

# The Secret's Out: Sorghum is the Sustainable Ancient Grain RDs are Buzzing About

September 21, 2022

# About Oldways

- **Our Vision**  
A healthier, happier life through cultural food traditions.
- **Our Mission**  
We inspire people to embrace the healthy, sustainable joys of the old ways of eating.
- **Best Known for**  
Creating the Mediterranean Diet Pyramid and other Heritage Diet Pyramids, Creating the Whole Grain Stamp, Culinary Travel



# About the Oldways Whole Grains Council

## Our three-part mission:

- To help consumers find whole grain foods and understand their health benefits
- To help manufacturers and restaurants create delicious whole grain foods
- To help the media write accurate and compelling stories about whole grains



# Housekeeping

- Attendees will receive an email within ONE WEEK with **CPEU certificate, slides, and recording**
- Visit **[oldwayspt.org/CPEU](https://oldwayspt.org/CPEU)** to register for upcoming webinars or view recordings of previous webinars
- Please submit any questions using the CHAT function in Zoom
- Thank you to our friends at the United Sorghum Checkoff Program for sponsoring this session!
- Join us for another webinar on October 26!



Webinar  
**Putting Plant-Based Diets  
on the Menu in Healthcare**  
With a panel of plant-based experts  
October 26 • 2:00 PM E.T.  
**OLDWAYS**





# The Secret's Out: Sorghum is the Sustainable Ancient Grain RDs are Buzzing About

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**United Sorghum Checkoff Program**

# Overview

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- Sorghum 101
- Nutrition and Research
- Applications
- Consumer Demand



# Sorghum 101

- Grain
- Forage
- Biomass
- Sweet





# Around the World



**SORGHUM**  
Nature's Super Grain 

OLDWAYS  
WHOLE  
GRAINS  
COUNCIL 

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# Where to Find Sorghum

01



**KANSAS**  
3 MILLION ACRES

02



**TEXAS**  
1.8 MILLION ACRES

03



**COLORADO**  
370,000 ACRES

04



**OKLAHOMA**  
305,000 ACRES

05



**SOUTH DAKOTA**  
210,000 ACRES

# Sorghum Lifecycle

**Planting**



**Flowering**



**Harvesting**



**Growing**



**Maturing**



# The Resource Conserving Crop™

- Water Conservation
  - Drought tolerant with 91% sorghum acres nationally rain-fed
- Soil Health
  - Sorghum stalks left in field add nutrients back to soil & retain moisture
- Air Quality
  - Removing carbon from atmosphere and placing in soil
  - Ethanol made from sorghum is clean-burning fuel that reduces particulate matter by 50%
- Wildlife Conservation
  - Stalks provide winter habitats for pheasants and quail



<https://www.sorghumcheckoff.com/wp-content/uploads/2021/10/The-Carbon-Footprint-of-Sorghum.pdf>  
<https://www.extension.purdue.edu/extmedia/ct/ct-1.html>, <https://www.sorghumcheckoff.com/wp-content/uploads/2021/11/Sorghum-Checkoff-Carbon-Footprint-Final-April-2020.pdf>  
<https://www.extension.purdue.edu/extmedia/ct/ct-1.html>  
[https://www.researchgate.net/publication/232099073\\_Crop\\_Rotation\\_and\\_Tillage\\_Effects\\_on\\_Organic\\_Carbon\\_Sequestration\\_in\\_The\\_Semiarid\\_Southern\\_Great\\_Plains](https://www.researchgate.net/publication/232099073_Crop_Rotation_and_Tillage_Effects_on_Organic_Carbon_Sequestration_in_The_Semiarid_Southern_Great_Plains)  
<https://fixourfuel.com/2018/04/11/new-studies-show-ethanol-reduces-emissions-and-improves-air-quality/>  
<https://www.usda.gov/oce/commodity/wasde/wasde0819.pdf>  
[https://www.michigandnr.com/publications/pdfs/huntingwildlifehabitat/Landowners\\_Guide/Species\\_Mgmt/Quail.htm](https://www.michigandnr.com/publications/pdfs/huntingwildlifehabitat/Landowners_Guide/Species_Mgmt/Quail.htm)

