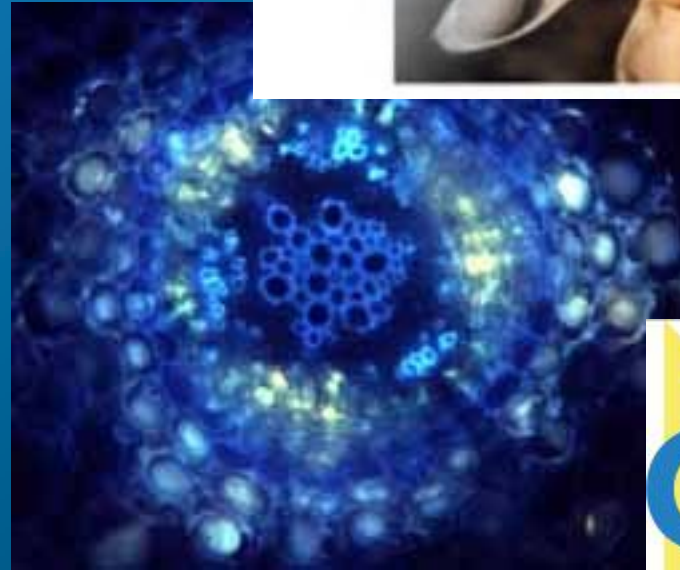


ARC Centre of Excellence for Integrative Legume Research



Lisette Pregelj – Education and
Outreach Manager

What are Legumes?



- Large family of flowering plants
- Trees, shrubs, vines or herbs
- Grow throughout the world
- More than 1000 species in Australia
- Wattle is a Legume!

What are Legumes?

- Soybeans
- Lupin
- Alfalfa (Lucerne)
- Mung Bean
- Peanut
- Clover
- Faba Bean
- To name a few...



What are Legumes?



- Legumes are important crops and pastures
- Legumes form a distinctive fruit called a pod
- Legumes form a special relationship with nitrogen fixing bacteria
- Legumes have nodules on their roots

Legume Nodules

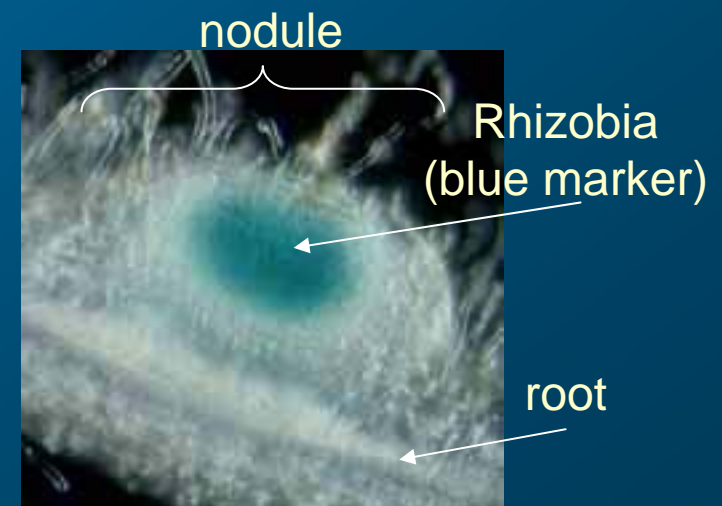
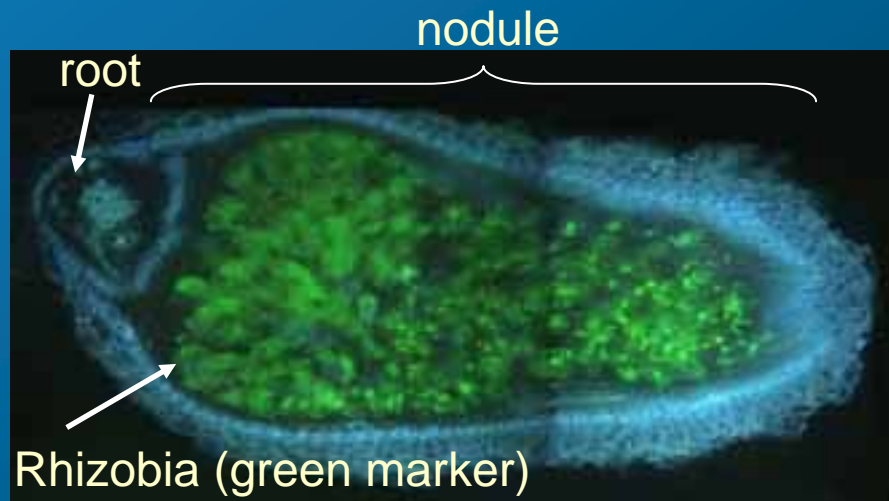
- Legume nodules are special plant organs that house nitrogen-fixing bacteria called *Rhizobium*
- Nodules form on Legume roots
- Nodules can also form on stems in some species



