIU2K KARANGASEM

Periode 2019 - 2025



Calon Induk Udang Vaname



Benih Udang Vaname

**Kapasitas produksi per tahun, dalam ekor*



PETA DISTRIBUSI PRODUKSI BPIU2K KARANGASEM Tahun 2025



56.712 Tahun 2022-2025

11.208 Tahun 2022

15.060 Tahun 2023

16.280 Tahun 2024

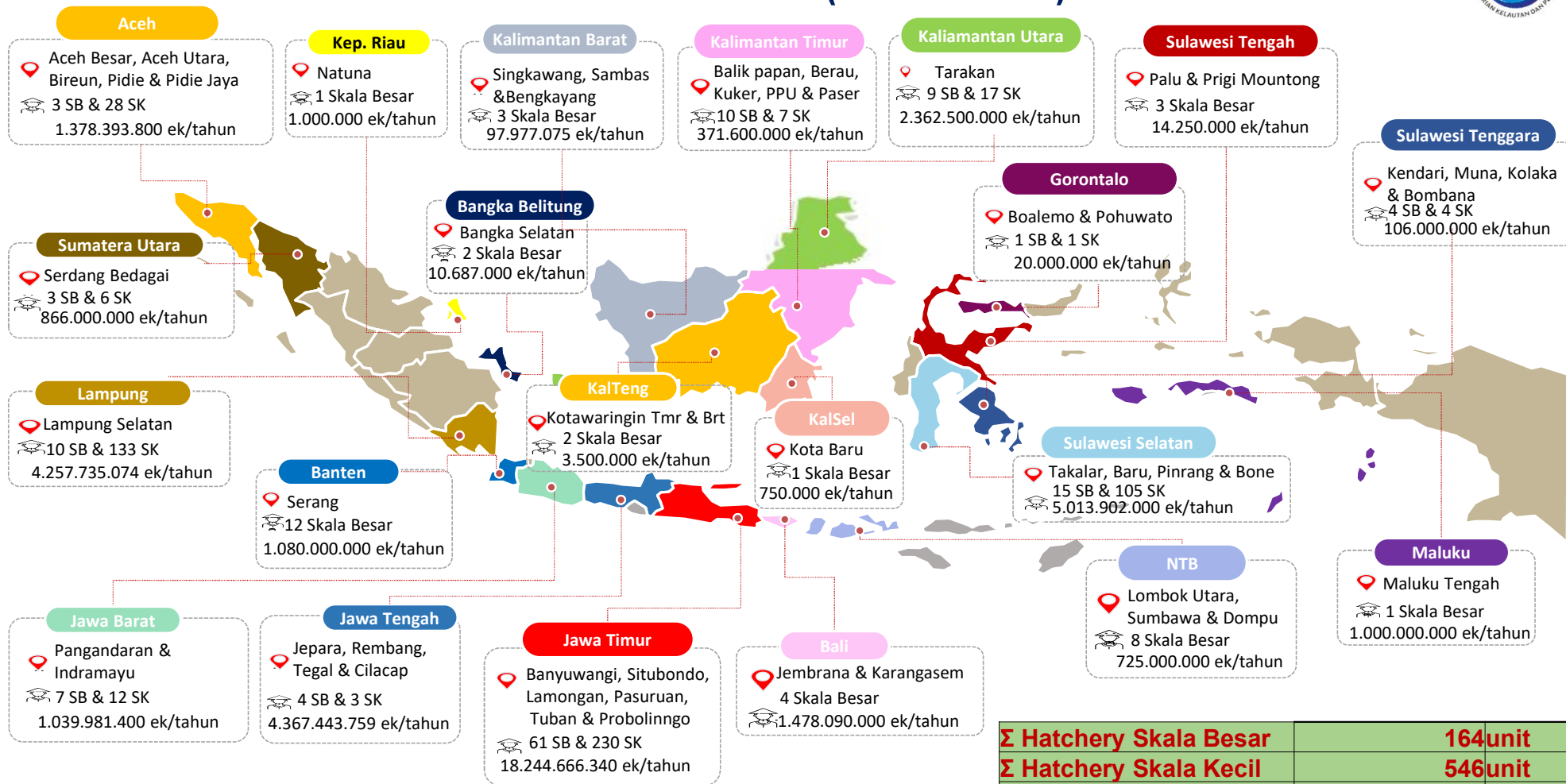
14.164 Tahun 2025

8 Provinsi

48 Swasta

4 UPT

PETA SEBARAN PEMBENIHAN (HATCHERY) UDANG



Σ Hatchery Skala Besar	164unit
Σ Hatchery Skala Kecil	546unit
Σ Produksi Benih	42.439.476.448ekor
Kapasitas Produksi	60persen

