SUMMARY

- Original publications in peer-reviewed journals with Impact factor 14
- Published and "in press" - 4
- Submitted papers - 1
- Submitted patent -
- Publications of chapter in book - 1
- Industrial Newsletter -
- Final technical reports for funding agencies - 1
- Invited presentations at conferences/seminars - 4
- Voluntary presentation at conferences - 1
- Active projects - 4
- Submitted new projects - 6
- Review of manuscripts for International and National journals and funding agencies - 65

Total productivity (without conferences, reviews, and reports) for 2016: 21

Average "Impact Factor" of all published papers in 2016: 3.120

Published and "in press" publications in peer-reviewed journals with an impact factor: 15


Chapters in books: 1


Scientific industrial newsletter: 1


Publication in the Internet: 1


Submitted publications: 4


Submitted patent

22. Production of microencapsulation formulation of bio-drugs against viral diseases in aquaculture. Submitted to the Mexican Patent Office. (Results of CONACYT -Fondo sectorial de innovación, FINNOVA project)
Presentations at conferences: 5 (the invitee or the presenter = in bold)


Final technical reports for funding agencies

1. 2016 - **Final report on the project**: Planta piloto para validación de plataforma biotecnológica de microencapsulado de biofármaco contra enfermedades virales en acuicultura [Pilot plant for validation of biotechnological platform of microencapsulation of bio-drugs against viral diseases in aquaculture]. Presented to: CONACYT- Fondo sectorial de innovación, FINNOVA. 34 p. and one patent application (Dr. Luz de-Bashan, PI; Co-PI, Prof. Yoav Bashan and Dr. Umberto Mejia; Participants: Dr. Blanca Lopez; Dr. Grecia Vazquez and M.Sc. Juan Pablo Hernandez).

Scientific recognition and international services

1. **Institutional recognition of project.** The finished project “Physiological and molecular mechanisms in establishment and maintenance of mutualism in plants with different partners”, financed by CONACYT (Mexico) was recognized by Centro de Investigaciones Biologicas del Noroeste (CIBNOR) as exemplary and was presented to the Federal Government of Mexico as a “success case” of basic research (28.4.2016; Dr. Luz de-Bashan and Prof. Yoav Bashan)


4. **Governmental recognition of a project.** The finished project: “Cooperación técnica México-Colombia: Mejoras en los procesos de producción de biofertilizantes aplicados en cultivos de interés agroindustrial en Colombia”, financed by Agencia Mexicana de Cooperación Internacional para el Desarrollo, Secretaria de Relaciones Exteriores and Agencia Presidencial de Cooperación Internacional de Colombia was recognized by Federal governments of Mexico and Colombia as exemplary. It was later presented by the president of Mexico during his speech in the Colombian parliament as a “success case” of binational cooperation between the two countries (Prof. Yoav Bashan and Dr. Luz de-Bashan).

5. **Review of manuscripts for journals, funding agencies and foreign universities:** **Total: 65**

<table>
<thead>
<tr>
<th>Reviewer</th>
<th>Journal, University or Funding Agency</th>
<th>Country</th>
<th>Number of manuscripts</th>
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<tbody>
<tr>
<td>Yoav Bashan</td>
<td>Trends in Biotechnology</td>
<td>The Netherlands</td>
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<td>European Journal of Wood and Wood Products</td>
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<td>European Journal of Soil Biology</td>
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<td>Critical Reviews in Biotechnology</td>
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<td>Algal Research</td>
<td>The Netherlands</td>
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<td>Journal of Environmental Management</td>
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<td>Nutrient Cycling in Agroecosystems</td>
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<td>Science of the Total Environment</td>
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<td>Plant and Soil</td>
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<td>Biology and Fertility of Soils</td>
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<td>Applied Microbiology and Biotechnology</td>
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<td>Water Soil and Air Pollution</td>
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<td>Frontiers in Microbiology</td>
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<td>Preparative Biochemistry and Biotechnology</td>
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<td>Arid Land Research and Management</td>
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<td>International Journal of Molecular Sciences</td>
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<td>Brazilian Journal of Microbiology</td>
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<td>University of California- Los Angeles</td>
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<td>Ontario Pork Research proposals</td>
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<td>Czech Science Foundation</td>
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<td>Cantho University</td>
<td>Vietnam</td>
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### External research projects:

*(total: $2,995,000 pesos) (= US$ 150,504) *(19.9 Mexican pesos = 1 USD).*

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<tr>
<th>PI/Co-PI</th>
<th>Journal</th>
<th>Country</th>
<th>Duration</th>
<th>Funding</th>
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<tr>
<td>Luz de-Bashan</td>
<td>FEMS Microbiology Ecology</td>
<td>UK</td>
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<td>Plant and Soil</td>
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<td>Biology and Fertility of Soils</td>
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<td>Journal of Applied Phycology</td>
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<td>Frontiers in Microbiology</td>
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<td>Algal Research</td>
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<td>European Journal of Soil Biology</td>
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<td>Revista Argentina de Microbiologia</td>
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<td>Murdoch University</td>
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<td>Blanca Lopez</td>
<td>Plant and Soil</td>
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<td>2</td>
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<td></td>
<td>Journal of Arid Environments</td>
<td>The Netherlands</td>
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</tbody>
</table>

