Seedling traits of two promising native grasses at early developmental stages

Magda Garbowski, Cynthia Brown, Danielle Johnston

Colorado Plateau Native Plant Program Annual Meeting
February 6, 2018
### Traits and ecological processes

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## Traits and ecological processes

### Growth Rate
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  - High SLA has been linked to efficient carbon capture that leads to rapid growth and competitive ability
  - Low SLA has been linked to leaf longevity and stress tolerance

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### Height
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### Specific Root Length
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### Total Root Length
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Seedling traits

– Seed and seedling traits can greatly inform recruitment outcomes (Larson 2015)
– Competitive advantages based on growth rates may be gained in the first 2-3 weeks post-germination (Reichmann et al. 2016)
Among population variation may influence community structure and ecosystem function (Des Roches, 2017)

The ecological importance of intraspecific variation

Simone Des Roches, David M. Post, Nash E. Turley, Joseph K. Bailey, Andrew P. Hendry, Michael T. Kinnison, Jennifer A. Schweitzer and Eric P. Balke

The return of the variance: intraspecific variability in community ecology

Cyrille Violle, Brian J. Enquist, Brian J. McGill, Lin Jiang, Cécile H. Albert, Catherine Hulshof, Vincent Jung and Julie Messier

Trait variation along elevation gradients in a dominant woody shrub is population-specific and driven by plasticity

Alix A. Pfennigwerth, Joseph K. Bailey and Jennifer A. Schweitzer

Comparing intra- and inter-specific effects on litter decomposition in an old-field ecosystem

Gregory M. Crutsinger, Nathan J. Sanders, Aimée T. Classen
# Species and populations

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**Hesperostipa comata and Vulpia octoflora populations**

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Hesperostipa comata and Vulpia octoflora populations

10-20 cm = RED
20-30 cm = YELLOW
30-40 cm = GREEN
40-50 cm = BLUE
**Hesperostipa comata** – Needle and thread

Ladybird Johnston Wildflower Center

Map showing locations HECO_AZNC_KV, HECO_UTC_TMR, HECO_UTC_KRR, and HECO_UTSW_SP.
**Hesperostipa comata** – Needle and thread grass

**H. comata – Total Weight**

**H. comata – Root Mass Ratio**

**H. comata – Specific leaf area**

**H. comata – Specific root length**

Population

- HECO_AZNC_KV
- HECO.UTC.KRR
- HECO.UTC.TMR
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**Precipitation**

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- cm/g
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