



# International Conference on Biodiversity

Abs Soc Indon Biodiv  
vol. 4 | no. 8 | pp. 225-267 | November 2017  
ISSN: 2407-8069

# ABSTRACT INTERNATIONAL CONFERENCE ON BIODIVERSITY

SOCIETY FOR INDONESIAN BIODIVERSITY

Medan, 4-5 November 2017

Organized by



Selected manuscripts  
will be available at

**BIODIVERSITAS**  
Journal of Biological Diversity

**NUSANTARA  
BIOSCIENCE**







# **A B S T R A C T**

## **INTERNATIONAL CONFERENCE ON BIODIVERSITY**

### **SOCIETY FOR INDONESIAN BIODIVERSITY**

**Medan, 4-5 November 2017**

**T H E M E :**

**Challenges of Tropical Biodiversity  
Management and Conservation in Global Change**

---

#### **SECRETARIAT ADDRESS**

Sekretariat Masyarakat Biodiversitas Indonesia, Kantor Jurnal Biodiversitas, Jurusan Biologi, FMIPA UNS, Jl. Ir. Sutami 36A  
Surakarta 57126, Jawa Tengah, Indonesia. Tel./fax.: +62-271-663375. Email: [biodiversitas@gmail.com](mailto:biodiversitas@gmail.com). Website:  
[biodiversitas.mipa.uns.ac.id/snmbi.html](http://biodiversitas.mipa.uns.ac.id/snmbi.html)

Organized by



Selected manuscripts  
will be available at

**BIODIVERSITAS**  
Journal of Biological Diversity

**NUSANTARA  
BIOSCIENCE**



**THIS PAGE INTENTIONALLY LEFT BLANK**

# TIME SCHEDULE

## International Conference on Biodiversity

### Society for Indonesian Biodiversity (SIB)

#### Medan, Indonesia, 4-5 November 2017

| TIME                    | ACTIVITIES  | PERSON IN CHARGE  | SITE                       |
|-------------------------|---|---|----------------------------|
| <b>November 4, 2017</b> |   |   |                            |
| 08.00-08.30             | Registration  | Committee   | Lobby                      |
| 08.30-08.40             | Indonesia Raya National Anthem  | Committee   | R1                         |
| 08.40-08.50             | Speech of the Committee   | Chairman of the committee                                     | R1                         |
| 08.50-09.00             | Opening speech [I]  | Rector of the University of Sumatera Utara, Medan             | R1                         |
| 09.00-09.15             | Opening speech [II]   | Governor of North Sumatra Province                            | R1                         |
| 09.15-09.30             | Performing Arts (Choir and Dance)   | Committee   | R1                         |
| 09.30-09.45             | Photo Session and Coffee Break  | Committee   | R1, Lobby                  |
| 09.45-11.15             | Panel 1<br><b>Dr. Wiratno</b><br><b>Prof. Dr. Mashhor Mansor</b>  | Moderator   | R1                         |
| 11.15-12.45             | Panel 2<br><b>Prof. Dr. Bambang Hero Saharjo</b><br><b>Prof. Dr. Ko Harada</b>  | Moderator   | R1                         |
| 12.45-13.30             | Rest, pray, lunch   | Committee   | Lobby                      |
| 13.30-14.30             | Parallel presentation I<br>Group 1: <b>AO-01 to AO-08</b><br>Group 2: <b>AO-09 to BO-01</b><br>Group 3: <b>BO-02 to BO-09</b><br>Group 4: <b>BO-10 to BO-17</b><br>Group 5: <b>BO-18 to BO-25</b>   | Moderator<br>Moderator<br>Moderator<br>Moderator<br>Moderator | R1<br>R2<br>R3<br>R4<br>R5 |
| 14.30-14.45             | Coffee break, pray  | Committee   | Lobby                      |
| 14.45-15.45             | Parallel presentation II<br>Group 6: <b>BO-26 to BO-33</b><br>Group 7: <b>BO-34 to BO-41</b><br>Group 8: <b>BO-42 to BO-48</b><br>Group 9: <b>BO-49 to BO-55</b><br>Group 10: <b>BO-56 to CO-06</b> | Moderator<br>Moderator<br>Moderator<br>Moderator<br>Moderator | R1<br>R2<br>R3<br>R4<br>R5 |