Nodules

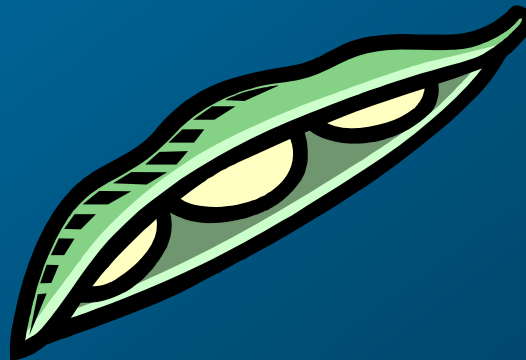
Rhizobia

- Rhizobia are bacteria that can convert Nitrogen gas from the atmosphere into ammonia
- Ammonia is a form of Nitrogen that plants can use to make proteins and DNA
- Plants cannot make ammonia on their own - they need HELP from fertilisers, OR SYMBIOSIS

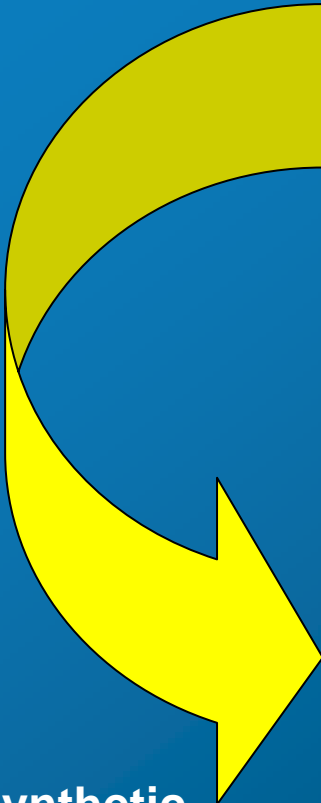


Symbiosis

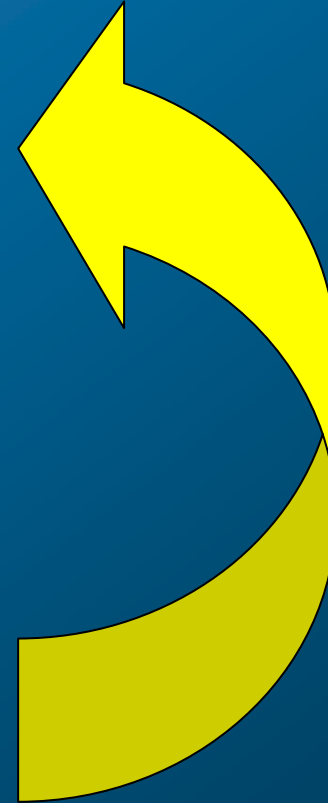
- Legumes and *Rhizobia* exists in a symbiotic relationship
- *Rhizobia* fix nitrogen for Legumes to use
- Legumes in exchange give *Rhizobia* essential sugars as food
- They could not survive without each other
- This is an example of symbiosis



**Photosynthetic
Sugars**



Nitrogen (ammonia)



CILR

- **University of Queensland**
- **Australian National University**
- **University of Melbourne**
- **University of Newcastle**



CILR

ARC Centre of Excellence for Integrative Legume Research

Contact Us

HQ: University of Queensland

Tel: 3365 3550

Email: director.CILR@uq.edu.au

lissette.pregelj@uq.edu.au

Visit Our Website!

www.cilr.uq.edu.au

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