

KERATAN AKHBAR-AKHBAR TEMPATAN
TARIKH: 31 MEI 2017 (RABU)

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KERATAN AKHBAR
BERITA HARIAN (BISNES) : MUKA SURAT B5
TARIKH : 31 MEI 2017 (RABU)

ISU@CYBER

Serangan Ransomware masih terkawal

➔ Pengguna perlu lebih waspada layari internet elak virus merebak



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Serangan siber virus Ransomware WannaCry yang dikatakan sudah melumpuhkan rangkaian komputer hampir 150 negara di seluruh dunia amat membimbangkan dan pengguna di Malaysia juga tidak terkecuali daripada menerima kesannya.

Namun, ia bukan sebab bagi pengguna untuk panik dan mempercayai mesej diviralkan seperti serangan Ransomware yang dikatakan bakal menyebabkan mesin juruwang automatik (ATM) seluruh negara akan ditutup selama dua hingga tiga hari baru-baru ini.

Penyebaran mesej seumpama itu sebenarnya boleh mendedahkan panik walaupun hakikat sebenarnya serangan Ransomware WannaCry di negara ini masih terkawal seperti ditegaskan Menteri Sains, Teknologi dan Inovasi, Datuk Seri Madius Tangau.

Pengguna sebaliknya perlu memainkan peranan dengan lebih berwaspada setiap kali melayari laman sesawang terutama ketika menekan sebarang pautan di media sosial, termasuk imej dan video di WhatsApp, Facebook, Instagram, Twitter atau aplikasi lain.

Organisasi atau pentadbir sistem

juga perlu berwaspada serta bertindak melindungi, selain menjamin keselamatan infrastruktur rangkaian komputer mereka kerana serangan itu berpunca daripada kealpaan pengguna internet sendiri.

Secara umum, virus Ransomware WannaCry kini wujud dalam pelbagai nama serta varian antaranya termasuk Crytlocker, Crytowell, CBT Locker, Teslacrypt dan Locky.

Ia berlaku apabila pengguna menerima e-mel yang ada lampiran mengandungi malware dan apabila pengguna menekan pautan berkenaan malware ini akan masuk seterusnya menjajaskan sistem komputer.

Serangan virus itu boleh 'berjangkit' kepada komputer lain, seterusnya merebak kepada satu jabatan atau agensi berkenaan berbanding dahulu yang mana hanya satu komputer akan terjejas.

Malah, Fortinet iaitu pemimpin global dalam penyelesaian keselamatan siber berprestasi tinggi menasihatkan organisasi di Malaysia mengambil langkah segera melindungi daripada Ransomware yang merebak.

Pengarah Penyelidikan Keselamatan di Fortinet, David Maciejak, berkata Fortinet FortiGuard Labs memantau serta menganalisis telemetri ancaman dikumpulkan daripada lebih dua juta sensor di selu-

ruh dunia mendapati WannaCry dan variannya adalah Ransomware yang merebak dengan mudah.

Katanya, ia juga dikenali dengan beberapa nama termasuk WCry, WannaCry, WanaCrypt0r, WannaCrypt dan Wana Decrypt0r yang merebak melalui eksploitasi NSA dipanggil ETERNALBLUE yang dibocorkan atas talian pada April lalu oleh sekumpulan penggodam yang dikenali sebagai 'The Shadow Brokers'.

Eksplotasi kelemahan

ETERNALBLUE mengeksploitasi kelemahan dalam protokol Microsoft Server Message Block 1.0 (SMBv1).

"WannaCry mencerooboh beribu-ribu organisasi di seluruh dunia, termasuk banyak institusi utama dan ia terkenal dengan permintaan tuntutan wang tebusan yang menyokong lebih daripada dua-dozen bahasa," katanya yang turut menjelaskan secara purata lebih 4,000 serangan virus itu berlaku setiap hari sejak 1 Januari 2016.

Bagi organisasi sudah terjejas dengan Ransomware, Fortinet menasihatkannya mengambil beberapa langkah iaitu mengasingkan peranti dijangkiti secepat mungkin bagi mengelakkan ia merebak ke rangkaian atau pemacu berkongsi, cabut semua peranti bersambung jika rangkaian dijangkiti dan mati-

kan peranti terjejas yang belum diceroboh.

Selain itu, mereka juga perlu menyimpan data sandaran di luar talian sert mengimbangnya untuk memastikan ia bebas daripada malware dan menghubungi pihak berkuasa bagi melaporkan aktiviti ransomware.

Bagi organisasi atau pengguna belum terjejas, Fortinet mencadangkan beberapa langkah pencegahan iaitu mewujudkan rutin biasa untuk menampal sistem operasi, perisian dan firmware pada semua peranti manakala bagi organisasi lebih besar mempunyai jumlah peranti tinggi mereka boleh mempertimbangkan penggunaan sistem pengurusan tampalan berpusat.

Gunakan teknologi IPS, AV, dan Web Filtering yang dikemaskini, melakukan data sandaran secara kerap dan imbas semua e-mel yang masuk serta keluar untuk mengesan ancaman dan tapis 'executable files' daripada sampai kepada pengguna.

Jadualkan program anti-virus dan anti-malware untuk menjalankan imbasan yang kerap secara automatik, matikan skrip makro dalam fail dihintar melalui e-mel dan menubuhkan satu strategi tindak balas kesinambungan perniagaan dan kejadian serta jalankan penilaian kelemahan secara kerap.