|             |                                       |                                    |    |
|-------------|---------------------------------------|------------------------------------|----|
| 15.45-16.45 | Parallel presentation III             |                                    |    |
|             | Group 11: <b>CO-07 to CO-13</b>       | Moderator                          | R1 |
|             | Group 12: <b>CO-14 to EO-03</b>       | Moderator                          | R2 |
|             | Group 13: <b>EO-04 to EO-10</b>       | Moderator                          | R3 |
|             | Group 14: <b>EO-11 to EO-17</b>       | Moderator                          | R4 |
|             | Group 15: <b>EO-18 to EO-24</b>       | Moderator                          | R5 |
| 16.45-17.00 | Announcement of the Best Presenters   | Chairman of the Board of Assessors | R1 |
|             | Closing speech and other explanations | Chairman of the committee          | R1 |

### November 5, 2017

|             |                             |           |       |
|-------------|-----------------------------|-----------|-------|
| 07.00-07.30 | Registration for field trip | Committee | Lobby |
| 07.30-13.00 | City tour                   | Committee | -     |
| 13.00-15.00 | Depart to Airport           | Committee | -     |

---

### Upcoming events:

1. December 8-10, 2017 – Bali (International Conference on Biodiversity)  
<http://biodiversitas.mipa.uns.ac.id/S/gen/schedules.html>

**TABLE OF CONTENTS**  
**International Conference on Biodiversity**  
**Society for Indonesian Biodiversity (SIB)**  
**Medan, Indonesia, 4-5 November 2017**

| <b>CODE</b>  | <b>TITLE</b>  | <b>AUTHOR(S)</b>   | <b>PAGES</b> |
|--------------|---|--|--------------|
|              | <b>Genetic diversity</b>  |  |              |
| <b>AO-01</b> | Characterization of vegetative and reproductive growth of introduce and some local maize varieties  | Khairunnisa Lubis, Wika Syahputri, Hot Setiado   | 225          |
| <b>AO-02</b> | Economic value of carbon reserve on the Sumatra Orangutan Habitat ( <i>Pongo abelii</i> ) in Sei Betung Resort, Primary Forest of Gunung Leuser National Park, North Sumatra, Indonesia | Agus Purwoko, Nurdin Sulistiyono, Mastiur Tinambunan   | 225          |
| <b>AO-03</b> | Variation of plant growth and wood quality in provenance-progeny test <i>Neolamarkcia cadamba</i> in West Java, Indonesia   | Nelly Anna, Iskandar Z. Siregar, Supriyanto, Lina Karlinasari, Dede Jajat Sudrajat                 | 226          |
| <b>AO-04</b> | Phylogenetic relationship of <i>Styrax sumatrana</i> Inferred from trnL-trnF Intergenic Spacer Sequences  | Arida Susilowati, Henti Hendalastuti Rachmat, Wiza Noni Faradillah, Cut Rizlani Kholibrina         | 226          |
| <b>AO-05</b> | Identification morphological characteristic of Japanese Persimmon plants ( <i>Diospyros kaki</i> ) in some areas of Karo District, North Sumatra, Indonesia                             | Septias Sanggita, Diana Sofia Hanafiah, Khairunnisa Lubis  | 226          |
| <b>AO-06</b> | Genetic variation of mindi ( <i>Melia azedarach</i> ) from community forest North Sumatra (Indonesia) by microsatellite   | Ridahati Rambey, Nelly Anna  | 227          |
| <b>AO-07</b> | Morphological and agronomic character variation of F1 cassava clones in Lampung, Indonesia  | Setyo Dwi Utomo, Akari Edy, Erwin Yuliadi, Kresna Shifa Usodri, Muhammad Jumadi, And Vetty Pratiwi | 227          |
| <b>AO-08</b> | Variation of 20 tidal paddy germplasm accession in Indragiri Hilir District (South Sumatra, Indonesia) based on analysis of Random Amplified Polymorphic DNA                            | Nursida, Irfan Suliansyah, Etti Swasti, Auzar Syarif   | 227          |
| <b>AO-09</b> | Application of 5.8S nuclear gene to identify peat swamp trees in Rawa Tripa, Aceh, Indonesia  | Zairin Thomy, Ardhana Yulisma, Essy Harnelly, Arida Susilowati                                     | 228          |