PROGRES & STOCK OPNAME INDUK TAHUN 2026

Per 3 Mei 2026

	KEGIATAN				
		Target Varian Induk Unggul			
	Line/ sifat	Resisten WSSV			
		Premium Grade Shrimp			
		Intensif Pond	Tolerant EHP	Tolerant Vibriosis	Resisten IMNV
	Kode	ND-Envi	ND-ehp	ND-vibr	ND-imnv
	Benchmarking (rata-rata ADG di 20 gr)	ADG 0.25-0.30 g/hr	ADG 0.20-0.22 g/hr	ADG 0.22-0.23 g/hr	ADG 0.25-0.30 g/hr
Capaian Tahapan					
6	Distribusi induk				
5	Uji multilokasi				
4	Breeding program				
3	Pembentukan Founder				
2	Validasi/ karakterisasi trait calon Founder				
1	Genetic resources				
Ketersediaan/ existing					
		GPS	GPS	GPS	GPS
		<20 gr : 17.000	<20 gr : 16.000	<20 gr : 12.000	<20 gr : 17.000
		20-29 gr : 14.500	20-29 gr : 30.600	20-29 gr : 22.000	20-29 gr : 14.500
		30 gr : 18.900	30 gr : 13.500	30 gr : 29.400	30 gr : 23.200
Jumlah (ekor)					
		16 Famili	15 Famili	13 Famili	15 Famili
Total GPS (ekor)		40.200	38.900	33.700	41.464

Progres performance Induk udang vaname NuSa Dewa

Kriteria	Nilai Standar (Ziegler et al, 2015)	Induk NuSa Dewa	Sumber Induk Lain
Derajat <i>spawning</i> induk betina*	12%/hari	10-12%/hari	-
Rerata produksi telur tiap siklus pemijahan*	200.000 butir	200.000 – 400.000 butir	-
Rerata derajat pembuahan telur*	85%	85-90%	-
Rerata produksi naupli tiap siklus pemijahan*	170.000	150 – 350 ribu	250 – 350 ribu (Konabay-speed) 200 – 300 ribu (Konabay-strength) 300 – 400 ribu (Konabay-balance) 250 ribu (Syaqua)
Mortalitas bulanan saat perkawinan*	5%	3%	-
Derajat penetasan telur	-	78%	-

* = kriteria berdasarkan Recommended Performance Standard (Ziegler et al, 2015)

