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SEW-REAP: planting the seeds of early career soil-soya research in China



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SEW-REAP (2016-2019): an EU project allowing academic mobility from EU to China

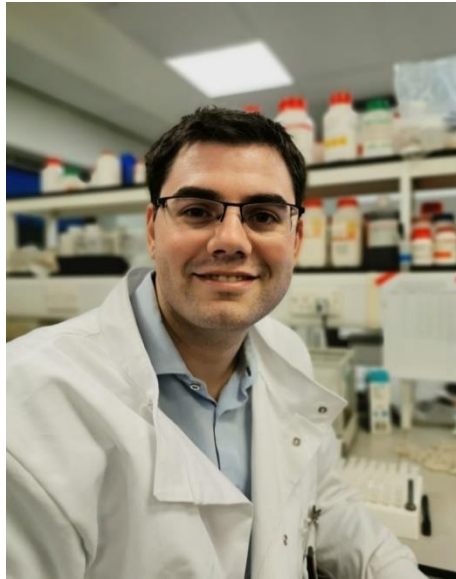


To build research capacity in the EU specifically to tackle key global challenges regarding food, agriculture, biotechnology and water.

To develop & normalize a research culture of international & interdisciplinary collaboration between EU & Chinese researchers through person-to-person & institutional research connections with internationally-renowned groups in China.

SEW-REAP: Opportunities for early career researchers

Dr Pedro Castro (24 mo)



Purificación Martínez-Melgarejo (18 mo)

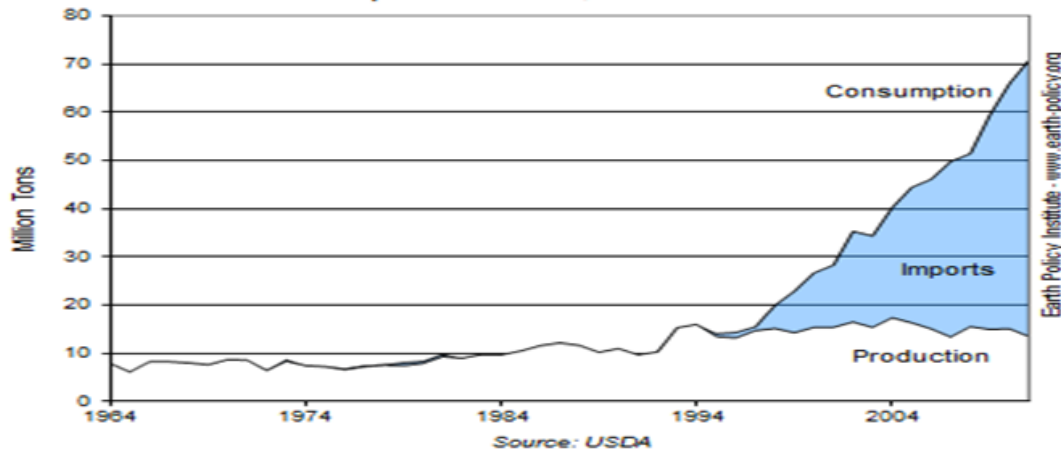


Those that answered the call:

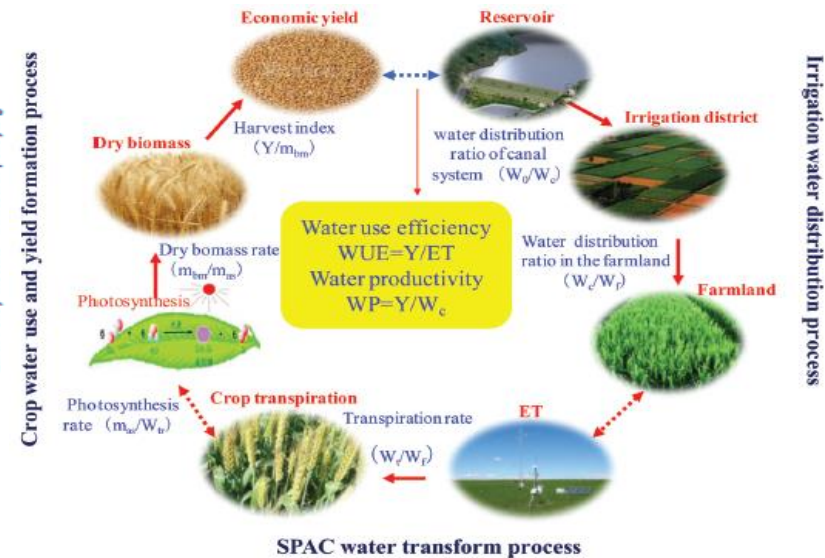
- 10 positions of 24 months (PhD students & postdocs)
- 4 positions of 12 months (PhD students & postdocs)
- 6 positions of 3 months (Senior Researchers)

SEW-REAP: Why focus on soil-soya ?