|                             |   |   |     |
|-----------------------------|---|---|-----|
| <b>AO-10</b>                | Effect of chitosan and salicylic acid on soybean ( <i>Glycine max</i> ) varieties growth under dryland conditions   | Yaya Hasanah, Mariani Br. Sembiring   | 228 |
| <b>AO-11</b>                | Abundance and biodiversity-based its preference on habitat characteristics in irrigated waters Bedono Sayung, Demak, Central Java, Indonesia  | Pujiono W. Purnomo, Norma Afiati, Niniek Widyorini, Oktavianto Eko Jati   | 228 |
| <b>AO-12</b>                | Genetic diversity of bamboo species based on Random Amplified Polymorphic DNA   | Annisa, Rini Hafzari, Tia Setiawati, Joko Kusmoro   | 229 |
| <b>AO-13</b>                | Mating system and population genetic of <i>Bruguiera gymnorhiza</i> and <i>Kandelia obovata</i> , viviparous mangrove species as revealed by microsatellite                                 | Mohammad Basyuni, Shigeyuki Baba, Hirosuke Oku  | 229 |
| <b>AO-14</b>                | The analysis of potential DNA barcode of durian ( <i>Durio</i> spp.) and langsung ( <i>Lansium</i> spp.) in agroforestry practices in Berau, East Kalimantan, Indonesia                     | Rianda Sinurat, Iskandar Z. Siregar, Fifi Gus Dwiyantri, Ko Harada  | 229 |
| <b>AO-15</b>                | Phylogenetic analysis of five Shorea species based on rbcL and matK gene in Ketambe Research Station, Gunung Leuser National Park, Southeast Aceh, Indonesia                                | Essy Harnelly, Zairin Thomy, Nir Fathiya  | 230 |
| <b>Diversity of Species</b> |   |   |     |
| <b>BO-01</b>                | Estimation of aboveground tree biomass <i>Toona sureni</i> and <i>Coffea arabica</i> in agroforestry system of Aek Nauli, North Sumatra, Indonesia  | Siti Latifah, Agus Purwoko, Etika Tanjung   | 230 |
| <b>BO-02</b>                | Impacts of macro-and microplastic on macrozoobenthos abundance in intertidal zone   | Ahmad Muhtadi, Arief P. Bangun, Hesti Wahyuningsih  | 230 |
| <b>BO-03</b>                | Tree composition species and forest type ecosystem of tropical rainforest in Papua, Indonesia   | Samsuri, Cecep Kusmana, Tatang Tiryana  | 231 |
| <b>BO-04</b>                | Diversities and distribution insects at paddy cultivation in Dairi, North Sumatra, Indonesia  | Ameilia Zuliyanti Siregar, Tulus, Kemala Sari Lubis   | 231 |
| <b>BO-05</b>                | Diversity of decomposer microorganisms under kemenyan tree stand ( <i>Styrax</i> spp.)  | Deni Elfiati, Arida Susilowati, Nurhidayah  | 232 |
| <b>BO-06</b>                | Identification and laboratory rearing trials of zoanthids (Cnidaria: Verrill, 1865) collected from the four rocky ledges of Pakistan coast  | Syeda Sobia Nasir, Haroon Khan, Nuzhat Afsar  | 232 |
| <b>BO-07</b>                | Diversity of fungi associated with leaf spot of mango ( <i>Mangifera indica</i> )   | Latiffah Zakaria, Nurul Husna Omar  | 232 |
| <b>BO-08</b>                | Monitoring orangutan reintroduction: results of activity budgets, diets, vertical use and associations during the first year post-release in Kehje Sewen Forest, East Kalimantan, Indonesia | Fitriah Basalamah, Sri Suci Utami Atmoko, Dyah Perwitasari-Farajallah, Ibnul Qayim, Jamartin Sihite, Maria Van Noordwijk, Erik Willems, Carel P. Van Schaik | 233 |
| <b>BO-09</b>                | Arbuscular Mycorrhizal Fungi on <i>Casuarina equisetifolia</i> : Abundance in different soil depths   | Delvian, Ridahaty Rambey  | 233 |

