

A Study on the Prevalence of MBV and WSSV in Wild Caught *P. monodon* Brood Stock in the East Coast of India

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INTRODUCTION

Tiger shrimp aquaculture in India (2006-07)

Area under culture	- 149632 ha
Production	- 144347 MT
No. of Shrimp hatcheries	- 283 nos.
Shrimp seed production capacity	- 12545 million
Actual functional capacity	- 8500 million
No. of spawners/broodstock required	- 62000 nos.
Main source of broodstock	- Wild broodstock of East coast
No. of PCR lab functioning (Out of existing 87 nos.)	- 42 nos.
Major viral diseases affecting shrimp culture	- WSSV, MBV
Estimated revenue loss due to disease per annum	- Rs. 300 crore US \$ 7.5 million

OBJECTIVES

- ❖ **To study the prevalence of major viral diseases in the wild tiger shrimp broodstock stock in East coast of India.**
- ❖ **To source high health brood stock from the wild catch and produce high health nauplii.**

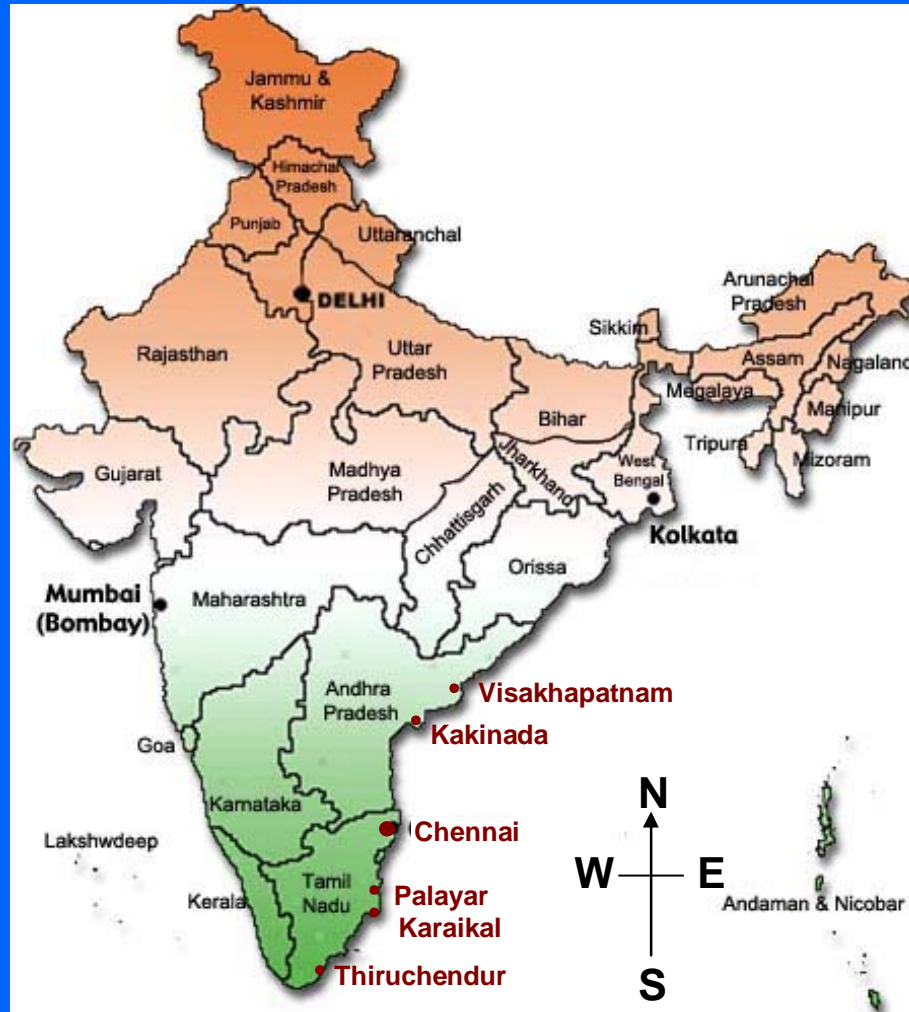
MATERIALS AND METHODS

Broodstock Collection Method

- Trawler catch
- Selection of broodstock at landing centre
- Packing in clean seawater – 1-2 pieces / styrofoam box
- Transport to hatchery – by road / air (2-8 hrs)
- Quarantine

