Locally Adapted Seed

Are chosen from plants that have been selected for their ability to flourish in specific locations.

- Seeds are constantly evolving- via mutations
- Not all adaptation is favorable, but it will happen
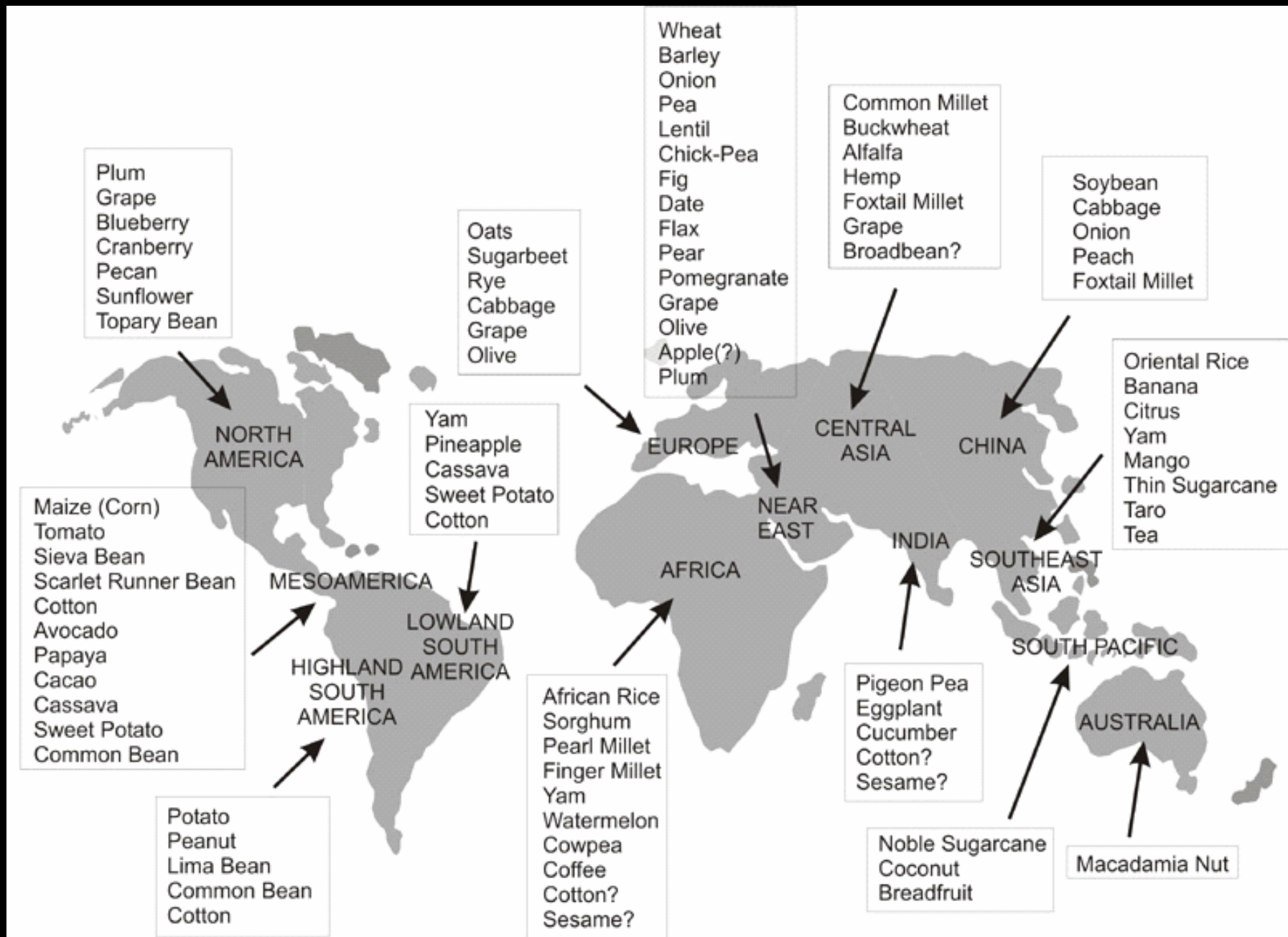- Observation is key

Nikolai Vavilov
Russian Scientist 1887-1943

- Seed collector, Botanist, World Traveler, Humanitarian and Linguist

- Mapped the global biodiversity hots spot

- Created the World's largest collection of plant seeds in Leningrad

- "Where our Food Comes From" by Paul Nabhan

Centers of Crop Origins

Graphic: Centers of Origin J.R. Harlan (Rao &

Knowing the origins of food crops

He noticed that the longer a crop had been grown in one area the more *Genetic variation* he saw- this led him to his theory of crop origins.

- **locate wild relatives**

- **Find new genes that are resistant to disease**

- **Avoid genetic erosion**

- **Higher biodiversity = more resilience**

- **Protect cultural heritage**

Landrace

Any animal or plant species that has adapted to the natural and cultural environment in which it lives.

- **Are able to withstand extreme conditions**

- **Thrive in very specific locale**

- **Needs little inputs**

- **Maintained by traditional/indigenous farming systems- often for long periods of time.**

Locally adapted Landrace varieties

Christmas Lima
Phaseolus lunatus

Ethiopian Kale
Brassica carinata

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Co-Creating with Plants

Our ancestors had no set of rules or seed manuals to follow, yet somehow managed to develop a huge variety of crops that formed the basis of today's global food supply–
including thousands of currently "lost" varieties.

- **Practice good observation skills**

- **Enhance intuitive skills or senses**

- **Share plant material with others**

- **Take notes**

- **Engage in active roguing and selection**

Roguing and selection

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- Selection is the active choice to save seeds from the best performing plants and/or fruits after flowering has occurred

- Heavy roguing and selection from a large population can improve the variety over a few number of generations .

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Roguing and selection: what to look for

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- Rogue all but the strongest seedlings

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- Rogue "off types": shape, height, vigor, etc.

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Roguing and selection: what to look for

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- Rogue "off types": shape, height, vigor, etc.

- Select from the last plants to succumb to a disease or pest, or those that continue to bear well under pressure

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- Select latest bolters in leaf crops

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Creating our own landraces and locally adapted varieties

Recommendations by a landrace farmer in Utah--Joseph Lofthouse

- Add small amounts of new genetics to the gene-pool from time to time-including wild pollen.

- Include a small amount of 2 and 3 year old seed in each years planting.

- Grow a sufficiently large population to maintain genetic diversity.

- Rouge inferior plants, select for resilience

- Be liberal during selection: Save fruits of different sizes, shapes, colors, textures, flavors, and maturity dates

- Swap seeds with the neighbors to enhance local adaptability

- Have Fun! Be Creative