|              |   |  |     |
|--------------|---|--|-----|
| <b>BO-10</b> | Flowering and fruiting phenology of salak sidimpuan ( <i>Salacca sumatrana</i> Becc.)   | Rasmita Adelina, Irfan Suliansyah, Auzar Syarief, Warnita                              | 233 |
| <b>BO-11</b> | Wood chemical component of <i>Styrax sumatrana</i> based on growth location and stem position   | Yenni Suhaida Siregar, Apri Heri Iswanto, Arida Susilowati, Aswandi, Cut Rizlani       | 234 |
| <b>BO-12</b> | Isolation and identification of mycorrhizae from native orchids of Mount Lawu, Java, Indonesia  | Ratna Setyaningsih, Ari Pitoyo, Sugiyarto, Hani Wulandari Pratiwi                      | 234 |
| <b>BO-13</b> | Relationship between <i>Spodoptera litura</i> larvae population density, with attack intensity and decreasing of seed yields on some soybean varieties in South Sulawesi, Indonesia | Abdul Fattah, , La Daha, Sylvia Sjam, Dan Itji Diana Daud                              | 234 |
| <b>BO-14</b> | Estimation of population density of Sumatran elephantsumatra ( <i>Elephas maximus sumatranus</i> ) in Jantho Pinus Nature Reserve, Aceh Besar, Indonesia                            | Ma'rifatin Zahrah  | 235 |
| <b>BO-15</b> | Durability properties of <i>Styrax</i> wood from North Tapanuli, North Sumatra, Indonesia   | Apri Heri Iswanto, Joel Elpinta Tarigan, Joel Tambunan, Arida Susilowati               | 235 |
| <b>BO-16</b> | Macroscopic and microscopic characteristic of <i>Styrax</i> wood from North Tapanuli, Indonesia   | Apri Heri Iswanto, Rudi Hartono, Sondang Ambarita, Arida Susilowati                    | 235 |
| <b>BO-17</b> | Free radical scavenging activity of kemenyan resin, an Indonesian native plant <i>Styrax sumatrana</i>  | Asep Hidayat, Apri Heri Iswanto, Arida Susilowati, Henti Hendalastuti Rahmat           | 236 |
| <b>BO-18</b> | The diversity of tree species and Green Open Space (GOS) in Syiah Kuala University, Aceh, Indonesia   | Vivera Ruselli Puspa, Djufri, Hasanuddin   | 236 |
| <b>BO-19</b> | Study on diversity of macrofungi in Singgalang and Marapi Forest Mountain Area, West Sumatra, Indonesia   | Noverita, Tatang Mitra Setia   | 236 |
| <b>BO-20</b> | The potency of biomass and carbon stocks of bamboo in North Sumatra, Indonesia  | Muhdi, Irawati Azhar, Sihol Marito Malau, Hafizah Arinah, Yonri Situmorang             | 236 |
| <b>BO-21</b> | Stand structure of Tapanuli cultivar of <i>Pinus merkusii</i> on its natural site in North Sumatra, Indonesia   | Alfan Gunawan Ahmad, Ulfah Juniarti Siregar, Hadi Susilo Arifin, Chairil Anwar Siregar | 237 |
| <b>BO-22</b> | Diversity of endemic fish in inlet and water body of ancient Lake Matano, South Sulawesi, Indonesia   | Syahroma Husni Nasution, Rahmi Dina, Ira Akhdiana                                      | 237 |
| <b>BO-23</b> | Community structure of necton in Upstream Wampu, North Sumatra, Indonesia   | Desrita, Ahmad Muhtadi   | 238 |
| <b>BO-24</b> | A new record of <i>Sonneratia ovata</i> , a near threatened mangrove species in North Moluccas Islands, Indonesia   | Onrizal, Suhardjono, Mashhor Mansor  | 238 |
| <b>BO-25</b> | Substrate type of macrofungi in the forest area of Mount Marapi, West Sumatra, Indonesia  | Tatang Mitra Setia, Noverita, Siti Fatimah Yanugroho                                   | 238 |