Figure 9-2. Soybean Production, Consumption, and Imports in China, 1964-2011



Zhang et al. 2016; *Theoret. App. Climatol.* 123, 291



China is not self-sufficient on soya production

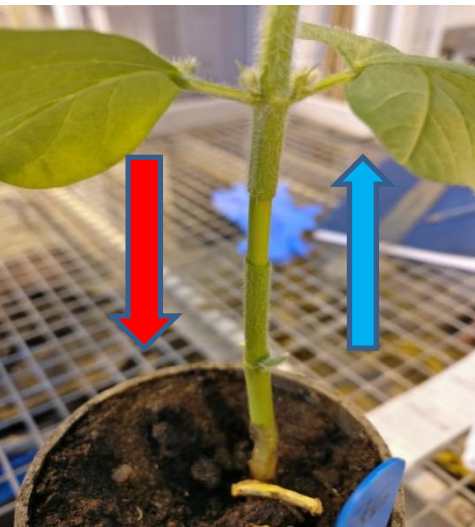
Soybean production is constrained by drought & low soil P

Internationally renowned soya research ongoing in China

SEW-REAP: Understanding local / long distance hormone action

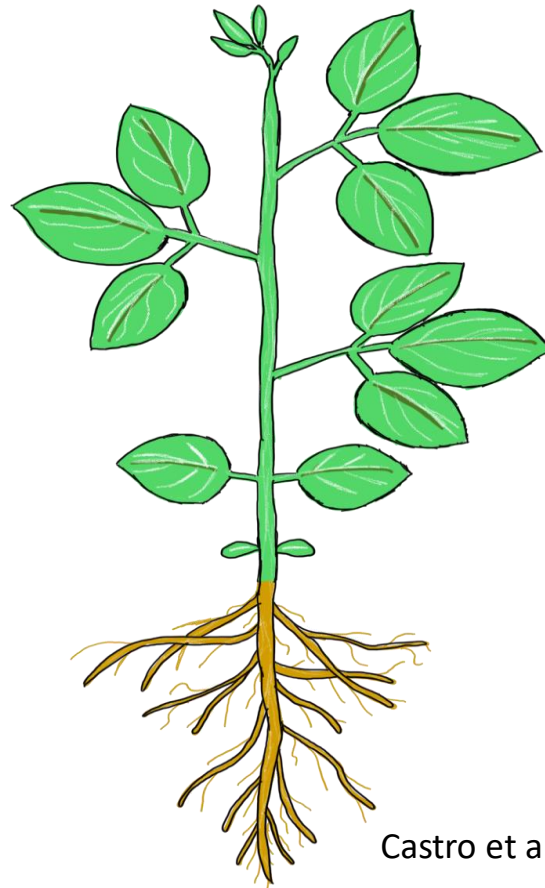
Genotypic variation in stomatal regulation