**KERATAN AKHBAR
BORNEO POST
TARIKH: 31 MEI 2017 (RABU)**



TANGAU WANTS LANDOWNERS TO BE COMPENSATED

May 30, 2017, Tuesday

TUARAN: Science, Technology and Innovation Minister Datuk Seri Wilfred Madius Tangau urged government implementing agencies dealing with land acquisition compensation payment to buck up their delivery service.

Tangau said he was disappointed when finding out many landowners whose land have been acquired for the road upgrade project from Kampung Kapa to Kampung Bundu Tohuri here have not been compensated.

The project had been completed several years back but he was surprised when several villagers came up to him to raise their complaints about the compensation.

“They came up to me during my visit to several villages over the weekend and after engaging and listening to the kampung folk, especially those from Kapa until Bundu Tohuri, I want the authorities concerned to resolve the problem.

“I checked with the Tuaran district office and found that all procedures have been adhered to but after more than five years, the landowners still have not received their payment,” he said.

“I am beginning to understand why the people are reluctant to cooperate whenever the government wants to acquire land ... it is because of the delay in payment of compensation,” said Tangau who is Tuaran member of parliament.

Towards this end, he said it was imperative for the relevant authorities to discharge its duty more efficiently so that all the government development programmes could be implemented smoothly.

“I am very concern about this particularly after listening to my constituents’ unhappiness on the way the issue is being handled by government implementing agencies for the road upgrading project,” he said.

Tangau had been on a whirlwind programme inside his constituency last weekend beginning with the working visit by Education Minister Datuk Seri Mahdzir Khalid to Mengkabong, Nabalu and Lokos on Friday.

The visit by Mahdzir was initiated by Tangau as part of his efforts to resolve the long-standing problem of constructing SMK Nabalu, which included securing a new site adjacent to SK Giok.

On Saturday, he was back at Nabalu to officiate the Mukim Nabalu Kaamatan celebration while on Sunday he was the guest-of-honour in the Kiulu and Tuaran parishes in St Joseph Tombongon and St Patrick Bundu Tohuri, respectively.

<http://www.theborneopost.com/2017/05/30/tangau-wants-landowners-to-be-compensated/>

**KERATAN AKHBAR
BORNEO POST
TARIKH: 31 MEI 2017 (RABU)**

BORNEO POST *online*
THE LARGEST ENGLISH NEWS SITE IN BORNEO

UNIMAS READY TO MARKET ITEX – WINNING INVENTIONS

May 30, 2017, Tuesday



KUCHING: The Universiti Malaysia Sarawak (Unimas) is now ready to speak to industry partners about bringing their inventions to the market, following its feat of bringing home one gold and nine silver medals from the 28th International Invention, Innovation and Technology Exhibition (ITEX) 2017.

Unimas vice-chancellor Prof Dato Mohamad Kadim Suaidi said the university stood out among 560 other participants whose inventions were on display at ITEX 2017, which took place at Kuala Lumpur Convention Centre from May 11 to 13.

"I would like to assure all that both research and innovation are relevant to the country's needs. All our 10 products here can be commercialised. We are actively seeking industry partners to bring them to the market," he told reporters during a press conference held at the University House on

Campus yesterday, where Unimas deputy vice-chancellor (research and innovation) Prof Kopli Bujang, deputy vice-chancellor (academic and international) Prof Wan Hashim Wan Ibrahim, and Unimas Innovations director Prof Lo May Chiun.

Unimas showcased a total of 10 inventions across various research fields – all of which picked up medals.

The gold medal winner was Dr Lau Sei Ping's 'Solar-Powered Adaptive Street Lighting with Energy-Neutral and Predictive Behaviour'. It is designed with the capability to maintain the functions of street lighting even with a limited energy budget.

It also allows smaller solar-powered streetlight system to be used, making it more affordable for rural settings.

The silver medallists were the 'Night-Cooled Water for Radiant Modular Radiant Cooling Prototype in Malaysian Buildings' – an innovation led by Assoc Prof Dr Azhaili Baharun; the 'Culture of Alien Freshwater Lobster (*Cherax quadricarinatus*) in Malaysia' led by Assoc Prof Dr Khairul Adha A Rahim; and 'Production of Bacteriocin from Sago Starch in Continuous Mode' led by Assoc Prof Dr Cirilo Nolasco Hipolito.

Associate Professor Dr Even Lau oversaw the 'Impact of Carbon Dioxide (CO₂), Hydroelectricity Consumption on Growth in Malaysia'; Dr Mohamad Nazim Jamli on 'Effective Selection of Next Hop Node Based on Mobility Prediction for Habitat Monitoring in MASNets'; Dr Jacey Lynn Minoi on 'ProColony: Automatic Colony Counting On-the-Go'; Dr Tan Cheng Siang on 'Accelerating Antimicrobial Susceptibility Test via Mobile Apps (m-AST)'; Dr Stephanie Chua Hui Li on 'Localisation of Scratch Programming Environment in Raspberry Pi'; and Chuah Kee Man and Radina Mohamad Deli on 'LexiVibe: Virtual Reality-based Vocabulary Learning Environment for Visually-Impaired Children'.