|              |   |  |     |
|--------------|---|--|-----|
| <b>BO-26</b> | Characterization of <i>Styrax</i> forest management in North Sumatra, Indonesia: A Two-Step Cluster Method  | Aswandi, Cut Rizlani Kholibrina, Arida Susilowati, Apri Heri Iswanto                   | 239 |
| <b>BO-27</b> | Can incense propolis production? <i>Trigona</i> spp. beekeeping in <i>Styrax</i> forest of Lake Toba, North Sumatra, Indonesia                            | Aswandi, Cut Rizlani Kholibrina, Apri Heri Iswanto, Arida Susilowati                   | 239 |
| <b>BO-28</b> | Utilization of medicinal plants by the community around Deleng Lancuk Tourism Park, North Sumatra, Indonesia  | Oding Affandi, Ridwanti Batubara   | 239 |
| <b>BO-29</b> | Estimating wild population of Sunda pangolin ( <i>Manis javanica</i> Desmarest, 1822) in North Sumatra, Indonesia   | Wanda Kuswanda, Onrizal,   | 240 |
| <b>BO-30</b> | Characteristics of three lesser-used species from tropical rainforest from North Kalimantan to promote its use for the wood industry in Indonesia         | Sari Delviana Marbun, Imam Wahyudi   | 240 |
| <b>BO-31</b> | Distribution model of poisonous plants as conservation of biopesticides sources in Batang Gadis National Park, Mandailing Natal, North Sumatra, Indonesia | Yunus Afifuddin, Pindi Patana, Junaidi Rangkuti, Putri Pulungan, Syalfiani Lubis       | 240 |
| <b>BO-32</b> | Population of bacteria in the tailings of ex-gold mine that beneficial to enhancing plant growth  | Wiwik Ekyastuti, Tri Rima Setyawati  | 241 |
| <b>BO-33</b> | Diversity of bivalves in Tanjung Balai Waters, Asahan, North Sumatra, Indonesia   | Ipanna Enggar Susetya, Desrita   | 241 |
| <b>BO-34</b> | Seed germination of buni ( <i>Antidesma bunius</i> )  | Novita Anggraini, Nurliana   | 241 |
| <b>BO-35</b> | Diversity of degraded peatland vegetation after land fire   | Hanna Artuti Ekamawanti, Hesti Lestari Tata, Dwi Astiani, Wiwik Ekyastuti              | 242 |
| <b>BO-36</b> | Identification of pollinator insects on coffee plants ( <i>Coffea arabica</i> ) using DNA barcoding in North Sumatra, Indonesia                           | Aida Fitriani Sitompul, Elida Hafni Siregar, Dewi Imelda Roesma, Dahelmi, Eko Prasetya | 242 |
| <b>BO-37</b> | The diversity of termites on palm oil plantations and peat swamp forests  | Darma Bakti  | 242 |
| <b>BO-38</b> | Resistance mechanisms of white jabon seedlings ( <i>Anthocephalus cadamba</i> ) against <i>Botryodiplodia theobromae</i> attack causing dieback disease   | Lola Adres Yanti, Achmad, Nurul Khumaida   | 243 |
| <b>BO-39</b> | The growth of <i>Rhizophora mucronata</i> to various intensity of shading   | Lola Adres Yanti, Yunasfi, Nelly Anna  | 243 |
| <b>BO-40</b> | The diversity of sea cucumbers (Holothuroidea) and its potential in East Kelor Island, Kepulauan Seribu Marine National Park, Jakarta, Indonesia          | Gautama Wisnubudi, Tatang Mitra Setia  | 243 |
| <b>BO-41</b> | Birds observed during the monitoring period of 2013-2017 in the reclamation area of ex-coal mining in South Kalimantan, Indonesia                         | Mochamad Arief Soendjoto, Maulana Khalid Riefani, Didik Triwibowo, Dewi Metasari       | 244 |

