RINGKASAN

SUMINI. Identifikasi Bakteri Vibrio Pada Udang Vannamei (*Litopenaeus vannamei*) yang Terserang *White Feces Disease*. Dosen pembimbing Dr. Ir. Kismiyati, M.Si. dan Ir. Rahayu Kusdarwati, M.Kes.

Salah satu penyakit pada budidaya udang vaname yang saat ini sedang berkembang adalah penyakit *White Feces Disease* (WFD). WFD menyebabkan kerugian ekonomi yang signifikan pada industri budidaya udang di China, Indonesia, Malaysia, Thailand, Vietnam dan negara lain di kawasan asia tenggara (Inthusai, 2006; Limsuwan, 2010; Somboon *et al.,* 2012; Cao *et al*., 2015; Hou *et al*., 2018). Udang yang terinfeksi WFD mengalami penurunan nafsu makan, retardasi pertumbuhan dan meningkatnya nilai FCR. Penyebab penyakit WFD hingga saat ini masih diperdebatkan di kalangan ahli dan peneliti. Mikrosporidia *Enterocytozoon hepatopenaei* (EHP) ditemukan pada udang yang terinfeksi WFD di India (Rajendran *et al*., 2016), Thailand (Tangprasittipap, 2013) dan Indonesia (Tang *et al*., 2016). Sindrom WFD di Thailand dicurigai ada kaitannya dengan *Aggregated Transformed Microvilli* (ATM) (Sriurairatana *et al*., 2014). Selain itu, ditemukan adanya bakteri *Vibrio* pada udang yang terinfeksi WFD di Thailand (Limsuwan, 2010). Beberapa spesies *Vibrio* yang ditemukan yaitu V. *vulnificus,* V. *fluvialis*, V. *parahaemolyticus,* V. *alginolyticus,* V. *mimicus,* V. *chlorella* dan V. *damselae* (Limsuwan, 2010; Somboon *et al.*, 2012; Cao *et al.,* 2015).

Penelitian ini bertujuan untuk mengidentifikasi spesies bakteri *Vibrio* pada udang vaname yang terinfeksi WFD di Kabupaten Situbondo Provinsi Jawa Timur. Penelitian ini dilaksanakan pada bulan November 2017 sampai dengan Mei 2018 di Balai Perikanan Budidaya Air Payau, Situbondo (BPBAP). Metode penelitian yang digunakan dalam penelitian ini adalah metode survey. Penelitian ini dilakukan dengan mengidentifikasi jenis bakteri *Vibrio* hasil isolasi dari udang vaname yang terinfeksi WFD. Pengambilan sampel dilakukan dengan teknik tidak acak/ *non probability sampling*. Sampel bakteri diidentifikasi menggunakan kit *Analytical Profile Index*/ API 20NE (BioMeriuex), uji biokimia konvensioanl dan *Polymerase Chain Reaction* (PCR) dengan primer spesifik V. *harveyi* dan V. *parahaemolyticus.* Interpretasi hasil uji PAI 20NE dilakukan dengan software APIweb^{TM} versi 7.0 kemudian dikompilasi dengan uji biokimia dan PCR.

Hasil penelitian ini diperoleh 30 isolat bakteri yaitu 22 isolat V. *harveyi* (73%), tiga isolat V. *alginolyticus* (10%), dua isolat V. *fluvialis* (7%), satu isolat *Vibrio parahaemolyticus* (3%) dan dua isolat bakteri bukan genus *Vibrio* (*Shewanella putrefaciens*) (7%). V. *harveyi* ditemukan pada seluruh target yang diperiksa (hepatopankreas, usus, feses dan air), V. *alginolyticus* dan V. *fluvialis* ditemukan pada hepatopankreas sedangkan V. *parahaemolyticus* ditemukan hanya pada air.

SUMMARY

SUMINI. Identification of *Vibrio* Bacteria Againts *Litopenaeus vannamei* Caused by White Feces Disease. Academic Advisor Dr.Ir. Kismiyati, M.Si. and Ir.Rahayu Kusdarwati, M.Kes.

One of the diseases on cultivation of *Litopennaeus vannamei* that are currently being developed is *White Feces Disease* (WFD). WFD causing significant economic losses to shrimp aquaculture industry in China, Indonesia, Malaysia, Thailand, Vietnam and other countries in southeast asia (Inthusai, 2006; Limsuwan, 2010; Somboon *et al*., 2012; Cao *et al*., 2015; Hou *et al*., 2018). The Shrimp that was Infected by WFD has decreased appetite, growth retardation and increased FCR values. Until today, causes of WFD still debated among the experts and researchers. Microsporidia *Enterocytozoon hepatopenaei* (EHP) found on the shrimp that have infected by WFD in India (Rajendran et al., 2016), Thailand (Tangprasittipap, 2013) and Indonesia (Tang *et al*., 2016). In Thailand, WFD syndrome suspected that there was a relation to the *Aggregated Transformed Microvilli* (ATM) (Sriurairatana *et al*., 2014). In addition, *Vibrio* bacteria found on the shrimp that have infected by WFD in Thailand (Limsuwan, 2010). Several species of Vibrio are V. *fluvialis*, V. *vulnificus*, V. *parahaemolyticus*, V. *alginolyticus*, V. *mimicus*, V. *damselae* and V. *chlorella* (Limsuwan, 2010; Somboon *et al*., 2012; Cao *et al*., 2015).

The purpose of this research is to identify the species of *Vibrio* bacteria in vaname that was infected by WFD in Situbondo, East Java province. This research was implemented in November 2017 to may 2018 in Brackishwater Aquaculture Development Center - Situbondo. In this study was used an survey method. This research was conducted by identifying the type of *Vibrio* bacteria isolated from vaname that was infected by WSD. Sampling was conducted with non probability sampling. A sample of bacteria was identified using *Analytical Profile Index*/API 20NE (BioMeriuex), biochemical test and *Polymerase Chain Reaction* (PCR) with specific primer V. *harveyi* and V. *parahaemolyticus.* Interpretation of API 20NE test was done with APIweb^{TM} software version 7.0 then compiled with the biochemical test and PCR.

The results of this study are obtained 30 isolates of bacteria, there are 22 isolates of V. *harveyi* (73%), three isolates of V. *alginolyticus* (10%), two isolates of V. *fluvialis* (7%), one isolates of V. *parahaemolyticus* (3%) and two isolates of bacteria instead of *Vibrio* (*Shewanella putrefaciens*) (7%). V. *harveyi* found on the whole target was checked (hepatopancreas, intestines, feces and water), V. *alginolyticus* and V. *fluvialis* found on hepatopancreas while V. *parahaemolyticus* was found only on water.