- ❖ Molecular tools (PCR lab)
- ❖ IQ 2000 PCR kit
- ❖ Chemicals
- ❖ Holding in bio-secure conditions for spawning

BROODSTOCK COLLECTION CENTERS



❖ Visakhapatnam

❖ Kakinada

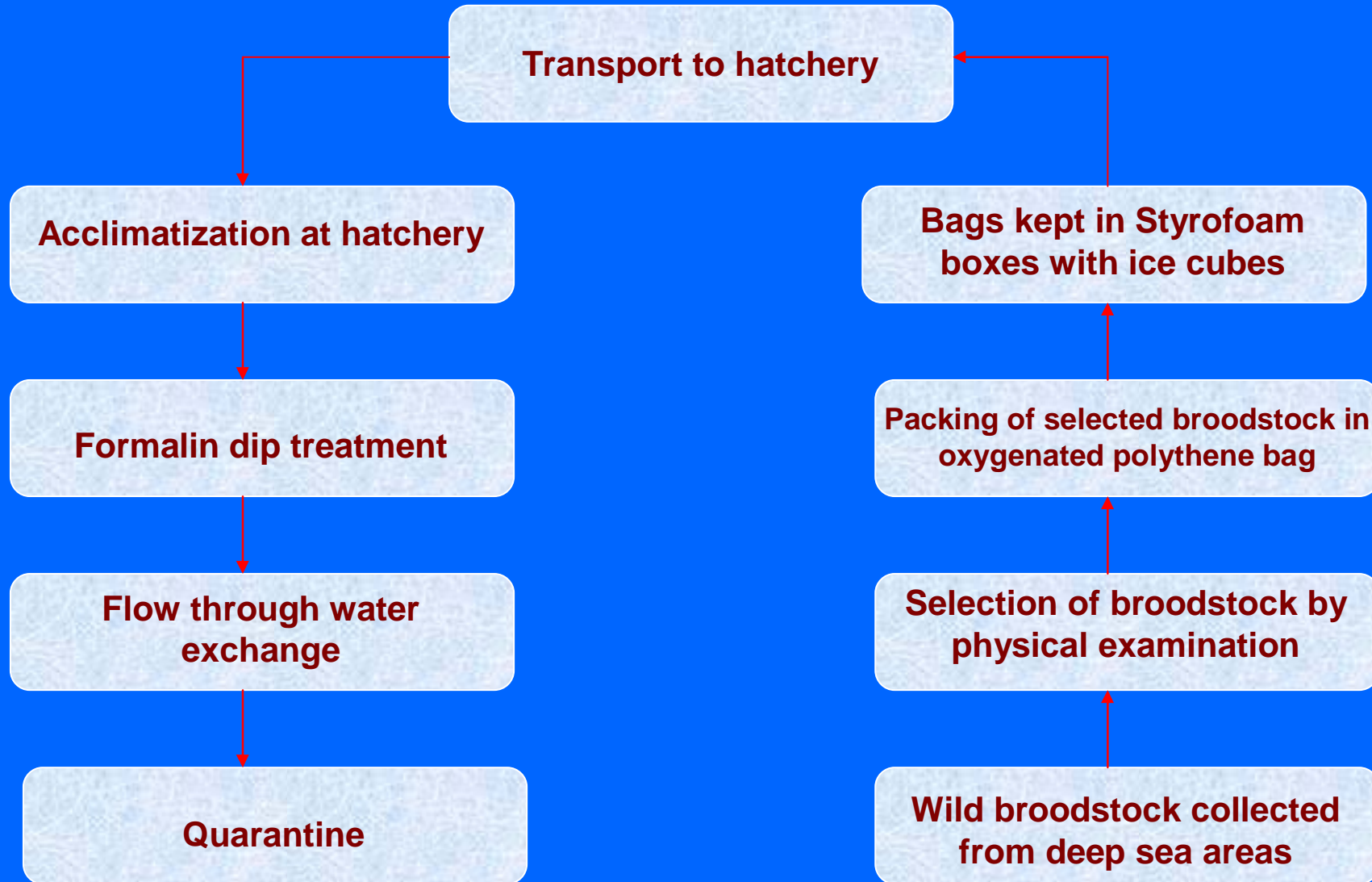
❖ Chennai

❖ Palayar

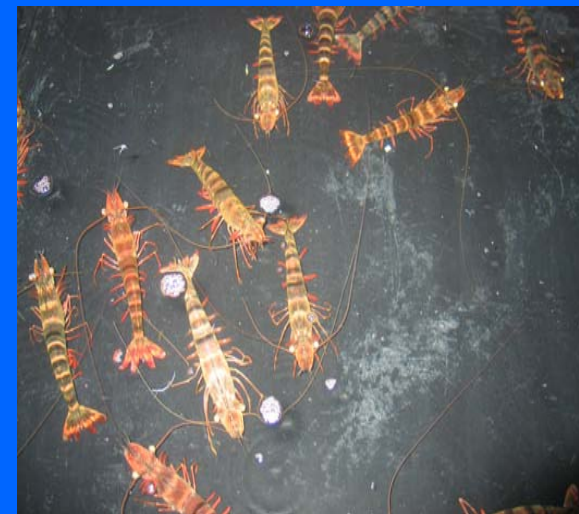
❖ Karaikal

❖ Thiruchendur

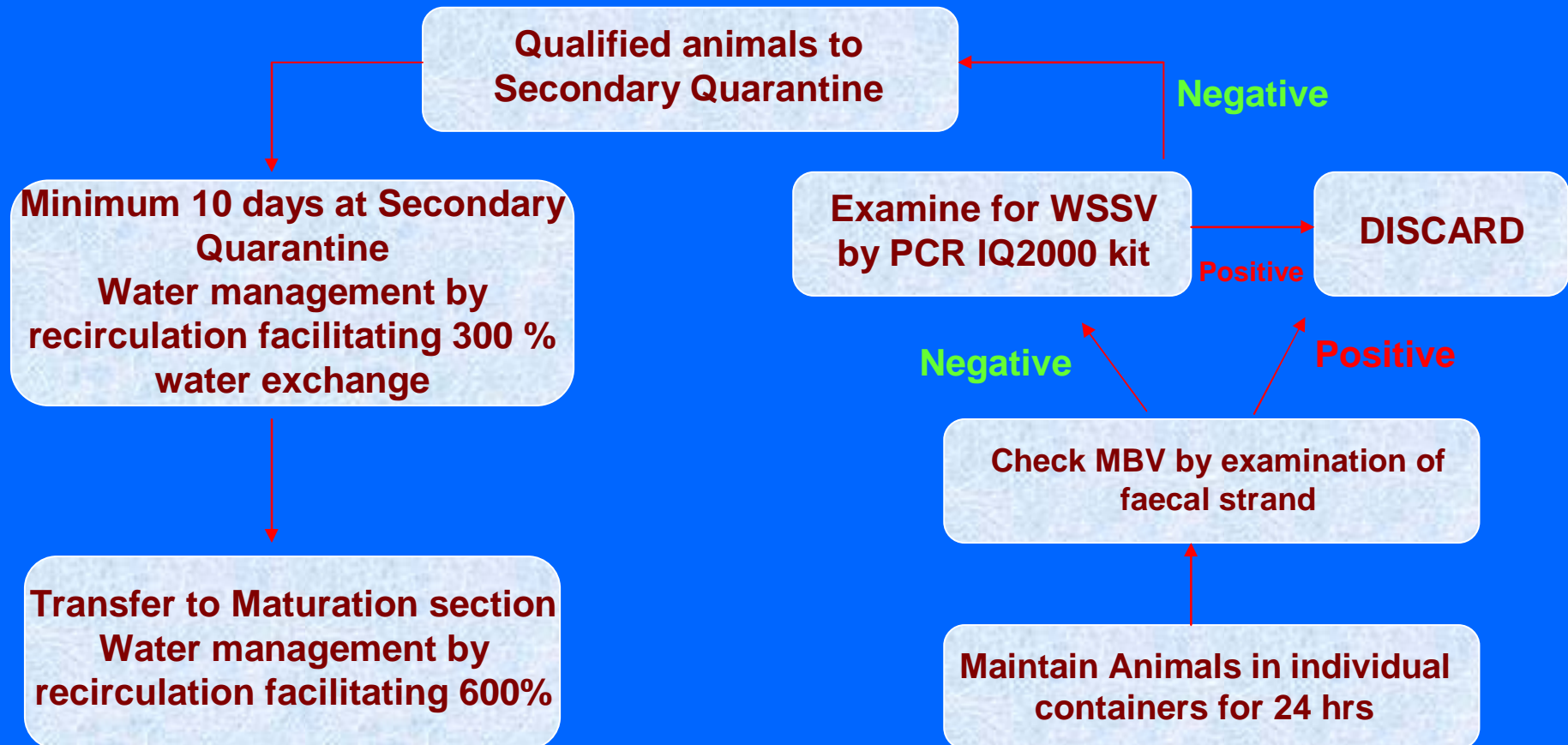
BROODSTOCK COLLECTION, TRANSPORTATION AND QUARANTINE