|              |  |  |     |
|--------------|--|--|-----|
| <b>BO-42</b> | Viability and environment effect to conidial germination of antagonistic fungi that potential as biological control of <i>Colletotrichum gloeosporoides</i> caused antracnose disease on chili | Nurbailis, Martinius, Verry Azniza   | 244 |
| <b>BO-43</b> | Taxonomy and biogeography of Genus <i>Longipeditermes</i> Holmgren (Termitidae; Nasutitermitinae) in Indonesia   | Syaukani Syaukani, Djufri Djufri, Muhammad Bahi, Samingan Samingan, Muhammad Ali                       | 244 |
| <b>BO-44</b> | Biosystematics and nesting sites of <i>Bulbitermes constrictus</i> (Termitidae: Nasutitermitinae) from Sumatra, Indonesia  | Syaukani Syaukani, Jauharlina Jauharlina, Siti Rusdiana, Husni Husni, Alfizar Alfizar                  | 245 |
| <b>BO-45</b> | A record of <i>Dicuspitermes kistneri</i> (Termitinae, Termitidae, Isoptera) from Sumatra, Indonesia   | Samsul Muararif, Syaukani Syaukani, Samadi Samadi, Jauharlina Jauharlina                               | 245 |
| <b>BO-46</b> | Tropical peatland tree species distribution along peat depth gradients in a West Kalimantan Peatland Forest, Indonesia   | Dwi Astiani, Burhanuddin, Abdurrani Muin, Hanna Artuti Ekamawanti, Wiwik Ekyastuti                     | 245 |
| <b>BO-47</b> | The diversity of terrestrial orchid in Limited Production Forests of Sihombu Village, Humbang Hasundutan District, North Sumatra, Indonesia  | Riswan, Irawati Azhar, Intan Debora Sihombing  | 246 |
| <b>BO-48</b> | The potency and utilization of non-timber forest product by communities around the Industrial Forest Plantation of North Sumatra, Indonesia  | Irawati Azhar, Riswan, Mangasi Sianipar, Simon H. Sidabukke  | 246 |
| <b>BO-49</b> | Identification the type of medicinal plant is used as the material for making Karo Oil   | Irawati Azhar, Arif Nuryawan, Irma Sari Amaros Siregar   | 246 |
| <b>BO-50</b> | Pandanaceae diversity in Java, Indonesia   | Sri Endarti Rahayu, Alex Hartana, Tatik Chikmawati, Kuswata Kartawinata, Ernawati Sinaga, Noverita     | 247 |
| <b>BO-51</b> | Survival rate and foraging sites of wild stingless bee (Apidae: Meliponini) colonies reared around crop garden and palm oil plantation   | Syarifuddin, Jasmi Jambak, Elida Hafni Siregar   | 247 |
| <b>BO-52</b> | Diversity species and chemicals elements liquid culture fermentor bacteria in make up organic fertilizers and liquid skin medicine herbal with medical ecological approach                     | Abdul Razak, Vauzia, Dwi Hilda Putri   | 247 |
| <b>BO-53</b> | Diversity chemicals compound of body bilih fish ( <i>Mystacoleucus padangensis</i> ) in Lake Toba and Lake Singkarak, Sumatra, Indonesia   | Abdul Razak  | 248 |
| <b>BO-54</b> | Fish diversity in Fish Ladder of Perjaya Weir in Komering River, South Sumatra, Indonesia  | Muhammad Nizar, Mohammad Mukhlis Kamal, Satyanto Krido Saptomo   | 248 |
| <b>BO-55</b> | Occurrence and cluster analysis of polyisoprenoid in generative tissues of fourteen mangroves  | Mohammad Basyuni, Wahyuni Pulungan, Sumardi, Poppy Anjelisa Zaitun Hasibuan, Arif Nuryawan, Ridha Wati | 248 |
| <b>BO-56</b> | Diversity, occurrence, and cluster analysis of polyisoprenoid in palm oil ( <i>Elaeis guineensis</i> ) leaves under different land-use   | Mohammad Basyuni, Ridha Wati, Irma Deni, Ananda Ratu Tia, Bejo Slamet, Etti Sartina Siregar            | 249 |