Enhance water use efficiency

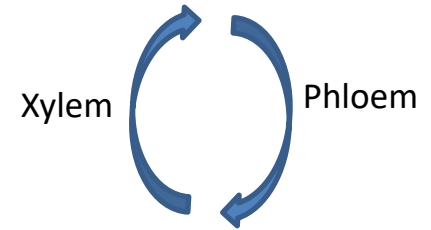


Genotypic variation in root development allowing P uptake

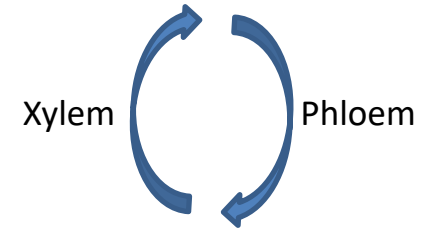
Overcome P deficiency



Generated / Perceived
in Leaves



Transmitted / Propagated

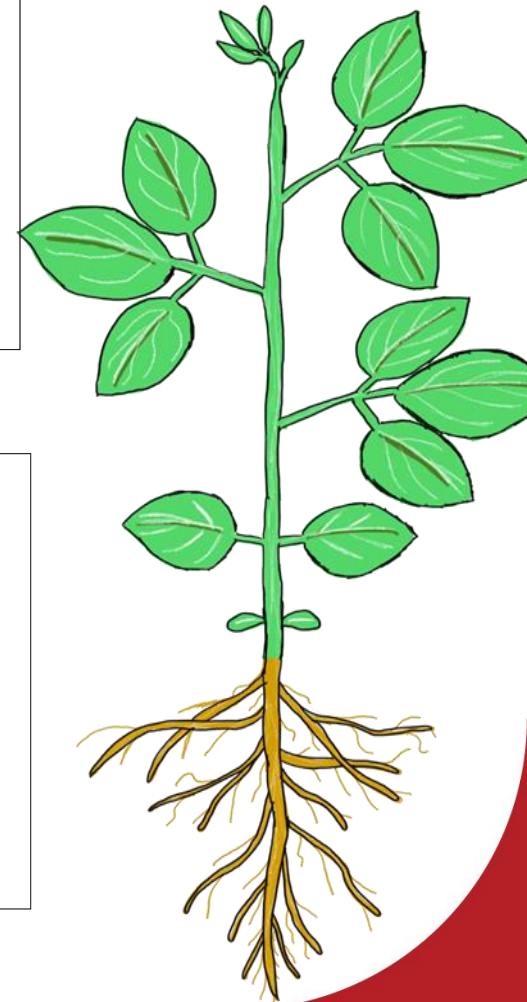
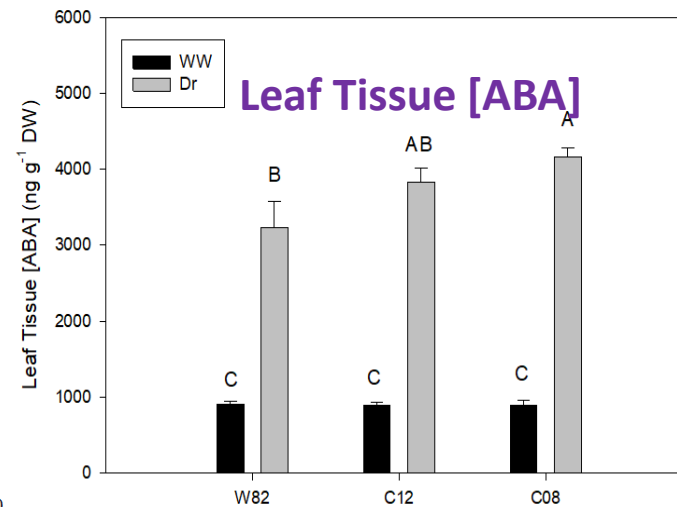
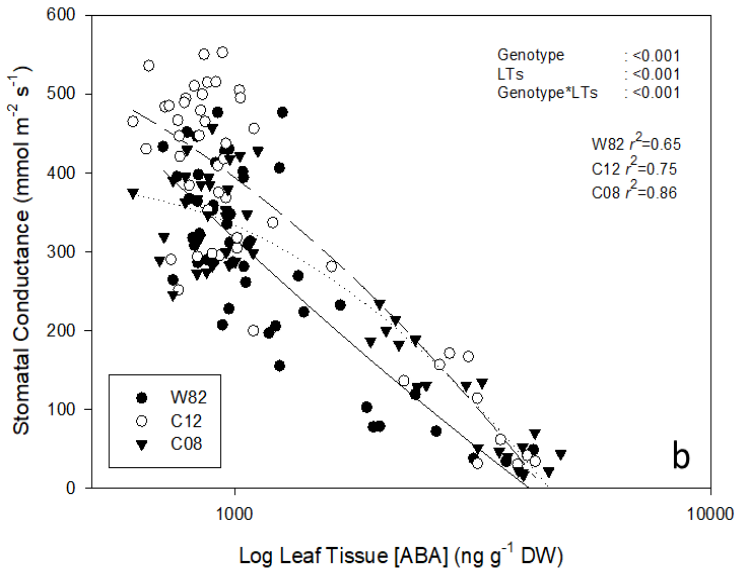
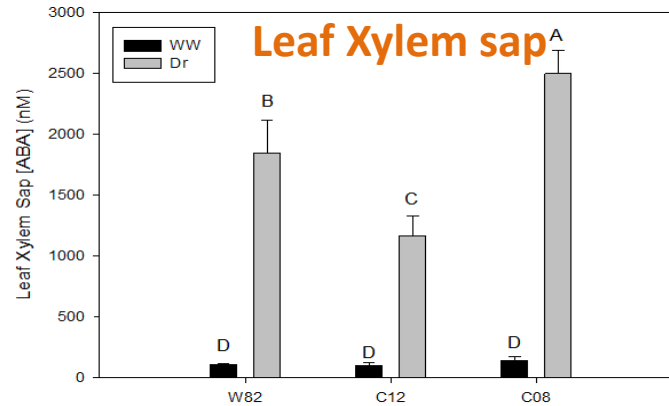
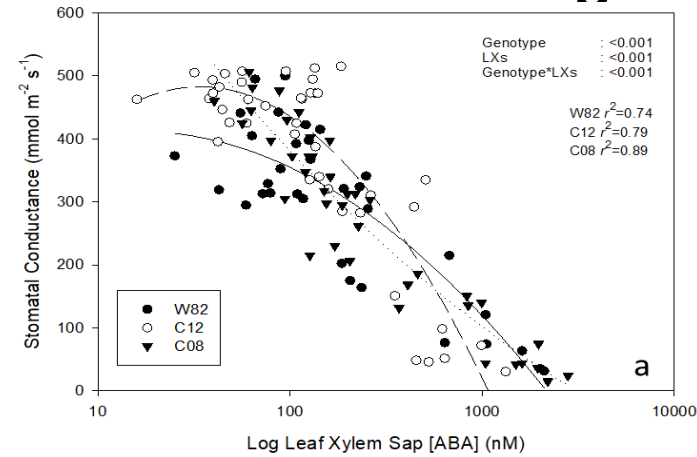