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# Applications



Swine



Pet Food



Beef/Dairy



Poultry



Aquaculture



Renewables



Alcohol



Consumer Food

# SORGHUM

Nature's Super Grain



|            | SORGHUM | CORN   | WHEAT  | OAT    | RICE   | QUINOA |
|------------|---------|--------|--------|--------|--------|--------|
| PROTEIN    | 29.68%  | 5.55%  | 15.98% | 11.88% | 5.65%  | 12.32% |
| FIBER      | 33.5%   | 6.07%  | 21.50% | 14.20% | 5.00%  | 14.00% |
| PHOSPHORUS | 32.36%  | 6.05%  | 16.46% | 14.41% | 0.89%  | 17.02% |
| ZINC       | 21.25%  | 3.55%  | 23.41% | 21.27% | 5.21%  | 13.87% |
| THIAMIN    | 38.73%  | 10.97% | 11.08% | 14.82% | 2.33%  | 12.48% |
| RIBOFLAVIN | 10.33%  | 3.59%  | 3.23%  | 2.88%  | 1.40%  | 11.84% |
| NIACIN     | 32.28%  | 9.40%  | 20.12% | 3.29%  | 2.53%  | 3.60%  |
| VITAMIN B6 | 36.48%  | 4.65%  | 5.76%  | 0.68%  | 2.14%  | 10.12% |
| SELENIUM   | 31.05%  | 0.92%  | 81.20% | 22.97% | 14.25% | 7.12%  |
| COPPER     | 44.17%  | 5.1%   | 32.20% | 19.24% | 7.62%  | 29.86% |
| IRON       | 26.13%  | 2.45%  | 13.68% | 11.70% | 1.08%  | 11.58% |
| MAGNESIUM  | 55.00%  | 7.48%  | 16.00% | 15.04% | 1.66%  | 21.33% |
| MANGANESE  | 97.39%  | 6.02%  | 62.69% | 59.00% | 15.94% | 38.40% |