|                               |   |   |     |
|-------------------------------|---|---|-----|
| <b>BP-01</b>                  | Environmental factors that affect the biodiversity and color of starfish in Menjangan Besar Island, Karimunjawa, Indonesia                | Suryanti, Churun Ain, Hadi Endrawati, Nurul Latifah   | 249 |
| <b>Diversity of Ecosystem</b> |   |   |     |
| <b>CO-01</b>                  | Mangrove as a habitat for aquatic organism: Case study in Jaring Halus Village, North Sumatra, Indonesia                                  | Ahmad Muhtadi, Hesty Wahyuningsih, Rusdi Leidonald, Diandra Putri, Raswin Nasution, Icha A. Ritonga | 250 |
| <b>CO-02</b>                  | Forest degradation monitoring using Landsat Sattelite Imagery in Besitang Forest Landscape, North Sumatra, Indonesia                      | Nurdin Sulistiyono, Pindi Patana, Arida Susilowati, Nifroldy Tomy Ym, Khairil Amri                  | 250 |
| <b>CO-03</b>                  | Plant phenological observation in Indonesia   | Anggun Ratna Gumilang   | 250 |
| <b>CO-04</b>                  | The effect of organic and urea fertilizer on the growth, yield, quality of sweet corn and soil microbial properties                       | Darwin H. Pangaribuan, Kus. Hendarto, Sheilla R Elzhivago, Ade Yulistiani                           | 250 |
| <b>CO-05</b>                  | Testing of Salak Padangsidempuan as conservation crop with rain interception and sediment trap at West Angkola, South Tapanuli, Indonesia | Yusriani Nasution, Azwar Rasyidin, Yulnafatmawita, Amrizal Saidi                                    | 251 |
| <b>CO-06</b>                  | Maxent modelling for predicting suitable habitat for Genus <i>Bouea</i> in Indonesia  | Tri Harsono, Nursahara Pasaribu, Fitmawati, Sobir, Eko Prasetya                                     | 251 |
| <b>CO-07</b>                  | Assessing on mortality of <i>Rafflesia kerri</i> (Rafflesiaceae) in Kelantan, Peninsular Malaysia   | H. Zulhazman, W.A. Qayyum Nadia, S. Mohamad Fikri, M.Y. Siti Munirah                                | 252 |
| <b>CO-08</b>                  | Potential of coral reef as ecotourism in Unggeh Island, Central Tapanuli District, Indonesia  | Zulham Apandy Harahap, Ipanna Enggar Susetya  | 252 |
| <b>CO-09</b>                  | Total Economic Value of Arboretum Sylva, Tanjungpura University, West Kalimantan, Indonesia   | Emi Roslinda, Ali Munir, Afthony Ardiansyah, Aldy Haryono   | 252 |
| <b>CO-10</b>                  | Coral bleaching phenomena at Belitung Island Waters, Bangka Belitung Islands, Indonesia   | Supriharyono, Pujiono W.P., Nurul Latifah   | 253 |
| <b>CO-11</b>                  | Comparison of building and green open area in Medan, North Sumatra, Indonesia   | Budi Utomo, Afifuddin Dalimunthe  | 253 |
| <b>CO-12</b>                  | Mapping diversity of corticolous lichen diversity in Kamojang, Bandung District, West Java, Indonesia                                     | Muhammad Feisal Jatnika, Joko Kusmoro, Iin Supartinah Noer  | 253 |
| <b>CO-13</b>                  | Biodiversity and community dynamics of periphyton in the formation of biofilms on carbon steel 37 surfaces in Saguling Hydro Power        | Keukeu K. Rosada, Sunardi, Dea I. Astuti, Gede Suantika, Pingkan Aditiawaty                         | 253 |
| <b>CO-14</b>                  | In vitro efficacy of encapsulated neem seed extract against armyworm <i>Spodoptera litura</i>   | Elika Joeniarti, Achmadi Susilo   | 254 |

Periphyton referred to as benthic algae with reference to all the microflora associated with the substrate. Periphyton can cause corrosion of the metal either directly by producing free oxygen from photosynthesis process, or indirectly by providing various nutrient compounds and micro-environments for the bacteria that cause corrosion due to mucus produced at the time of colonizing the substrate. Biofilms formed on the surface of metals in natural waters are generally dominated by diatoms belonging to the periphyton group. Thus, the presence of periphyton, along with corrosion-causing bacteria, was also thought to accelerate the process of corrosion of metals in water. In order to analyze biodiversity and the dynamics of the periphyton community in the process of biofilm formation, this research was carried out by immersing carbon steel 37 (CS37) specimens in water flow in Saguling Hydro Power for four months and sampled periodically. On the surface of CS37, there were 20 types of periphyton that were dominated by *Stanieria* sp. and *Phormidium* sp. The existence of both types of periphyton can be due to the high dominance and abundance of both species in the aquatic environment around the observation site. The abundance of *Stanieria* sp. in both the Saguling hydroelectric waters and on CS37 surfaces can be caused by the abundance of available organic nutrients. In addition to microflora, microfauna was also found in the biofilms. The number of types of microfauna were 20 types and dominated by *Centropixys* sp., *Philodina* sp., and *Vorticella* sp. *Centropixys* sp. was found in aquatic environments with eutrophic tropical status. Shannon diversity index of periphyton on CS37 ranged from 0.01 to 0.33 and showed a low species diversity, while the index of microfauna diversity ranged between 0.29 and 1.68 and showed low to medium species diversity. The results of FTIR analysis on biofilms showed the standard characteristics of a biofilm that indicated the presence of hydroxylic acid functional group as one of the cluster-forming carbohydrates and protein  $\beta$ -sheet which was a constituent group of the polypeptide. In the process of biofilm formation at Saguling hydropower, sulfate reduced bacteria as anaerobic bacteria and the main bacterial group causing microbial corrosion was detected on CS37 surface on the second day. This indicated that the biofilms with the oxygen gradient in it have formed.