Progres performance Benih udang vanname NuSa Dewa

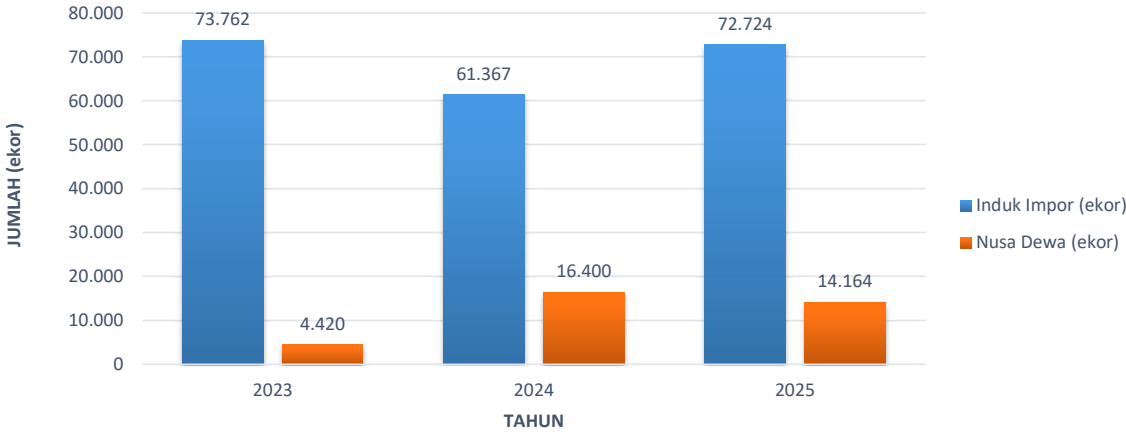
Kriteria	Nilai Standar (Ziegler et al, 2015)	Benih NuSa Dewa	Sumber Benih Lain
Padat tebar*	100-120 ekor/m2	200-400 ekor/m2	200-300 ekor/m2 (API) 100-300 ekor/m2 (Konabay-speed)
<i>Average growth</i> *	0,23 gr/hari	0,20 – 0,31	0,20 – 0,22 (WAS) 0,21 – 0,27 (Benchmark Balance) 0,33 – 0,42 (Konabay-speed) 0,22 – 0,30 (Konabay-strength) 0,25 – 0,33 (Konabay-balance)
<i>Food Conversion Ratio</i> *	≤1,4	1,34 – 1,4 (size 30-35)	1,36 – 1,38 (WAS) 1,15 – 1,22 (Benchmark Balance)
<i>Survival Rate</i>	-	76,1 – 90%	100% pada DOC 83 (WAS) 87,5 – 95,6% (Benchmark Balance) 80-85% (API) 70-80% (Konabay-speed) 75-85% (Konabay-balance) 85-90% (Konabay-strength)
<i>Mean Body Weight</i>	-	10,16 gr pada DOC 66 14,64 gr pada DOC 81 18,95 gr pada DOC 93	9,83 gr pada DOC 66 (WAS) 8,26 gr pada DOC 66 (MS) 15,15 gr pada DOC 81 (WAS) 11,88 gr pada DOC 81 (MS) 19,55 gr pada DOC 93 (WAS) 12,53 gr pada DOC 90 (MS)

*under size NSD di < 0.35%, S&K

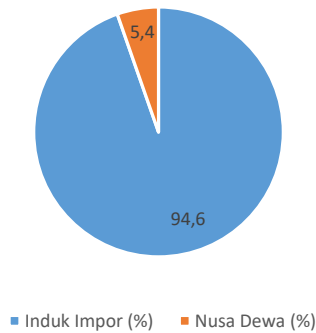
MARKET SHARE INDUK NUSA DEWA 2023 - 2025

Tahun	Rekom Impor	Induk Impor		Nusa Dewa	
		ekor	%	ekor	%
2023	3.189.200	77.893	94,6	4.420	5,4
2024	2.389.179	61.367	78,9	16.400	21,1
2025	9.959.800	61.700	81,3	14.164	18,7