ITEX 2017 was run by the Malaysian Invention and Design Society (MINDS) and supported by the **Ministry of Science, Technology and Innovation**, Ministry of Higher Education, and also Ministry of Education.

It attracts creations from major inventors and innovators, academics, research institutions and young entrepreneurs, as well as students from primary and secondary schools – all of whom share a common goal that invention is the primary source that propels the world's technology and new orders of wealth creation.

This outstanding achievement has given Unimas researchers more encouragement and motivation to be diligent in the research and innovation ecosystem.

<http://www.theborneopost.com/2017/05/30/unimas-ready-to-market-itex-winning-inventions/>

KERATAN AKHBAR
NEW STRAITS TIMES (HIGHER ED) : MUKA SURAT 6 & 7
TARIKH : 31 MEI 2017 (RABU)

6

NEW STRAITS TIMES
HIGHER ED

WEDNESDAY

COVER STORY

Call of the Antarctica

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BASED on the World Meteorological Organisation annual report in 2015, the occurrence of droughts, heat waves, floods and tropical storms two years ago were caused by the change in global climate. These phenomena have resulted in the loss of human and animal lives as well as destruction of property.

The report also showed an increase in atmospheric and sea temperatures, sea levels and greenhouse gases as well as extreme weather conditions.

Although there was an increase of only a 2°C in the Earth's temperature between 1950 and 2000, it was enough to adversely impact the Arctic area surrounding the North Pole and Antarctica surrounding the South Pole.

Therefore, understanding and predicting how climate will change over the next century is of vital importance to both the economy and society.

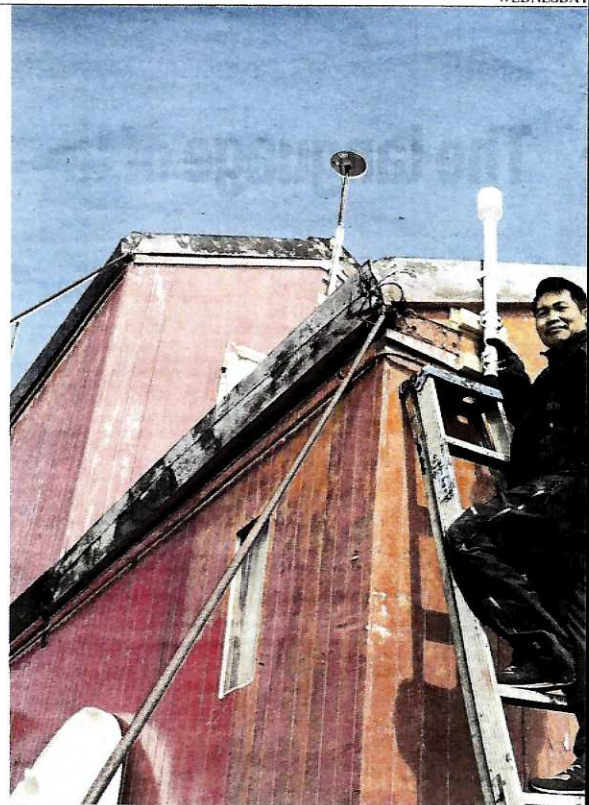
Scientists know that climate varies naturally on many time scales and that people are affecting climate, particularly through emissions of greenhouse gases.

According to scientific research by foreign scientists, Malaysia has a tropical rainforest climate which is the main gateway for reactive gases to get into the atmospheric layer.

This will subsequently contribute to the rise of temperature in Europe, Asia and even the Antarctica.

We have been doing research in the Antarctica for years and our findings are comparable or on par with those by international scientists.

WAYAN SUPARTA
 ANGKASA researcher



Wayan Suparta installing lightning sensors.



Mohd Shahrul Mohd Nadzir getting up close and personal with Antarctica penguins.

The greenhouse gases released into the troposphere and stratosphere will affect the ozone layer leading to global warming. Hence, the importance of climate change study.

Universiti Kebangsaan Malaysia's Space Science Centre (ANGKASA) head Professor Dr Mardina Abdullah said it is important for researchers and scientists to go on more scientific expeditions especially in the Antarctica for many reasons. One of them is the space weather effect which is almost similar over the equatorial and polar regions.

Atmospheric irregularities over these regions will disturb radio signals such as GPS signals. This occurs especially during night time over the polar and equatorial areas. This error should be mitigated as recently many flights (that use GPS for navigation) traveled over the polar region, for example, the North Pole," she said.

Another reason why the Antarctica is important is because of the global effects on sea water. Sea levels are rising and global weather patterns are all determined from the Antarctica.

This region is experiencing the fastest degree of increase in environmental temperature, and studying these effects will provide a greater understanding of how microbial ecosystems will be affected in the not too distant future.

ANGKASA fellow researcher Associate Professor Dr Wayan Suparta said many discoveries in Antarctica, especially research on climate change that correlates with the weather and climate in Malaysia, have been made by Malaysian scientists.

"That alone answers the question why we do research in Antarctica. If there are no correlations between Malaysia and the Antarctica, what is the



Wayan Suparta explaining the outcome of his research expedition to Carlini Base of the Antarctica to Argentine ambassador to Malaysia Manuel Jose Balaguer Salas.



point of researching those areas?" he asked.

OPEN LABORATORY

Researchers from around the world travel to the Antarctica to study the effects of global climate change. Situated in the southern hemisphere, the continent is regarded as an open laboratory to all.