**“Pilot plant for validation of biotechnological platform of microencapsulation of bio-drugs against viral diseases in aquaculture”**

Funding: MN$ 2,995,000; Funded by CONACYT (Fondo sectorial de innovación, FINNOVA)
Duration: 2 years (2014–2016)
PI: Dr. Luz de-Bashan
Co-PI: Prof. Yoav Bashan; Dr. Humberto Mejia.
Participants: Dr. Blanca Romero Lopez, MSc. Juan Pablo Hernandez

**“Cooperación técnica México-Colombia: Mejoras en los procesos de producción de biofertilizantes aplicados en cultivos de interés agroindustrial en Colombia”**

Duration: 2 years (2014-2016).
PI: Prof. Yoav Bashan
Co-PI: Dr. Luz de-Bashan
Participant: M.Sc. Manuel Moreno and Dr. Blanca Romero Lopez

**“Establishment and functional optimization of natural and synthetic mutualisms”**

Funding: MN$ 3,000,000; Convocatoria CONACYT Investigación Científica Básica 2015 – Continuación de Proyecto de Grupo Consolidado –
Duration: 3 years (2016-2018).
PI: Prof. Yoav Bashan
Co-PI: Prof. Martin Heil CINVESTAV- Irapuato, Dr. Luz de-Bashan
Participants: Dr. Gabriela Olmedo CINVESTAV- Irapuato, Dr. Blanca Lopez, Dr. Oskar Palacios, CIBNOR.
"Cooperación técnica México-Colombia: Mejoras en los procesos de producción de biofertilizantes aplicados en cultivos de interés agroindustrial en Colombia"

Funding: Agencia Mexicana de Cooperación Internacional para el Desarrollo, Secretaria de Relaciones Exteriores. Agencia Presidencial de Cooperación Internacional de Colombia.

Duration: 2 years (2017-2018).

PI: Prof. Yoav Bashan and Dr. Thelma Castellanos; Dr. Ruth Bonilla
Co-PI: Dr. Luz de-Bashan

Submitted projects: 6

"Endophytic bacteria of the woolly moss (Racomitrium lanuginosum): biogeography, ecology and geomicrobiology".
Funding agency: Icelandic Research Fund (IRF) 2017- Via Bashan Institute of Science - USA
PI: Dr. Oddur Vilhelmsson, University of Akureyri, Iceland
Co-PI: Prof. Yoav Bashan, Dr. Luz E. de-Bashan

"Inoculante microbiano basado en un complejo alga-bacteria para mejorar la calidad de suelos degradados"
Funding agency: CONICYT – Chile, Proyectos Internacionales de Investigacion- Via Bashan Institute of Science - USA
PI: Dr. Cristian Agurto – Universidad de Concepcion, Chile
Co-PI: Prof. Yoav Bashan, Dr. Luz E. de-Bashan (Not approved)

"Desarrollo de una formulación inmovilizada a partir de hidrogeles y consorcio alga-bacteria para recuperar suelos degradados y aumentar la retención de agua en áreas agrícolas de baja productividad"
Funding agency: Fundación para la Innovación Agraria, Ministerio de Agricultura, Chile- Via Bashan Institute of Science - USA.
PI: Dr. Mauricio Schoebitz, Universidad de Concepcion, Chile
Co-PI: Prof. Yoav Bashan, Dr. Luz E. de-Bashan (Not approved)

"Establishment and maintenance of synthetic mutualism between microalga and plant growth promoting bacteria"
Funding agency: National Science Foundation (NSF), USA- via Bashan Institute of Science - USA
PI: Dr. Luz de-Bashan
Co-PI: Prof. Yoav Bashan (BIS), Dr. David Blersch, Dr. Andres Carrano Auburn University
Participante: Dr. Blanca Lopez; Dr. Oskar Palacios (CIBNOR) and Dr. Fabricio Cassan (University of Rio Cuarto, Argentina)

"Genomic insights into a synthetic mutualism between Chlorella sorokiniana and Azospirillum brasilense". (Not funded)
Funding agency: National Science Foundation (NSF), USA- Via Bashan Institute of Science - USA
PI: Dr. Luz de-Bashan
Co-PI: Prof. Yoav Bashan, Prof. Mark Liles Auburn University
Participante: Dr. Blanca Lopez; Dr. Oskar Palacios; Dr. Gracias Gomez-Andoro; Dr. Xavier Mayali, Dr. Octavio Perez-Garcia
"Investigation of stresses produced during inoculant formation to improved sustesthetic inoculant for agricultura and the environment”.

