Identifikasi spesies dan distribusi larva udang mantis di Teluk Banten berdasarkan analisis DNA barcoding = Species identification and distribution of mantis shrimp larvae in Teluk Banten based analysis of DNA barcoding

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Abstrak

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Telah dilakukan penelitian mengenai identifikasi spesies dan distribusi larva udang mantis di Teluk Banten selama bulan Oktober 2013--November 2013. Penelitian bertujuan untuk mengukur efektivitas aplikasi DNA barcoding dalam identifikasi larva udang mantis dan mempelajari pola distribusinya di Teluk Banten. Larva udang mantis sebanyak 138 individu dikoleksi dengan menggunakan jaring larva dengan besar mulut 30x30 cm2 dan besar jaring sebesar 500 m dari 6 stasiun penelitian. Daerah COI sebagai penanda DNA barcoding efektif dapat digunakan untuk identifikasi larva udang mantis dengan variasi intraspesies sekuen COI berkisar antara 0,7--2,4%. Distribusi larva udang mantis berpusat di Stasiun 4 yang ditandai dengan tingginya kelimpahan larva udang mantis pada lokasi tersebut (P<0,005; ANOSIM). Ordinasi NMDS dan klusterisasi berdasarkan jarak Bray-Curtis menunjukkan distribusi larva udang mantis dipengaruhi oleh kondisi perairanTeluk Banten. Faktor lingkungan yang memengaruhi kelimpahan larva udang mantis adalah suhu, salinitas dan kecerahan dengan nilai R2 adjusted sebesar 94,5% (P<0,05). Distribusi, kelimpahan, dan komposisi larva udnag mantis di Teluk Banten juga dipengaruhi oleh pola perilaku larva (vertical migration) dan arah arus yang memengaruhi perairan Teluk Banten. Distribusi kelimpahan larva pada lokasi penelitian selama bulan Oktober--November 2013 bergerak kearah barat Teluk Banten.
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ABSTRACT
Planktonic larvae of stomatopoda were collected at six stations in Banten Bay from October 2013 to November 2013, aimed at assessing effectiveness of using COI gene for barcoding stomatopoda larvae and studying its distribution in Banten Bay. A total of 138 stomatopod larvae were obtained by deploying larval trap of 30x30 cm2 mouth diameters and 500 m mesh size for approximately 10 minutes just beneath the surface. Five species of stomatopod successfully identified using COI gene as barcode marker. Variation of intraspecies for COI gene based on Kimura 2-Parameter (K2P) were found to be ranged from 0,7% to 2,4%. NMDS ordination and Bray-Curtis cluster shown that distribution of stomatopod larvae affected by hydrodynamic on Banten Bay. Larvae abundance at six stations in Banten Bay affected by temperature, salinity, and visibility with

score of adjusted R2 is 94,5% (P<0,05). Distribution, abundance, and diversity of stomatopods larvae are affected by vertical migration and current on Teluk Banten water.;Planktonic larvae of stomatopoda were collected at six stations in Banten Bay from October 2013 to November 2013, aimed at assessing effectiveness of using COI gene for barcoding stomatopoda larvae and studying its distribution in Banten Bay. A total of 138 stomatopod larvae were obtained by deploying larval trap of 30x30 cm2 mouth diameters and 500 m mesh size for approximately 10 minutes just beneath the surface. Five species of stomatopod successfully identified using COI gene as barcode marker. Variation of intraspecies for COI gene based on Kimura 2-Parameter (K2P) were found to be ranged from 0,7% to 2,4%. NMDS ordination and Bray-Curtis cluster shown that distribution of stomatopod larvae affected by hydrodynamic on Banten Bay. Larvae abundance at six stations in Banten Bay affected by temperature, salinity, and visibility with score of adjusted R2 is 94,5% (P<0,05). Distribution, abundance, and diversity of stomatopods larvae are affected by vertical migration and current on Teluk Banten water.;Planktonic larvae of stomatopoda were collected at six stations in Banten Bay from October 2013 to November 2013, aimed at assessing effectiveness of using COI gene for barcoding stomatopoda larvae and studying its distribution in Banten Bay. A total of 138 stomatopod larvae were obtained by deploying larval trap of 30x30 cm2 mouth diameters and 500 m mesh size for approximately 10 minutes just beneath the surface. Five species of stomatopod successfully identified using COI gene as barcode marker. Variation of intraspecies for COI gene based on Kimura 2-Parameter (K2P) were found to be ranged from 0,7% to 2,4%. NMDS ordination and Bray-Curtis cluster shown that distribution of stomatopod larvae affected by hydrodynamic on Banten Bay. Larvae abundance at six stations in Banten Bay affected by temperature, salinity, and visibility with score of adjusted R2 is 94,5% (P<0,05). Distribution, abundance, and diversity of stomatopods larvae are affected by vertical migration and current on Teluk Banten water., Planktonic larvae of stomatopoda were collected at six stations in Banten Bay from October 2013 to November 2013, aimed at assessing effectiveness of using COI gene for barcoding stomatopoda larvae and studying its distribution in Banten Bay. A total of 138 stomatopod larvae were obtained by deploying larval trap of 30x30 cm2 mouth diameters and 500 μm mesh size for approximately 10 minutes just beneath the surface. Five species of stomatopod successfully identified using COI gene as barcode marker. Variation of intraspecies for COI gene based on Kimura 2-Parameter (K2P) were found to be ranged from 0,7% to 2,4%. NMDS ordination and Bray-Curtis cluster shown that distribution of stomatopod larvae affected by hydrodynamic on Banten Bay. Larvae abundance at six stations in Banten Bay affected by temperature, salinity, and visibility with score of adjusted R2 is 94,5% (P<0,05). Distribution, abundance, and diversity of stomatopods larvae are affected by vertical migration and current on Teluk Banten water.]