

## Advanced Research Scholar – Grants-related

### Hilario Taberna, Jr.

Iloilo Science and Technology University



<b>Philippine University</b>	<i>Iloilo Science and Technology University</i>
<b>Field of Study:</b>	<i>Natural Products</i>
<b>Research Period</b>	<i>March – September 2017</i>
<b>US University</b>	<i>University of Georgia</i>
<b>US Professor</b>	<i>Dr. Parastoo Azadi</i>
<b>Research Title</b>	<i>Characterization of Alginic Acid Sodium Salt Extract</i>

#### Describe your research conducted in the US.

The research training aims to characterize the alginic acid sodium salt (Sodium alginate) extracted from two (2) brown seaweed species collected from San Dionisio, Iloilo, Philippines. Characterization of alginates of different sources is necessary in order for us to determine their composition or identity and the possible application of each alginate in various industries such as pharmaceutical, food, biomedical, etc.

#### What was the highlight of your research in the US?

The characteristics of our alginates extracted from *Sargassum* and *Padina* were established through this research training. Both alginates were found to have low M/G ratios, high values of homopolymeric blocks ( $\eta < 1$ ) and a significant polyguluronic block content. These attributes suggest that both alginates are suitable for cell encapsulation for biomedical or environmental applications. To my knowledge, our study is the first report relative to the chemical characterization of alginate from Philippine brown seaweeds.

#### In what way has the USAID scholarship changed you?

The 6-month research training in the U.S. has provided me a chance to work on a new field that is carbohydrate research. It has further enhanced my knowledge and skills on various analytical techniques applied to carbohydrate research and in the use of modern analytical instruments, which are not available in our institution.

#### How would you use the knowledge and skills gained through your research to contribute or influence economic growth in the country?

More researches related to brown seaweeds and other uses/applications of alginate from *Sargassum sp.* and *Padina sp.* will be pursued. Examples of these are the encapsulation of hydrocarbon degrading fungi using alginate for remediation of oil spill affected sediments and the use of alginate as food supplement to prevent obesity, hypercholesterolemia and diabetes. Harnessing the said industrial potential of our extracted alginates could lead to the valorization of these brown seaweed species and in effect stimulate economic growth in the countryside.

#### As a young scientist, what do you envision for the Philippine science, technology and innovation ecosystem in the next 10 years?

For me, the Philippine STI ecosystem will be developing fast in the next 10 years. Fundamentals such as upgrading of science education in all levels, developing human capital in STI, fostering culture of research in universities, forging functional relationships between academe, industry, government and non-governments organizations, etc. have been laid on. The challenge for us all is how to keep the positive outlook burning.

*Hilario is presently working as a Senior Faculty Researcher at Iloilo Science and Technology University. He plans to form research teams to explore more the use and industrial applications of brown seaweeds that would foster the creation of a brown seaweed industry to contribute to the socio-economic development of coastal communities, the province of Iloilo and the country.*

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