Generated / Perceived
in Roots



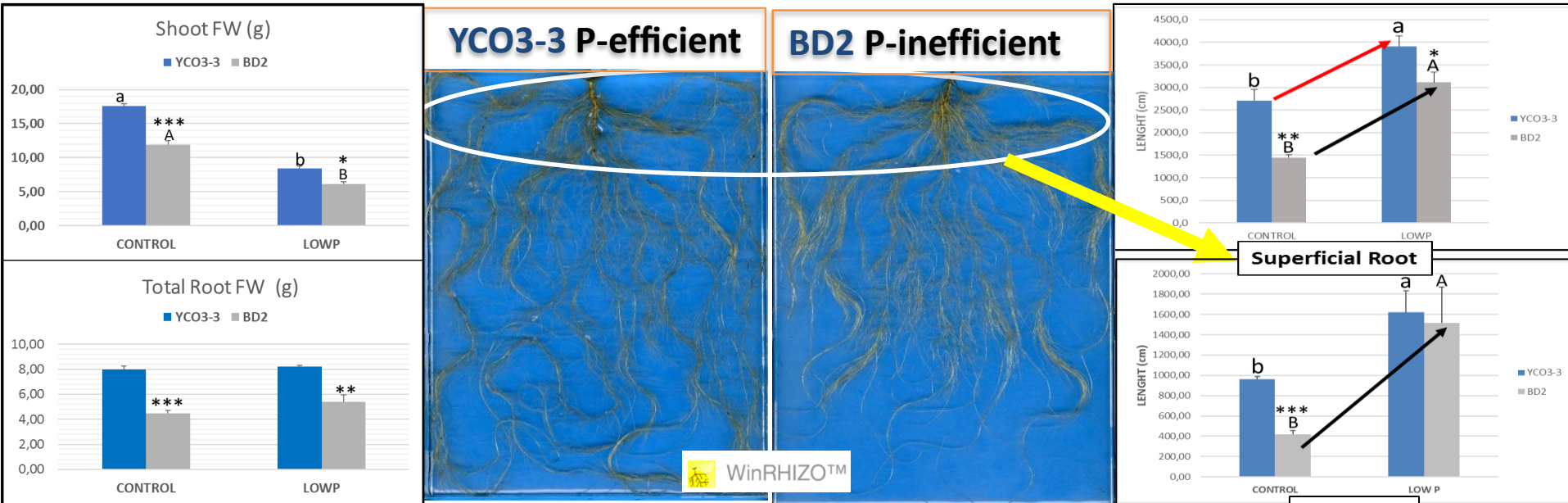
Dr Pedro Castro:

