The National Clonal Germplasm Repository for Citrus & Dates (NCGRCD), located in Riverside, California USA, is a project of the Agricultural Research Service (ARS) of the United States Department of Agriculture (USDA). The NCGRCD maintains a collection of germplasm of date palm (*Phoenix dactylifera* L) in Thermal, California. This collection is based upon the date palm germplasm imported by the USDA in the early 20th century. It presently comprises 134 accessions of *Phoenix* germplasm, of which 117 represent *P. dactylifera* and 17 represent seven other species of *Phoenix*. *P. dactylifera* germplasm includes 28 pistillate accessions directly derived from Old World varieties, 9 New World pistillate accessions, 35 staminate accessions, 17 breeding lines, and 28 miscellaneous accessions. NCGRCD is a service program. Germplasm is freely available to researchers worldwide and is distributed mostly as leaf tissue and seed; other forms may be available. In recent years, NCGRCD germplasm has supported efforts in date palm genome sequencing and marker development, as well as other genetic-related research. Some results of these distributions will be summarized, and the current status, prospects, challenges, and services of the program described.

### Status Of Date Palm Germplasm Repository 2015
- 133 Total Accessions
  - 118 *Phoenix dactylifera* Accessions
    - Named Old World Female Varieties = 28
    - Named New World Female Varieties = 9
    - Superior Male Selections = 5
    - Backcrossed Male Accessions = 50
    - Hybrid Breeding Lines = 17
    - Baja California Sur Seedlings = 10
    - Miscellaneous/Unverified = 19
  - 15 *Phoenix* spp Accessions (2 spp)

### Services
- Germplasm for research purposes
  - Generally meets applicable curatorial and phytosanitary standards
  - Leaf material, seeds, pollen, other plant parts
  - Controlled pollinations
  - Lead time needed
  - Long-term storage of significant germplasm (potential)
  - Quarantine protocol needed

### Strengths of the Collection for Collaboration
- Mission oriented to supporting wide range of research
- Continuously maintained in isolation by USDA for >100 years
- Curatorial continuity
- Wide geographic origin of accessions
- Backcrossed male lines

### Qatar Group (J Malek)
- Mathew et al. (2013) A genome-wide survey of date palm cultivars supports two domestication events in *Phoenix dactylifera*. In revision.

### SSR Markers 1
- 37 primer pairs screened → 5
- 41 primer pairs screened → 17

### SSR Markers 2
- 460 ESTs (from 28889) contain SSRs
- 20 primer pairs → 6
- J Bennetzen (UGA) wide range survey, manuscript in preparation

### Miscellaneous

### In House SSR Project
- Collection survey using SSR
- Just initiated
- Cooperative with G Vidalakis, UC Riverside
- SSR from Billotte et al. (2004), Akkab et al. (2009)*, Johnson et al. (2009)*

### Validation of Unverified Accessions
- 19 accessions collected locally, AZ & CA
- Identified by donors based on morphology
- Morphological observations in house
- 18 SSR markers courtesy IRD group (thank you!)
- Validated several accessions
  - Identical to known accessions
  - Some new accessions duplicated
  - Others unknown or unverifiable

### Tissue Culture Backup/Validation
- Validation of TC-produced date palms
  - Cooperative with Agrotech Phoenix (I. Hoffman), UC Riverside
  - Cultural/morphological observations
  - Molecular
- Back up of date palm germplasm by TC
  - Cooperative with G Volk, National Center for Genetic Resource Preservation (USDA)

### Mapping Populations
- Collaborative with J Bennetzen, UGA
- Done 2011 – 2012
- Barhee X Medjool BC4
- Khadrawy X Medjool BC4
- Khirsal X Medjool BC4
- Problem: lack of resources to support long-term field planting

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Search for date (and citrus) germplasm: [http://www.ars-grin.gov/npgs/acc/acc_queries.html](http://www.ars-grin.gov/npgs/acc/acc_queries.html)