BROODSTOCK COLLECTION, SELECTION AND QUARANTINE



PROTOCOL FOLLOWED AT QUARANTINE SECTION



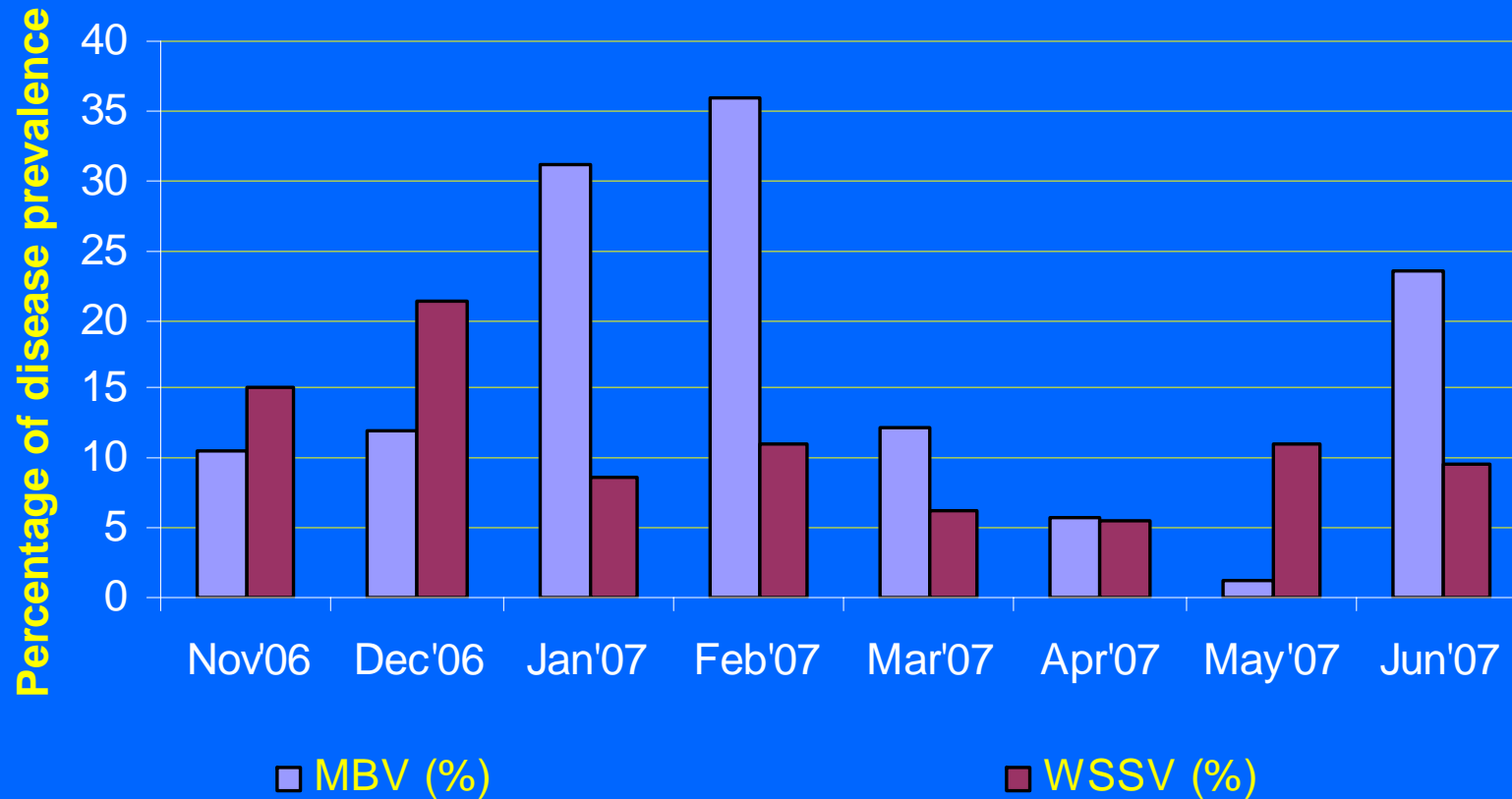
BROODSTOCK HOLDING TANKS SUPPORTED WITH RECIRCULATION SYSTEM



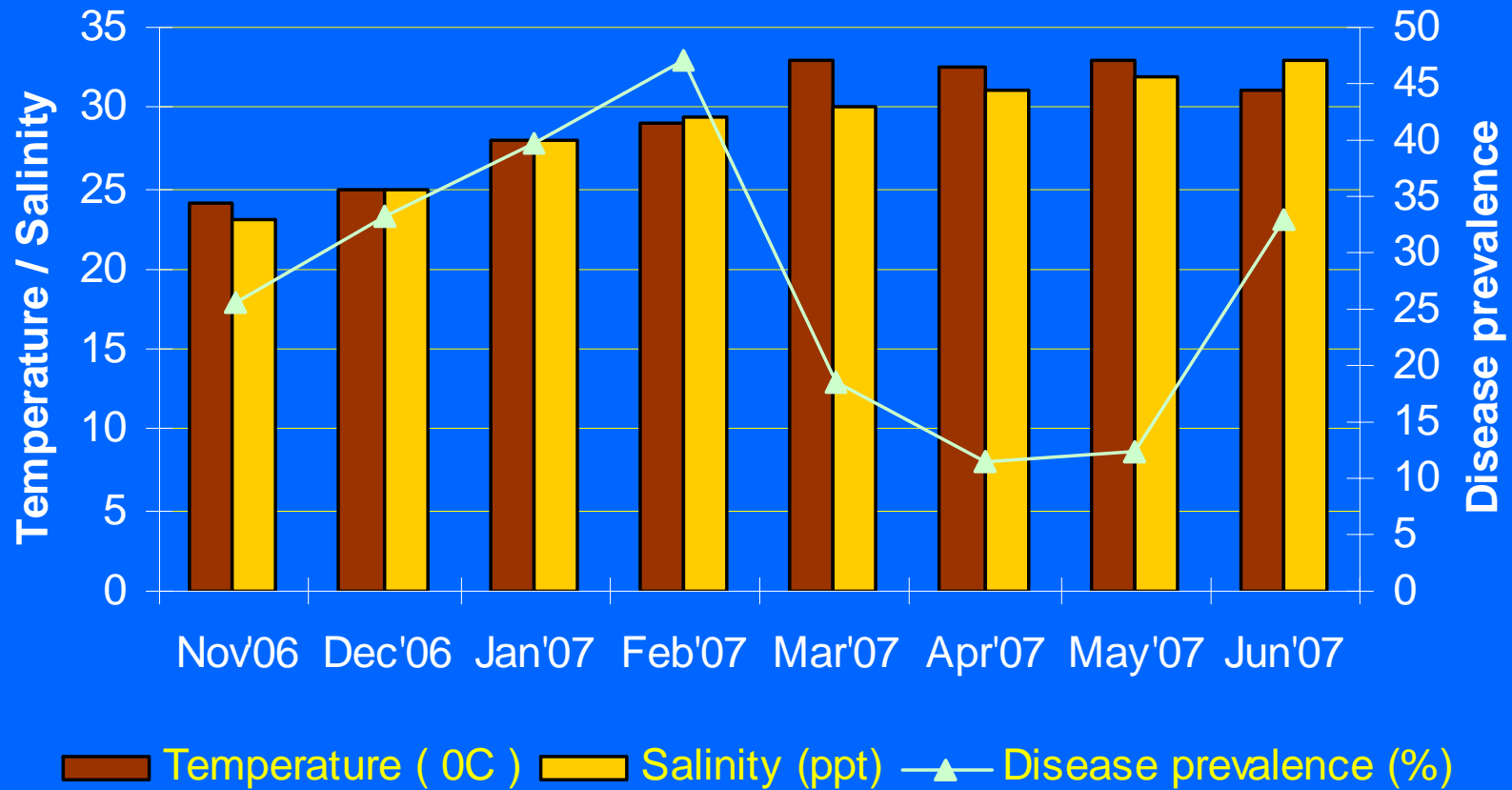
DETAILS OF BROOD STOCK COLLECTION AND STATUS OF MBV AND WSSV PREVALENCE

Months	Total collected	MBV (nos.)	WSSV (nos.)	Total disease (nos.)	MBV (%)	WSSV (%)	Total disease prevalence (%)