Biofilm, carbon steel 37, community dynamics, periphyton, Saguling hydropower

## CO-14

### In vitro efficacy of encapsulated neem seed extract against armyworm *Spodoptera litura*

Elika Joeniarti<sup>✉</sup>, Achmadi Susilo

Department of Agrotechnology, Faculty of Agriculture, Universitas Wijaya Kusuma Surabaya. Jl. Dukuh Kupang 25/54 Surabaya 60225, East Java, Indonesia, <sup>✉</sup>email: elika\_joe@yahoo.co.id

A new technology to improve quality and performance of botanical insecticide is needed urgently. Nanoencapsulation

is a method to coat plants active substances by the polymer wall layer so that it produces nanoparticles. To examine effectiveness of this technique, we evaluated efficacy of encapsulated neem seed extract towards antifeedant activity and larvae mortality of armyworm *Spodoptera litura* in a laboratory. The research was conducted in several steps, i.e., rearing armyworm in laboratory, extraction of neem seed, encapsulation of neem seed extract, and efficacy test the encapsulated neem seed extract against the mortality of armyworm in laboratory. The result showed that the encapsulated neem seed extract 30% exhibited the highest antifeedant activity to *S. litura*, while 10% concentration of this botanical insecticide inflicted 64.75% larvae mortality.

Antifeedant, mortality, nanoparticles, neem seed, *Spodoptera litura*

## CP-01

### Selected fruit and seed morphological diversity of Gede-Pangrango Mountain Plants, West Java, Indonesia

Anggun Ratna Gumilang<sup>1,✉</sup>, Dian Latifah<sup>2</sup>

<sup>1</sup>Cibodas Botanical Garden. Jl. Kebun Raya Cibodas, Sindanglaya PO Box 19 SDL Sindanglaya, Cipanas, Cianjur 43253, West Java, Indonesia. Tel./fax.: +62-263-512233, <sup>✉</sup>email: anggunratna@gmail.com

<sup>2</sup>Centre for Plant Conservation, Bogor Botanical Garden. Jl. Ir. H. Juanda No. 13, Bogor 16003, West Java, Indonesia

Twenty-three seed species were collected during a trip to the Gede Pangrango National Park, West Java, Indonesia on 22-30 May 2016. These species belong to 13 families whereas the most collected are species of Rubiaceae and Araceae. Three sites were visited, i.e., Cibodas, Pancawati and Selabintana Resort and transect sampling was applied. This expedition is part of the Center of Plant Conservation's Seed Bank Project to complete its collections. Further expeditions and research will be conducted according to Millennium Seed Bank Kew.

Collection, fruit, seed, seed bank, plant conservation

## CP-02

### Suitability coral reef condition for snorkelling at Belitung Island Waters, Bangka Belitung Islands, Indonesia

Supriharyono<sup>✉</sup>, Suryanti, Wiwiet Teguh Taufani

Department of Aquatic Resources, Faculty of Fisheries and Marine Sciences, Universitas Diponegoro. Jl. Prof. H. Soedarto, S.H., Tembalang, Semarang 50275, Central Java, Indonesia. Tel.: +62-24-7474698, Fax. +62-24-7474698, <sup>✉</sup>email: anggunratna@gmail.com

Coral reefs condition had been studied in small islands, surrounding Belitung Island's waters, Indonesia, i.e., Lengkuas Island, Burung Island, and Kepayang Island. This study aims to analyze coral condition at those islands,