The Antarctica is the coldest, driest and windiest continent in the world and 98 per cent covered in ice that can go as cold as -89°C.

If all the ice blocks there were to melt, it is believed that the world's sea water level would rise about 70 metres.

UKM deputy vice-chancellor research and innovation Professor Dr Mohd Ekhwan Toriman said that the Antarctica is a privileged position and unique laboratory for the sciences, which provides boundary conditions for understanding changes in ocean circulation flow to the space phenomena that can affect communications systems.

"Climate change is the most daunting collective challenge that humanity has ever faced. The Antarctica is still a mystery. Many events occur suddenly and cannot be explained scientifically, such as why the collapse of a glacier causes a cloudy atmosphere."

"Our climate is the engine for life support systems that sustain and nurture us all. How do we deal with global climate change? Will limiting carbon technologies and industries, and intelligent practices reduce global warming emissions?"

Mohd Ekhwan believes the Malaysian Antarctic Research Programme (MARP), run by the National

Antarctic Research Centre (NARC), can help to formulate a strategic plan to best address the issues of climate change.

The programme is also capable of explaining the benefits of doing research in the Antarctica to support the needs of the country and provide a strong motivation to the people in building scientific capacity.

Nearly 5,000 researchers from all over the world go to the Antarctica every year to explore the mysteries of the continent.

Malaysia has been an active member for research in the Antarctica under the Sultan Mizan Antarctic Research Foundation (YAPASM), MARP and public universities such as UKM and Universiti Teknologi MARA.

During the Eighth Malaysia Plan, 36 Malaysian scientists were sent for 18 scientific expeditions to the Antarctica.

ANGKASA, under the Institute of Climate Change at UKM, has been actively involved in the research expeditions to the Antarctica and Arctic.

Three scientists conducted research in the Antarctica under MARP, YAPASM and UKM research grants.

There are Wayan Suparta (2003, 2008, 2009 and 2017) under MARP, Professor Dr Norbahi Misran (2007) under MARP and Dr Mohd Shahrul Mohd Nadzir (2016) under YAPASM.

In addition to the Antarctica, Mardina and Wayan conducted polar research in the Arctic, Iceland (64 degrees North) in 2008 and 2013 under a UKM research grant.



Mohd Ekhwan Toriman

EXPEDITIONS TO THE ANTARCTICA

ASSOCIATE PROFESSOR DR WAYAN SUPARTA

Year: 2003, 2008, 2009 and 2017
Organisation: Malaysia Antarctica Research Programme

PROFESSOR DR NORBAHIAH MISRAN

Year: 2007
Organisation: Malaysia Antarctica Research Programme

DR MOHD SHAHRUL MOHD NADZIR

Year: 2016
Organisation: Sultan Mizan Antarctic Research Foundation

EXPEDITION TO THE ARCTIC

PROFESSOR DR MARDINA ABDULLAH AND ASSOCIATE PROFESSOR DR WAYAN SUPARTA

Year: 2008 and 2013
Organisation: Universiti Kebangsaan Malaysia



Wayan successfully carried out his scientific expedition to Carlini Base, the Antarctica from Jan 12 to March 5 this year.

"I installed space meteorology sensors with the purpose of studying the coupling process between the upper and lower levels of the atmosphere through thunderstorm activity."

"During the expedition, lightning strikes were detected above the Earth's surface."

"Lightning has been detected for the first time in the Antarctic Peninsula which refutes the classic hypothesis that there is no such thing there."

"I was there for 1½ months during summer (December, January and February) with an average temperature of -5°C. I had the most memorable experiences while conducting research there, and I almost got killed by skuas (seabirds) but I managed to duck my head into the ice."

"Due to bad weather, I also slipped and fell off a roof while installing a meteorology sensor. But today I am standing tall, full of hope and energy to continue my research," he said.

Wayan held a talk on the Scientific Antarctic Expedition at The Summer Campaign 2016/2017 organised by the Institute of Climate Change in UKM recently.

The expedition was supported by the Dirección del Antártico Argentino — Instituto Antártico Argentino, NARC through the Ministry of Science, Technology and Innovation Malaysia.

The Ministry through NARC, has funded RM1 million for Wayan to conduct research in the Antarctica.

The purpose of the Antarctica expedition is to develop science and nation-building. We have been doing research in the Antarctica for years and our findings are comparable or on par with those by international scientists. Research can be done with support from the government and sustainable funding."

Since 2003, Wayan has been conducting research in Antarctica to collect data and reset the GPS equipment to improve the quality of data, assist the maintenance of an automatic weather system, and identify All Sky Camera site position for installation.

His first research station was at Scott Base Antarctica in October 2002 and later in the Arctic in 2008 where he installed a GPS antenna and meteorological sensors in Iceland.

Wayan has been an associate professor at ANGKASA since April 2012. Prior to this, he was a senior lecturer (July 2008 - March 2012) and post-doctoral fellow (2007-2008).

His research interests include GPS Meteorology applications, aerospace sciences, communications, remote sensing, Artificial Neural Network applications and space meteorology.

ANGKASA researcher Dr Mohd Shahrul Mohd Nadzir went to the Antarctica last year to study how greenhouses gases affect global climate due to their ozone-thinning effects.

He uses the portable Gas Chromatograph to obtain samples of greenhouse gases released in the

Antarctica to be compared with those released in Malaysia.

