

Sprouted Grains Working Group

- Mid-2015 to October 2017
- 47 individuals from 28 companies
- Document common approaches, best practices
- Spoiler Alert: Defining standards for sprouted grains still a work in progress



The Foundation

- First must establish & document viability of grain
 - Estimated 60% of grains on market are incapable of germination because aggressive drying/heat treatment, seed age, or breeding
 - How to test viability: TZ index (germination rates 85-95%, depending) or using wet paper towel
- Must be sprouted intentionally through controlled process (not accidentally field sprouted)

Multiple Criteria for Sprouted Grains

1. Visible sprout
2. Alpha-Amylase Increase (FN or RVA)
3. Amino Acid Increase (GABA)
4. Phytate Breakdown and/or Phytase Increase



1. Visible Sprout

- While a visible chit or acrospire *confirms* sprouting, lack of visible chit or acrospire does not *disqualify* a grain if sprouting can be documented with other methods. Why?
 - Sprout may have fallen off during drying
 - Seeds sprout at different rates in same batch
 - Beneficial changes take place before sprout is visible
 - Seeing sprout on tiny seeds may be difficult
- “Visible” needs to be further defined

2. Alpha-Amylase Increase

How to measure:

- Falling Number (FN) for wheat (and barley, rye, or sorghum)
 - Desired percentage change varies (~25-60%) by type of wheat
- Rapid Visco Analyzer for all grains
 - Too early to suggest standards or benchmarks across all grains
 - Very expensive, but shows promise

3. Amino Acid Increase

- Documented by increase in GABA
 - For rice, GABA increases 300%+
 - GABA also used with other grains, like wheat (500-900% increase) or sorghum
 - Altitude may affect readings
 - How to measure: Medallion ion-exchange chromatography AOEC method, or GABAlyzer machine
- May also be possible to measure overall total free amino acids, which increase in many sprouted grains.

4. Phytate Breakdown / Phytase Increase

- A specified % reduction of phytate can indicate a sprouted grain
- % varies widely between grains, and depending on soaking medium & time
- May be inconsistent



Looking Ahead

- More research is needed on what point in sprouting process is correlated with “ideal” nutrient & culinary benefits
- More research/documentation needed to clarify cut-offs for sprouting indicators
- Future ideas/possibilities: “Index of Sprouting” where grains would be scored on protein hydrolyses, starch hydrolyses, and micronutrient index, and characterized as minimally sprouted, optimally sprouted etc.

Thank you!

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