Funding agency: National Science Foundation (NSF), USA - Via Bashan Institute of Science - USA

PI: Dr. Luz de-Bashan
Co-PI: Prof. Yoav Bashan, Ass. Prof. Yi Wang Auburn University
Participants: Dr. Blanca Lopez; Dr. Oskar Palacios

Team 2016
(SNI-National academic ranking according to the National Research System of Mexico; Candidate<1< 2< 3; H-index and citations according to Google Scholar, January 2, 2017)

Researchers (full time)
1. Dr. Luz Gonzalez de-Bashan (SNI level 2; H-index-34; Citations- 6,395; life-time, average Impact factor61 publication= 3.084 )
2. Prof. Yoav Bashan (SNI level 3; H-index-69; Citations- 17,039; last 5 years, average Impact factor41 publication= 3.002)
3. Dr. Macario Bacilio (SNI level 1)

Research Associate (full time)
4. Dr. Blanca Lopez (SNI level 1, H-index-6; Citations- 176)

Post doctoral fellows
5. Dr. Oskar Palacios (full time) (SNI-Candidate; H-index-3; Citations- 43)
6. Dr. Ping Huang (Part time- In the USA)

Research staff (full-time)
11. M.Sc. Juan-Pablo Hernandez (To March 31, 2016) (SNI level 1; H-index-20; Citations- 1,892)
12. M.Sc. Manuel Moreno (H-index-10; Citations- 971)

Graduate students (Research, full time)

Webmasters
15. M.Sc Juan-Pablo Hernández (Webmaster-in-Chief to March 31, 2016)
16. Dr. Afonso Medel (Webmaster-in-Chief since April 1, 2016).
17. M.Sc. Edisa Garcia (Assistant webmaster to May 31, 2016)
18. M.Sc. Claudia Contreras (Assistant webmaster since July 1, 2016)

International and national collaborations in 2016
(in: projects, publications and supervising of graduate students in chronological order of cooperation)

1. Prof. Hani Antoun. Laval University, Quebec (Canada). Water Bioremediation. (not active in 2016)
3. Prof. Anton Hartmann. German Research Center for Environmental Health, München (ret.), (Germany). Plant-bacteria interactions.
4. Prof. Martin Heil, CINVESTAV (Guanaajuato, Mexico). Mutualism between microalgae and bacteria.
5. Dr. Alberto Mendoza- CBG-IPN, Reynosa, Tamaulipas (Mexico). Colonization of Azospirillum.
7. Prof. Joseph Kloepper, M.Sc. John McInroy and Dr. Ping Huang, Auburn University, Auburn (USA). PGPB/PGPR.
8. Prof. Gabriela Olmedo, CINVESTAV (Guanaajuato, Mexico). Mutualism between microalgae and bacteria.
14. Prof. Rainer Borriss. Humboldt University (Germany). Molecular biology of desert bacilli. (not active in 2016)
15. Dr. Alan Pamella. Laboratorio Farroupilha. (Brazil). Improvements of commercial inoculants.
18. Dr. Valeska Villegas Escobar. Universidad EAFIT, Medellin (Colombia). Detection of Bacillus subtilis by FISH.
20. Dr. Xavier Myali. Lawrence Livermore National Laboratory, California (USA). Study of microalgae-bacteria interaction using nanoSIMS.
21. Dr. Peter Weber. Lawrence Livermore National Laboratory, California (USA). Study of microalgae-bacteria interaction using nanoSIMS.
22. Dr. Octavio Perez-Garcia. University of Auckland, (New Zealand). Heterotrophic and Mixotrophic growth of microalgae; mbtabolic modeling
24. Dr. Walter Osorio. (Colombia) Universidad Nacional de Colombia. PGPB and P fertilization.
25. Dr. Cristian Agurto. University of Concepcion. (Chile). Biotechnology of microalgae.
27. Prof. Roberto Riquelme (Chile) University of Concepcion. Modeling of microalgae growth.
28. Dr. Mauricio Schoebitz (Chile) University of Concepcion. Restoration of forests.
29. Dr. Ruth Bonilla, CORPOICA (Colombia). Improvement of bacterial inoculants.
30. Dr. Oddur Vilhelmsson (Iceland) University of Akureyri. Endophytes from extreme environments.
31. Prof. Gabriele Berg, (Austria). Technical University of Graz. Endophytic bacteria
32. Dr. Armin Erlacher, (Austria). Technical University of Graz. FISH and 3D modeling.
33. Dr. David Blersch, (USA). Auburn University. Microalgae bacteria interaction.
34. Dr. Andres Carrano, (USA). Auburn University. Microalgae bacteria interaction.
35. Dr. Yi Wang, (USA). Auburn University. Inoculants of PGPB.
36. **Prof. Mark Liles (USA)** Auburn University. Molecular biology of Microalgae.
37. **Dr. Ali Khalvati (Turkey)**. Bosphorus University. Mycorrhizae. (new)
38. **Dr. Robert Armon (Israel)**. Israel Institute of Technology. Microalgae and energy cells (new).
39. **Dr. Camilo Ramirez (Colombia)** Universidad de Antioquia. PGPB and degraded soils. (new)
40. **Dr. Pilar Ximena Lizarazo (Colombia)** Universidad de Antioquia. PGPB and cocoa grains (new)
41. **Dr. Jesus Mercado-Blanco (Spain)**. CSIC-Cordoba. Endophytic bacteria from the desert (new).
42. **Dr. Brendan Higgins (USA)**. Auburn University. Microalgae bacteria interaction (new).