"The joint research between UKM and the University of Cambridge, United Kingdom saw the use of the Gas Chromatograph, specially designed by Dr Andrew Robinson of Cambridge, in greenhouse gases research in Malaysia since 2006."

The machine was placed in five locations — Kelantan, Sabah, Taiwan, Australia and New Zealand.

Mohd Shahrul, 33, said Arctic ozone holes found in 1972 made the polar region one of the most important locations for the study of the atmosphere's ozone layers.

"The thinning ozone causes ultraviolet rays to penetrate through to Earth and melt the ice in the Antarctica, eventually leading to a rise in sea levels."

"If radical climate change continues to take place for the next 10 to 20 years, the Maldives may be submerged."

This is due to several factors such as the monsoon winds and the year-long hot and humid weather which causes the convection process of active gases to quickly reach the atmosphere, said Mohd Shahrul, who is also head of the Tropical Climate Change System Centre at the Institute of Climate Change.

FUTURE OF ANTARCTIC RESEARCH

Wayan said, "For research to thrive in the Antarctica, we must have a policy which includes a yearly budget and an act of parliament."

"Malaysia also contributes to global warming and studies need to be done to minimise the effect."

"I believe in the next 50 years, the Antarctica will be occupied by human beings as it has minerals, oil, stone and, of course, water."

Five years down the road, Mardina hopes that ANGKASA will be a Higher Institutions' Centre of Excellence referred to by local and international researchers.

Advances in space science and technology are important to be a developed country. We also want more research collaborations and networking for emerging research in space science and technology, and continue frontier research for humankind, in line with UKM's Guardian of the Nation spirit.

"Perhaps, in another 10 years, we will be the National Research Centre," she added.

"We also hope for continuous funding to maintain equipment at the Antarctica (Scott Base) and Iceland because we have no budget for repairs."

"Most younger local researchers do not want to research space science, especially over the polar region. It is quite difficult to establish a network with international collaborators to gain their confidence," she said, adding that the country is far behind Indonesia and India in terms of polar research.

ANGKASA hopes to continue its collaboration on Iceland research with the Science Institute University of Iceland and National Institute of Polar Research, Japan.

KERATAN AKHBAR
UTUSAN MALAYSIA (MEGA HITS) : MUKA SURAT 30
TARIKH: 31 MEI 2017 (RABU)

30 **Mega Hits** f mega sains dan teknologi

UTUSAN MALAYSIA - RABU 31 MEI 2017

DRWAYAN
SUPARTA
KELOMPOK
penyelidikan
Antartika

Mantapkan skim penyelidikan Antartika

MALAYSIA telah terlibat dalam penyelidikan Antartika sejak 1999. Kajian berkenaan dengan kutub khususnya Antartika, Lautan Selatan dan perannya dengan bumi serta kaitannya dengan angkasa, hari ini semakin bertambah penting berikutan perubahan iklim mendadak yang dialami dunia.

Benua Antartika yang sebahagian besarnya dilutui ais adalah sebuah komponen utama dalam sistem iklim global. Antartika kebelakangan ini telah mengalami perubahan yang amat drastik. Ini disebabkan benua ini telah dibuka untuk aktiviti pelancongan selain tujuan asasnya untuk kajian saintifik (menjadikannya sebuah makmal yang kaya bagi penyelidikan), dan juga pihak yang berkepentingan dengan kedudukan Antartika yang amat strategik ini pada masa hadapan.

Hasil penyelidikan Antartika telah dijalankan oleh saintis Malaysia telah dirasai faedahnya oleh negara, terutama universiti melibatkan penyelidikannya terlibat secara langsung dalam Program Antartika Kebangsaan.

Berikutan itu, Malaysia juga telah berjaya membina kepakaran saintis tempatan setanding dengan kepakaran penyelidikan antarabangsa. Di samping itu, Malaysia telah diberi penghormatan oleh Jawatankuasa Saintifik Penyelidikan Antartika (SCAR) untuk menjadi tuan rumah

temasya dwitahunan itu di Kuala Lumpur tahun lepas, dan dalam masa yang sama, mengiktiraf pencapaian saintifik dan komitmen Malaysia ke Antartika, sekali gus memberi pengiktirafan komuniti saintifik antarabangsa. Program Penyelidikan Antartika Kebangsaan sebenarnya telah pun mencapai puncak kecemerlangan dalam projek Rancangan Malaysia Kelapan (RMK-8).

Sebelum penghormatan di atas, Malaysia telah berjaya

menyertai Sistem Tritis Antartika (ATS) pada 31 Oktober 2011, yang membolehkan Malaysia mengambil bahagian dalam proses tadbir urus Antartika serta menggiatkan kerjasama saintifik dan kerjasama dengan pihak lain. ATS memberi peluang yang besar kepada Malaysia untuk bertindak, menyuarakan gagasan, dan pelbagai agenda dunia lainnya.

Untuk memenuhi kewajipan Malaysia sebagai ahli ATS dan untuk mengekalkan kelangsungan Penyelidikan Antartika khususnya, usaha besar dan berterusan perlu dilakukan oleh pihak yang berkenaan. Antara usaha untuk melestarikan Penyelidikan Antartika ialah penubuhan Yayasan Penyelidikan Antartika Sultan Mizan (YPASM) pada 18 Julai 2012.