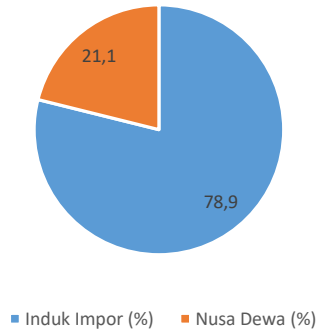
SEBARAN INDUK NASIONAL



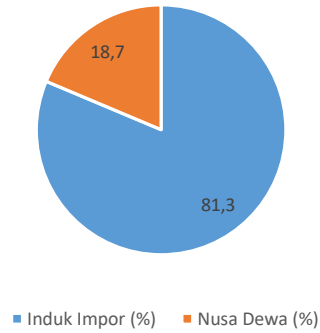
MARKET SHARE NUSA DEWA 2023



MARKET SHARE NUSA DEWA 2024



MARKET SHARE NUSA DEWA 2025





BPBAP Situbondo

DOC 60, size 100, balance
Density 1000/ m²
Raceway, 10 kolam



Karangasem

DOC 123, size 37, r-wssv



Karangasem

DOC 123, size 35, r-wssv

HATCHERY PUTRA PRIMA Anyer



200 pasang NSD
4 juta nauplii per hari
200.000 ekor nauplii per ekor

GENETIK *NUSA DEWA 2026* MEMENUHI KRITERIA UDANG KONSUMSI PREMIUM



CARAPACE

1. Carapace kepala sejajar tubuh
2. Carapace kepala tidak geser/terangkat

REDDISH COLOR

1. Warna kepala & tubuh merah menyala alami
2. Tidak pucat

HEPATO PANCREAS

1. Hepato tidak pecah
2. Hepato tidak leleh berair

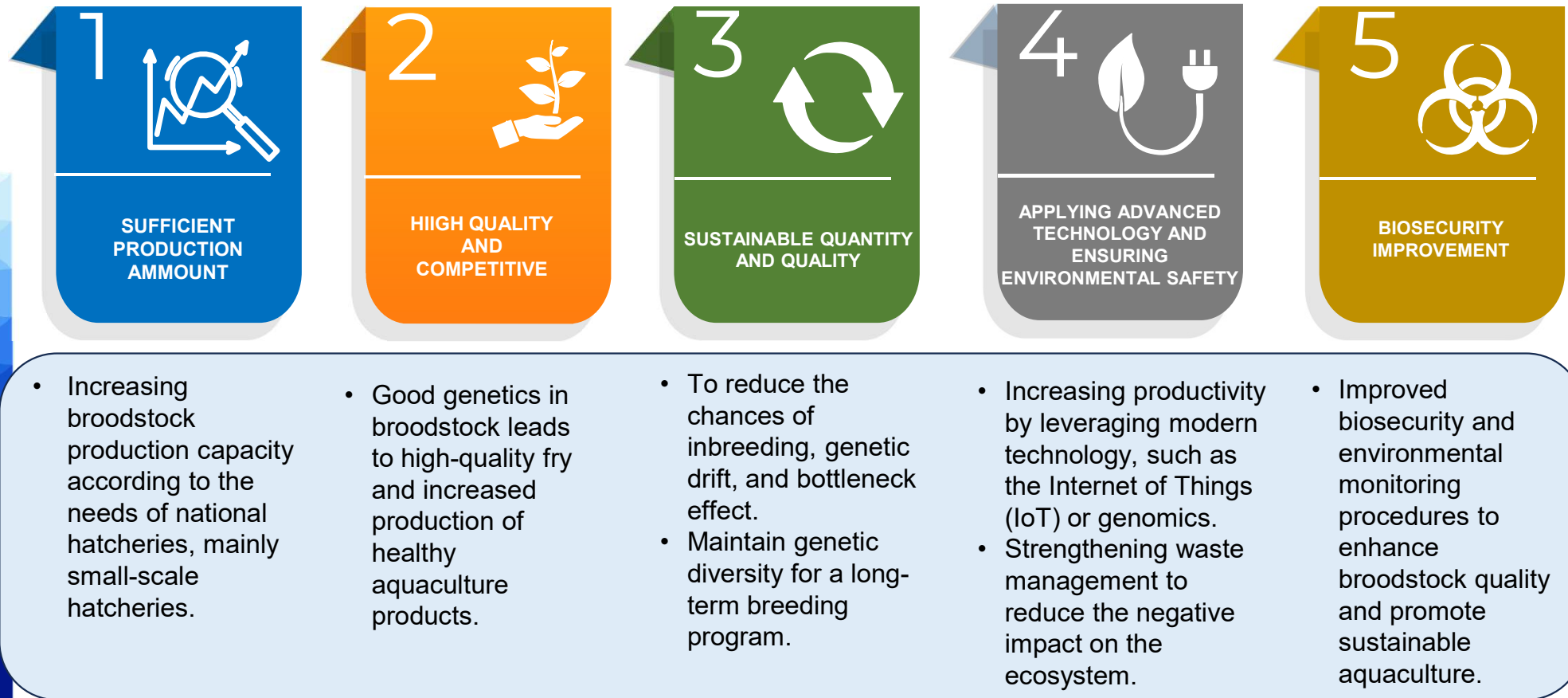
**Tes dianalisa setelah proses cooking 120 detik*