ABA-mediated genotypic variation in stomatal regulation

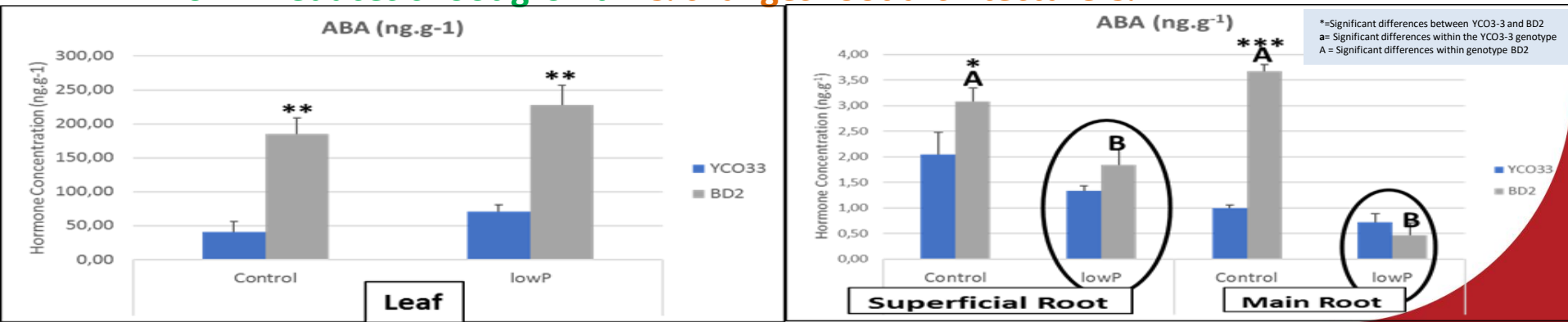


Purificación Martínez-Melgarejo:

ABA-mediated genotypic variation in root development



Low P reduces shoot growth & changes root architecture & ABA





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SEW-REAP: Cross-institutional research (& undergraduate recruitment)

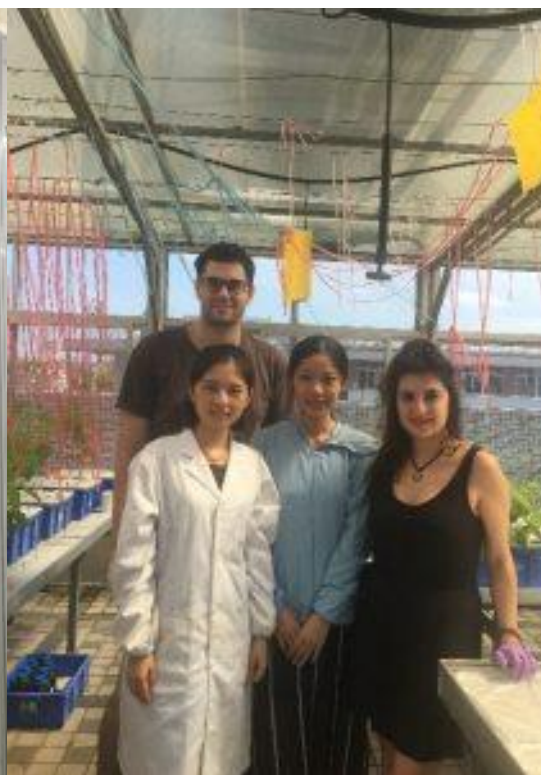


- More than just soil-soya research – 6 PhD graduates (to date) across a range of disciplines
- Cultural (& sometimes financial) challenges = alot of noodle consumption & new language skills
- Established new working relationships leading to more substantial EU / NSF funding

A new culture, a new personal and scientific life...



SEW-REAP: Personal perspectives of the researchers



https://ukcn-irice.org/sew-reap_blog/



SEW-REAP: a large research community working across the food-agriculture-water-environment nexus



SEW-REAP Closing Conference 2019



SEW-REAP's Legacy ?

SHui: Soil Hydrology research platform underpinning innovation to manage water scarcity in European and Chinese cropping systems



<https://www.shui-eu.org/>

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