YPASM masih baru dan

terhad dalam meningkatkan dana penyelidikan, dan setakat hari ini, YPASM hanya membenarkan saintis tempatan untuk memohon skim geran penyelidikan yang disediakan dan itu pun terhad pula kepada penyelidik muda. Pada masa akan datang, YPASM diharap berjaya seperti Yayasan Sains Kebangsaan (NSF) Amerika Syarikat dalam menyediakan dana dan kemudahan untuk penyelidikan kutub. Permohonan dana bukan sahaja dibuka untuk saintis tempatan melainkan juga saintis yang terlibat dengan Projek Antartika Kebangsaan yang bekerja di negara ini. Oleh itu, penglibatan swasta ke penyelidikan kutub adalah sangat penting.

Selain memperkasa YPASM bagi melestarikan penyelidikan kutub, satu perkara yang amat penting adalah Malaysia perlu mempunyai dasar yang jelas dan akta ke atas Antartika.

Kewujudan dasar dan akta ini membolehkan kerajaan memikirkan peruntukan tahunan atau lima tahunan bagi



kelangsungan program penyelidikan ini. Peruntukan tahunan ini boleh diurus dan disalurkan oleh kementerian atau agensi yang berkaitan.

Permohonan dana boleh dibuka tanpa mengira saintis tempatan atau antarabangsa yang bekerja dan bermastautin di Malaysia. Dengan adanya dasar dan akta yang dikuatkuasakan oleh kerajaan, maka permohonan dana dan penilaian cadangan pada peringkat kebangsaan atau pada peringkat

universiti akan menjadi pertimbangan utama oleh semua pihak yang terbabit.

Masalah yang timbul hari ini adalah kurangnya penyelarasan iaitu apakah skim geran penyelidikan yang ditawarkan oleh Kementerian Sains, Teknologi dan Inovasi (MOSTI) seperti dana *esience*, atau skim geran Kementerian Pendidikan Tinggi (KPT) seperti Skim Geran Penyelidikan Fundamental (FRGS) boleh dipohon oleh penyelidik yang melakukan kajian di kutub? Ini memandangkan tiada tema penyelidikan kutub dimasukkan ke dalam skim yang ditawarkan. Perkara serupa juga berlaku pada peringkat universiti, seperti Geran Universiti Penyelidikan, apabila komponen penyelidikan kutub tidak dimasukkan secara tegas.



ANTARTIKA merupakan sebuah benua yang kini menjadi tumpuan penyelidik seluruh dunia



KERATAN AKHBAR
KOSMO (INFINITI) : MUKA SURAT 30 & 31
TARIKH : 31 MEI 2017 (RABU)



INFINITI
INOVASI • SAINS • G/

Kosmo! • RABU 31 MEI 2017

Ready
Kosmo di
Kosmo_Online

**Kit
RapidRAW**
Kesan Madu Tiruan

mosti RapidRAW™
(Prototype)

Instructions to use:

1. Use 3 drops of honey sample in provided tube
2. Add 3 drops of R1 and mix vigorously for 10 seconds or until dissolved
3. Add 5 drops of R2 and mix vigorously for 10 seconds
4. Let mixture settled down for 1 minute

Interpretation:
Solid precipitation: Positive for raw honey
No precipitation: Negative for raw honey and sugar mixtures

Warning
Reagent must be kept in cold dry chamber away from heat, fire and other volatile solutions. Avoid direct exposure to sunlight. Reagent is highly flammable and toxic if inhaled or swallowed. Direct exposure to reagents may cause dizziness, headache, dizziness as well as liver or kidney damage. Prolonged direct or repeated exposure may cause severe health effects.

Prevention
Wear protective gloves when using the reagents. Avoid breathing the vapor. Wash hands and other contaminated skin thoroughly with water. DO NOT EAT, DRINK and SMOKE while handling the reagents. Use in a ventilated area. If feeling unwell after direct exposure to reagents, please get medical attention.

Warning
Highly Flammable material

> Lihat muka 30 & 31



SAMPEL yang mempunyai kandungan madu mentah akan membentuk mendapan yang mengandungi unsur bersifat organik.

Lambakan madu palsu, sintetik



AKHBAR Kosmo! pada 15 Ogos 2016 melaporkan sebanyak 80 peratus madu yang dijual di negara ini adalah palsu.

PENYELIDIK mengumpul 122 sampel madu daripada pelbagai lokasi untuk menguji konsistensi keputusan ujian. Gambar hiasan



Keputusan ujian sepantas dua minit

Kit RapidRAW terdiri daripada dua formula reagen yang digunakan untuk menguji perbezaan tindak balas madu asli dan madu tiruan secara saintifik.

TIGA tahun lalu, Ketua Pentadbiran Teknikal dan Operasi Institut Genom Malaysia (MGI), Mohd. Razif Mamat@Daud menjadi pengunjung setia hospital setelah puteri keduanya disahkan menghidap masalah buah pinggang. Sebagai ikhtiar, Mohd. Razif menggunakan madu kelulut sebagai makanan tambahan untuk membantu rawatan Nursyasya Rania yang pada ketika itu baru berusia empat tahun.