IISAP ADB

**DESAIN BROODSTOCK CENTER & LABORATORIUM DI
BPIU2K**

OBJECTIVES OF THE BREEDING PROGRAM

Towards National Self-Sufficiency in Shrimp Broodstock



CURRENT SHRIMP BROODSTOCK PRODUCTION QUANTITIES



CURRENT FACILITIES OF NATIONAL SHRIMP BROODSTOCK CENTER



Limited facilities currently available

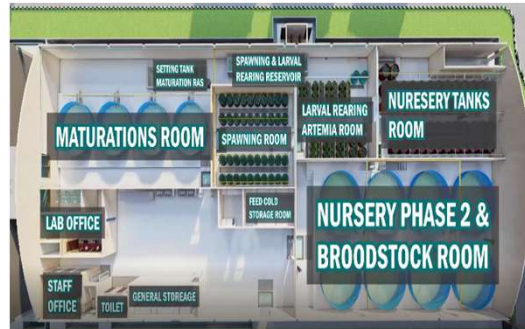
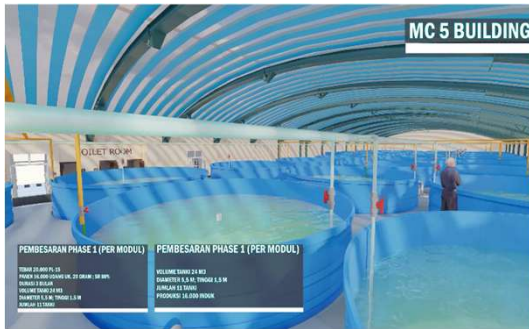
TOTAL SHRIMP BROODSTOCK CANDIDATES PRODUCTION



Rencana Desain Broodstock Center dan Laboratorium Kesehatan Ikan dan Lingkungan BPIUUK Karangasem

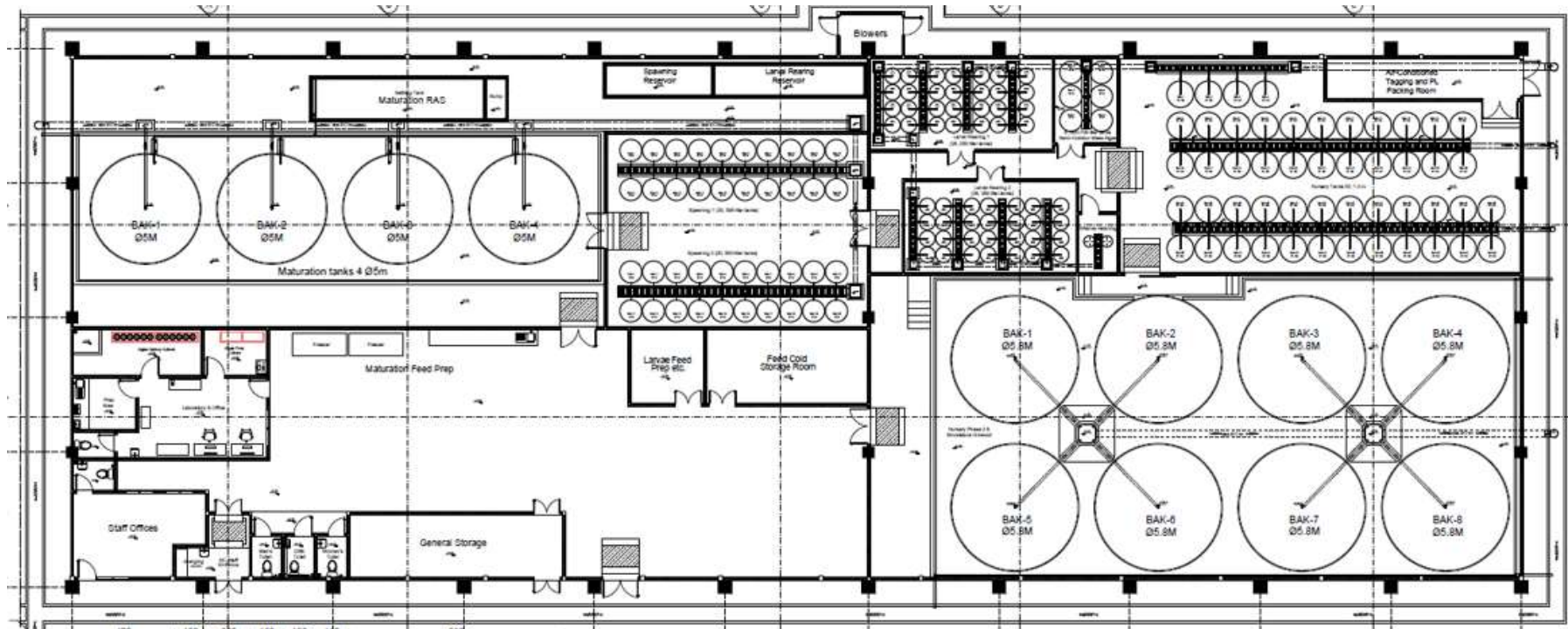


Broodstock Center



Desain Laboratorium







TERIMA KASIH

