



## The Centre for Research in Biotechnology for Agriculture [www.cebar.um.edu.my](http://www.cebar.um.edu.my)

**(CEBAR)** has a mission “to Create A Platform For World Class Research, Development, Applications And Training With Outputs And Products That Interface Between The Fundamental And Applied Sciences And The Nations Needs In Agriculture.”, and aims to qualify as University Malaya Centre of Excellence (UMCoE) in 2013.

In the year 2012, CEBAR researchers produced **71 WoS (ISI) publications** with over 75% of these in tier 1 and 2 ranked journals.

CEBAR members secured over **RM5.8 million in research grants** and CEBAR also raised income of over **RM37,000 through workshops and training courses** run by our staff and members.

Currently, CEBAR has **over 179 graduate students** under supervision by our Principal Investigators with over 38% of these at the PhD level of which over 14% are International students. In 2012, CEBAR also hosted **5 national and 3 international interns** in our various labs.

CEBAR staff and students won a total of **2 National Awards** and registered **5 patent applications** in 2012.

Activities in 2012 included **8 workshops, 2 training courses, 5 seminars /mini-symposia** and visits by **local** (Hexagon Green Biotech Sdn Bhd) and **international** scientists including from **Japan, India, and France**.

CEBAR continues to manage and operate the University of Malaya Plant Biotech Facility (PBF), which allows researchers to test novel hybrid plants on a large scale in a contained and climate controlled setting. CEBAR **successfully achieved re-certification** of the Plant Biotech Facility to international standards for Biosafety in August 2012 and the certificate is valid until 1st September 2013.

In terms of International and national networking, 2012 saw CEBAR as co-signatory to **MOAs** with the **Nara Institute of Science and Technology (NAIST), JAPAN; Beijing Genome Institute-Hong Kong Co., Ltd with 3 different PIs and Terra Garden Biotech Sdn. Bhd, Malaysia**. CEBAR also conducted activities under several on-going **MOU**.

In 2012, CEBAR continued to host several workshops and training courses which helps in the development of important skills not only among students but also the staff of CEBAR. Among workshops and trainings conducted are Grant Writing Workshop, Tissue Culture Workshop, Plant Cryopreservation Workshop and Risk Assessment Training.

*Centre for Research In Biotechnology for Agriculture (CEBAR)  
Highlights of Activities & Achievements in 2012*

**CEBAR FACTS & FIGURES FOR THE YEAR 2012**

| <b>Item</b>                               | <b>Detail</b>                                                                                                                                                            | <b>Comment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>71 ISI publications</b>                | <b>Tier 1: 29 (40.8%)</b><br><b>Tier 2: 24 (33.8 %) (75% Q1&amp;Q2)</b>                                                                                                  | Tier 3: 9 (12.6 %)<br>Tier 4: 10 (14.%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Research Grants &gt;RM 5.8 million</b> | <b>National grants:</b><br><b>RM 3,980,900.00 (68%)</b><br><br><b>RU grants:</b><br><b>RM 1,690,207 (28.9%)</b><br><b>Private grants:</b><br><b>RM 180,000.00 (3.1%)</b> | <b>14 MOHE grants</b><br><b>6 MOSTI grants</b><br><b>12 KPT grants</b><br><b>RU grants: 34</b><br><br><b>Terra Garden Biotech</b>                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Other income</b>                       | <b>RM37,442.00</b>                                                                                                                                                       | Workshops: RM 36,142.00<br>Training courses: RM 1300.00                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>179 Postgraduate students</b>          | <b>110 MSc</b><br><br><b>69 PhD</b>                                                                                                                                      | Local: 96 (87.3%)<br>International: 14 (12.7.3%)<br>Local: 51 (73.91%)<br>International: 18 (26.09%)                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>8 Interns</b>                          | <b>International : 3</b><br><b>National : 5</b>                                                                                                                          | Zakho University, Iraq<br>Polytech Clermont Ferrand, France<br>Vellore Institute of Technology, India                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>8 MOU/MOA</b>                          | <b>5 MOA</b><br><b>National : 1</b><br><b>International : 4</b><br><br><b>3 MOU</b><br><b>International : 3</b>                                                          | <b>MOA:</b> Agreement on research collaboration and academic exchanges between University of Malaya & NARA Institute of Science and Technology (NAIST), JAPAN; Beijing Genome Institute-Hong Kong Co., Ltd with 3 different PIs and Terra Garden Biotech Sdn. Bhd, Malaysia<br><b>MOU:</b> Student exchange between University of Malaya and Nara Institute of Science and Technology (NAIST), JAPAN; The University of Tehran, Iran and Asia Pacific International Molecular Biology Network (A-IMBN), Korea |
| <b>2 Awards to CEBAR PI and students</b>  | <b>National : 2</b>                                                                                                                                                      | FRIM Publications Awards, FRIM, 2012 awarded to Prof. Dr. Rofina Yasmin binti Othman.<br><br>First Prize in Poster Presentation. Chee CS, Alias Z, Tan IKP. 2012. Biochemical characterisation of isoforms of Glutathione S-Transferase (GSTs) purified from Acinetobacter calcoaceticus Y1. Abstracts of the 17th Biological Sciences Graduate Congress, 8-10 December 2012, Bangkok, Thailand. p                                                                                                            |
| <b>Intellectual property</b>              | <b>5 Patents</b>                                                                                                                                                         | Pending: 5 National                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>CEBAR activities</b>                   | <b>8 Workshops</b><br><b>2 Training course</b><br><b>7 Seminar/symposia</b><br><b>2 Expositions (participation in booth exhibition)</b>                                  | <b>Topics included:</b> Plant Biotechnology methods; genetic engineering; molecular biology techniques, plant tissue culture; cryopreservation; biosafety standard operating procedure development; grant preparation; scientific writing;                                                                                                                                                                                                                                                                    |

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|--------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Visitors hosted</b>               | <b>12 National<br/>13 International</b>                                                                                | International visitors: NAIST, Japan; Queen`s University Belfast, United Kingdom; Japanese Science Venture Company (Leave a Nest Co. Ltd.); University Aberystwyth, Bangor, & Reading, United Kingdom; Laboratory of Tropical Crop Improvement, Catholic University of Leuven, Belgium. |
| <b>Physical Resources and System</b> | <b>Re-certification of Plant Biotech Facility to international standards for infrastructure and operation to BSL-2</b> | The certification inspection was performed on August 2012 and the certificate is valid until September 2013.                                                                                                                                                                            |