Begitupun, banjiriran produk madu tiruan menyebabkan bapa kepada tiga cahaya mata itu berasa tersekit. Beliau bimbang penggunaan madu yang tidak diketahui asal-usulnya akan memburukkan lagi kesihatan anaknya. "Akhir Kosmo! sendiri pernah melaporkan 80 peratus madu yang dijual di pasaran negara ini merupakan madu tiruan. Saya pernah membeli sebotol madu kelulut yang harganya boleh tahan mahal. "Sejak itu, saya mula mendalami ilmu lebah kelulut dan menternaknya di rumah untuk kegunaan sendiri.

"Begitupun, beberapa orang rakan saya turut menghadapi dilema sama, sekali gus mendorong saya untuk memulakan penyelidikan berkaitan madu. "Apatah lagi, MGI sendiri mempunyai fasiliti makmal yang lengkap. Alangkah rugi jika kemudahan itu tidak dimanfaatkan sebaik-baiknya," ujarnya ketika ditemui Kosmo! di Bangi, Selangor baru-baru ini.

MGI merupakan komponen konsortium dalam Institut Nasional Bioteknologi Malaysia (NIBM) sejak 2012. Ia merupakan syarikat jaminan terhad di bawah seliaan Kementerian Sains, Teknologi dan Inovasi (MOSTI).

Hasil kajian yang dilakukan sejak 2015, Mohd. Razif dan rakan penyelidikinya, Dr. Nor Azfa Johari berjaya membangunkan kit

RapidRAW yang dapat menguji dan melihat perbezaan tindak balas madu asli serta madu tiruan secara saintifik.

"Sebelum itu, kami telah mewujudkan pusat pengumpulan spesies lebah kelulut di MGI. Melalui pusat itu, kami telah mengumpul data 90 koloni lebah daripada lebih 30 spesies kelulut sehingga akhirnya tercetus inovasi kit tersebut," tambahnya.

Dua formula

Dalam hal ini, data itu mendedahkan maklumat seperti corak taburan madu dari lokasi berbeza, spesies lebah dan faktor persekitaran yang menyumbang kepada ciri unik madu.

Sementara itu, Nor Azfa berkata, kit tersebut terdiri daripada dua formula reagen yang dinamakan R1 dan R2. Menggunakan prinsip asas biokimia, ia telah direka bagi menunjukkan tindak balas jika dicampurkan dengan madu.

Jelasnya, lima titis R1 akan dicampur dengan tiga titis madu dan digoncang.

Setelah itu, campuran tersebut akan dimasukkan ke dalam R2.

Dalam proses timbal balas kimia, ia akan bertindak terhadap elemen organik di dalam madu seperti karbohidrat dan asid amino.

Seterusnya, sebatian itu akan mengasingkan unsur biologi tersebut dalam bentuk mendapan.

Bagi ujian melibatkan madu tiruan, pembentukan

mendapan tidak akan berlaku kerana ia tidak bersifat organik.

"Buat masa ini, penggunaan kit ini bertujuan untuk membuktikan kehadiran kandungan madu mentah dalam sesuatu sampel. Jika madu mentah dicampur air, ia masih membentuk mendapan tetapi pada kadar yang lebih sedikit.

"Kami berpendapat, kit ini lebih sesuai diaplikasikan untuk ujian lapangan oleh pihak penguat kuasa bagi mengenal pasti peniaga madu yang menjual madu tiruan kerana ia mampu mengeluarkan keputusan sepantas dua minit," tuturnya.

Bercerita lanjut, Nor Azfa berkata, pihaknya turut mengumpul sebanyak 122 sampel madu lebah antaranya dari Merbok, Kedah; Kuala Kangsar, Perak; Jelabu, Negeri Sembilan dan Sungai Jang, Selangor bagi mendapatkan keputusan yang konsisten.

Ia terdiri daripada pelbagai jenis madu seperti madu pokok tualang, madu kampung di samping madu kelulut.

Daripada aspek pH, madu kelulut lebih berasid dengan kadar pH 3.7 hingga 5.7 manakala madu jenis lain berada pada kadar pH serendah 4.5 hingga 5.9.

Selain itu, penyelidik turut membuat sendiri madu menggunakan resipi yang diperolehi daripada pengusaha madu tiruan



NOR AFZA



SET kit yang mengandungi 10 milimeter reagen secara purata dapat menghasilkan 20 reaksi.

selain mendapatkan tip melalui carian internet.

"Adalah mustahil untuk mencipta madu yang menyerupai kandungan dan khasiat madu tulen biarpun rasa dan rupanya adalah sama.

"Dalam hal ini, RapidRAW yang dihasilkan itu merupakan versi kelapan dengan dapatan analisis yang lebih jitu dan tepat," tegasnya.

Beliau berkata, MGI turut mempunyai spektroskopi resonans magnet nukleus (NMR) untuk mengesahkan dapatan kajian itu. Ia beroperasi seperti mesin pengimbas yang akan mengeluarkan profil metabolit sampel madu



FADIRUL

secara terperinci.

"NMR merupakan teknologi yang diimport dari luar negara pada kos mencecah RM7 juta beberapa tahun lalu.

"Ia lebih relevan digunakan untuk analisis dalam makmal. Profil metabolit hasil bacaan NMR terdiri daripada spektrum yang menunjukkan kandungan dalam nukleus sampel madu.

