Using natural variation for rice improvement

- Urgent need for crop improvement:

- World population expected to grow to 9,000,000,000 by 2050

- Climate change and increasing unpredictability will reduce yield

- Increasing demand for meat and biofuels put further strains on agriculture

- One path forward is to use the natural genetic diversity (“natural variation”) already present in rice

- 120,000 different rice strains have been deposited in seed banks

- These harbor different genetic variants

- Many are just random

- some provide adaptation to specific environments/stresses

- drought, flooding, heat, pathogens, etc

- some determine specific grain characteristics of consumer interest

- stickiness

- grain length

- aromatic (basmati, jasmine)

- color

- Identify genes or genomic locations of variants

- Why?

Science Daily and IRRI

http://www.sciencedaily.com/releases/2009/07/090723113512.htm

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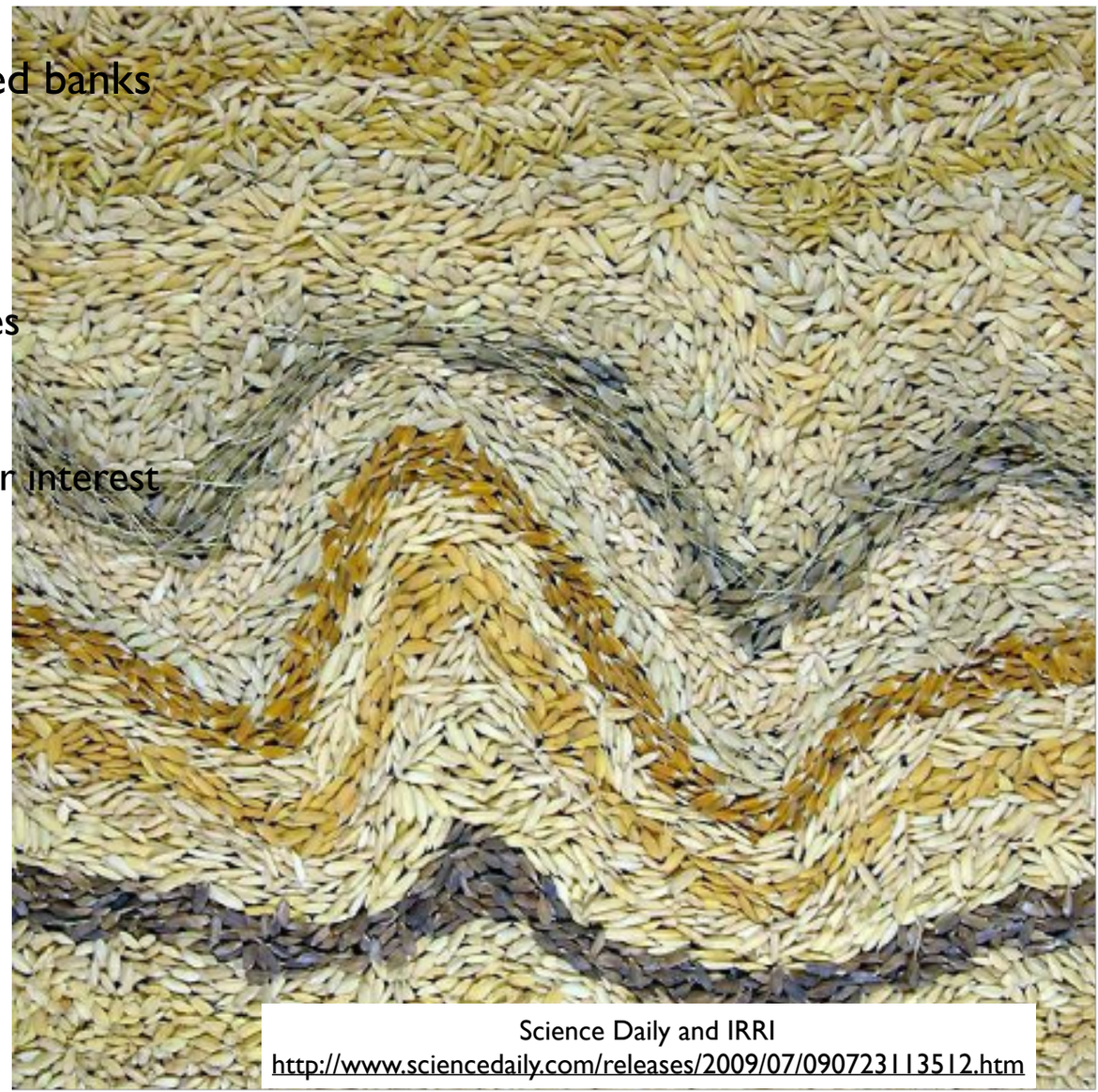

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We will focus on root traits

- Why Roots?

EU Root/Adam Price. http://www.euroot.eu/gallery/album1/