Nov'06	484	51	73	124	10.54	15.08	25.62
Dec'06	450	54	96	150	12.00	21.33	33.33
Jan'07	405	126	35	161	31.11	8.64	39.75
Feb'07	639	229	71	300	35.84	11.11	46.95
Mar'07	488	60	30	90	12.30	6.15	18.44
Apr'07	432	25	24	49	5.79	5.56	11.38
May'07	415	5	46	51	1.20	11.08	12.39
Jun'07	445	104	43	147	23.37	9.66	32.96
Total	3758	654	418	1072	17.40	11.12	28.52

MONTH WISE DETAILS - PERCENTAGE OF INFESTATION



MONTH WISE SALINITY AND TEMPERATURE VARIATION VIS-A-VIS DISEASE INCIDENCE



RESULTS AND CONCLUSION

- ❖ Prevalence of MBV and WSSV in wild caught broodstock from East coast is established.
- ❖ When MBV is less WSSV is significant and vice versa.
- ❖ Low temperature and salinity have direct impact on high incidence of viral infection.
- ❖ Prevalence of infection decreases in summer months.
- ❖ Study indicate that use of gravids without screening could enhance the disease incidence in production of PL.
- ❖ Strict quarantine and screening of broodstock can facilitate production of good quality seeds free of MBV and WSSV.

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High health nauplii

Thanks...