"Begitupun, NMR lebih membantu dalam analisa kandungan madu bagi tujuan profil nutrien dan panduan pemakanan berbanding dengan RapidRAW yang bersifat ujian saringan awal dan mudah diaplikasikan



PENYELIDIK turut menyediakan tatacara dan manual penggunaan RapidRAW yang boleh dikuasai pengguna dengan mudah.

di mana-mana sahaja," ujarnya.

Bagi meningkatkan kesedaran orang ramai, MGI menyediakan khidmat menggunakan kit RapidRAW secara percuma untuk semua jenis sampel madu sama ada dari ladang atau dibeli di pasaran sehingga 31 Ogos depan.

Teruja

Dalam pada itu, Pengasas Bersama Bahoney Trading, Fadirul Fais meluahkan rasa teruja apabila mendapat maklumat mengenai kit itu.

Dia semakin yakin untuk mendapatkan bekalan madu dari luar bagi mengembangkan perniagaan produk berasaskan madu.

"Kami menternak

MOHD. RAZIF menunjukkan demonstrasi penggunaan RapidRAW yang hanya memerlukan tiga titis madu.

sendiri lebah kelulut di Kampung Rinching Hilir, Bangi dengan 110 sarang aktif membekalkan madu secara purata 28 kilogram sebulan sejak 2012.

"Mulai tahun lalu, kami mula mengeluarkan produk yang diperbuat daripada roti lebah dan propolis seperti sabun dan pelembap bibir.

"Permintaan amat menggalakkan tetapi kami masih ragu-ragu mengambil bekalan madu dari pihak luar," katanya yang sanggup membeli kitRAW jika ia dikomersialkan kelak.

Graduan dalam bidang bioteknologi dari Universiti Victoria, Wellington itu berkata, pihaknya pernah menggunakan perkhidmatan NMR yang disediakan MGI, namun kosnya agak tinggi sementelah keputusan analisis hanya dikeluarkan dalam tempoh antara dua hingga tiga minggu.



INFO Kit RapidRAW

- Penyelidikan sejak 2015
- Bersedia untuk dikomersialkan
- Reagen dengan isi padu 10 mililitrer dapat menghasilkan purata 20 reaksi sahaja
- Mengandungi bahan racun berjadual dan perlu digunakan mengikut prosedur
- Hanya memerlukan tiga titis madu untuk ujian
- Kos lebih murah

KERATAN AKHBAR
BERITA HARIAN (WILAYAH) : MUKA SURAT 33
TARIKH : 31 MEI 2017 (RABU)

SIRIM tawar kepakaran bantu PKS

Tingkat penembusan teknologi,
naik taraf perniagaan lebih baik

Oleh Zuraidah Mohamed
zmohamed@bh.com.my

■ Johor Bahru

SIRIM Bhd akan membantu pembangunan 40 usahawan perusahaan kecil dan sederhana (PKS) dalam bidang pembuatan bukan makanan tahun ini merangkumi aspek kualiti, produktiviti dan penjenamaan produk.

Presiden dan Ketua Eksekutif Kumpulan SIRIM, Prof Dr Ahmad Fadzil Mohamad Hani, berkata ia dilaksanakan dengan kerjasama kerajaan Johor menerusi Pusat Pembangunan Keusahawanan.

Tingkat teknologi

"SIRIM diberi mandat oleh kerajaan untuk meningkatkan penembusan teknologi serta menaik taraf perniagaan PKS dan mewujudkan ekosistem yang lebih baik.

"Kami berharap bilangan usahawan ini dapat dipertingkatkan setiap tahun bagi memastikan pembangunan PKS berjalan secara mampan," katanya dalam kenyataan di sini.

Beliau berkata, SIRIM baru-baru ini, mengemukakan program dengan kerjasama industri bagi penawaran pelbagai aplikasi dan perkhidmatan teknologi bagi meningkatkan produktiviti usahawan negeri ini.

Katanya, bertemakan 'Kelestarian Perniagaan di dalam Pasaran yang Mencabar', program itu antaranya menekankan kepada peningkatan produktiviti PKS, sistem pengurusan kualiti, pem-

bungkusan dan reka bentuk inovatif dan sistem pengurusan kualiti.

Disertai wakil persatuan

"Program dianjurkan ini disertai 174 wakil dari persatuan industri dan usahawan pelbagai sektor di Johor termasuk industri minyak dan gas, makanan dan minuman, pembuatan dan pembinaan, elektronik serta industri pemprosesan ayam," katanya.

Katanya, program berkenaan turut mendapat kerjasama SME Corp Malaysia, Pusat Pembangunan Usahawan Johor, Persekutuan Pekilang Malaysia, SME Bank dan Kementerian Perdagangan Antarabangsa

dan Industri (MITI).

Sementara itu, Ahmad Fadzil berkata, SIRIM sudah melaksanakan beberapa projek di Johor Teknologi Solar Termal untuk Industri Pemanasan dalam Industri Pemprosesan Ayam di Ayer Hitam, yang mengaplikasikan teknologi solar termal pada skala industri.

"Selain itu, SIRIM turut bekerjasama dengan Institut Kemahiran Belia Negara Pengerang untuk melatih belia tempatan dalam bidang teknologi kimpalan untuk menyokong permintaan tenaga mahir bagi fasa pembinaan projek Kompleks Petroleum Bersepadu Pengerang," katanya.



FOTO IHSAN SIRIM

Antara 174 peserta daripada pemain industri PKS dari Johor menyertai program SIRIM di Johor Bahru.