**EXCELLENT SOURCE** (20%+ Daily Value)

**GOOD SOURCE** (10-19% Daily Value)





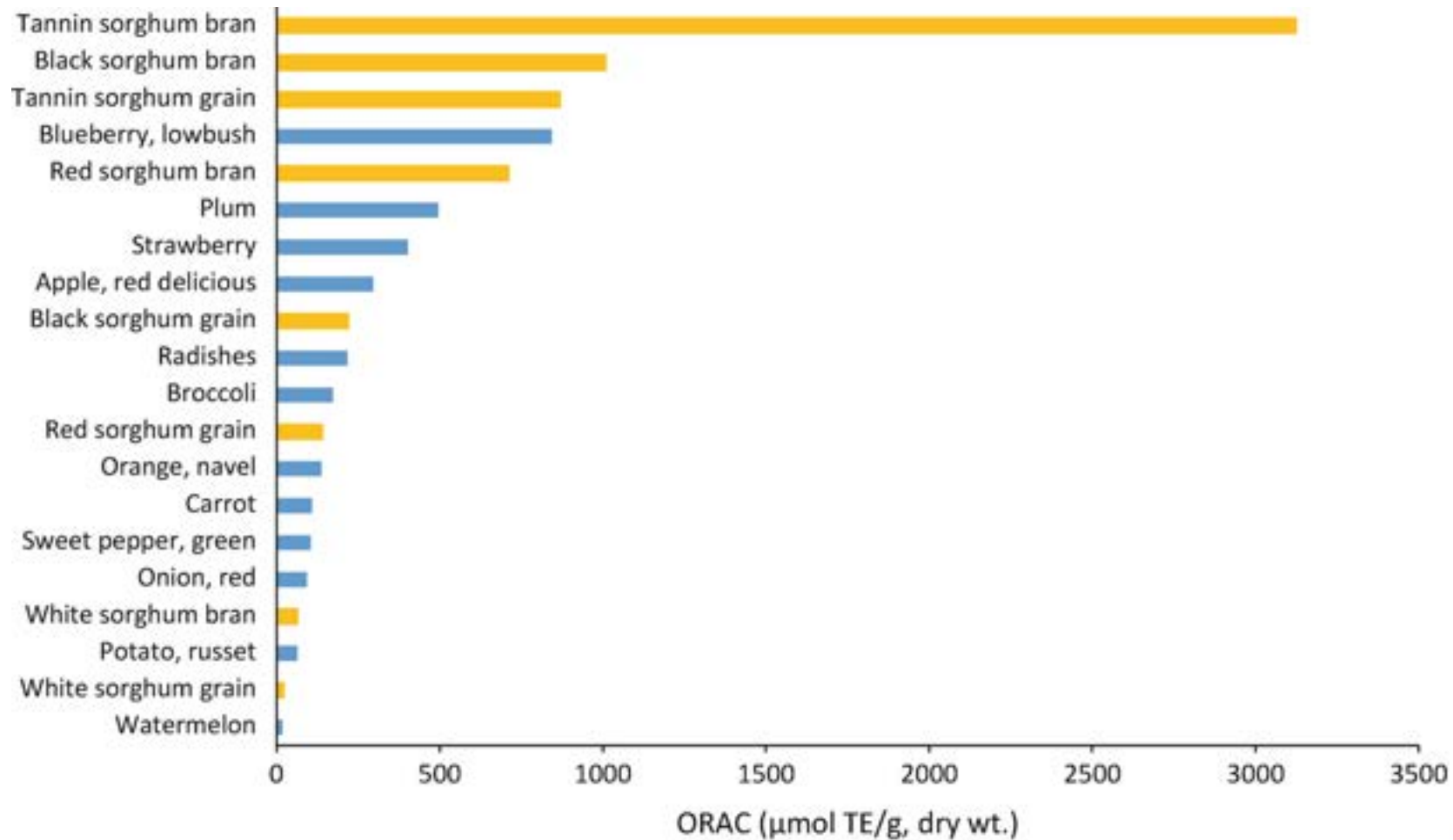
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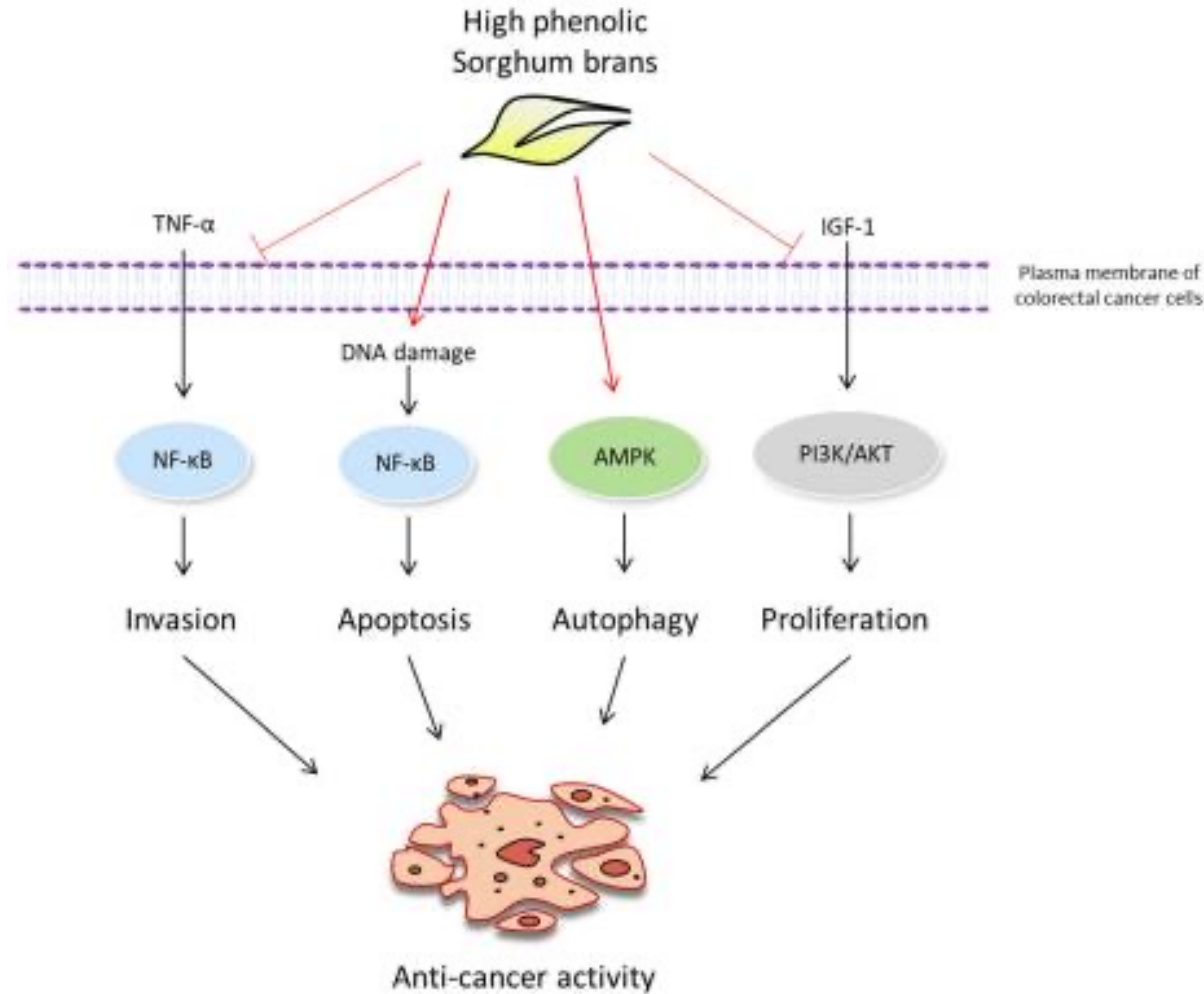
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# Sorghum & Antioxidants



# Sorghum & Cancer



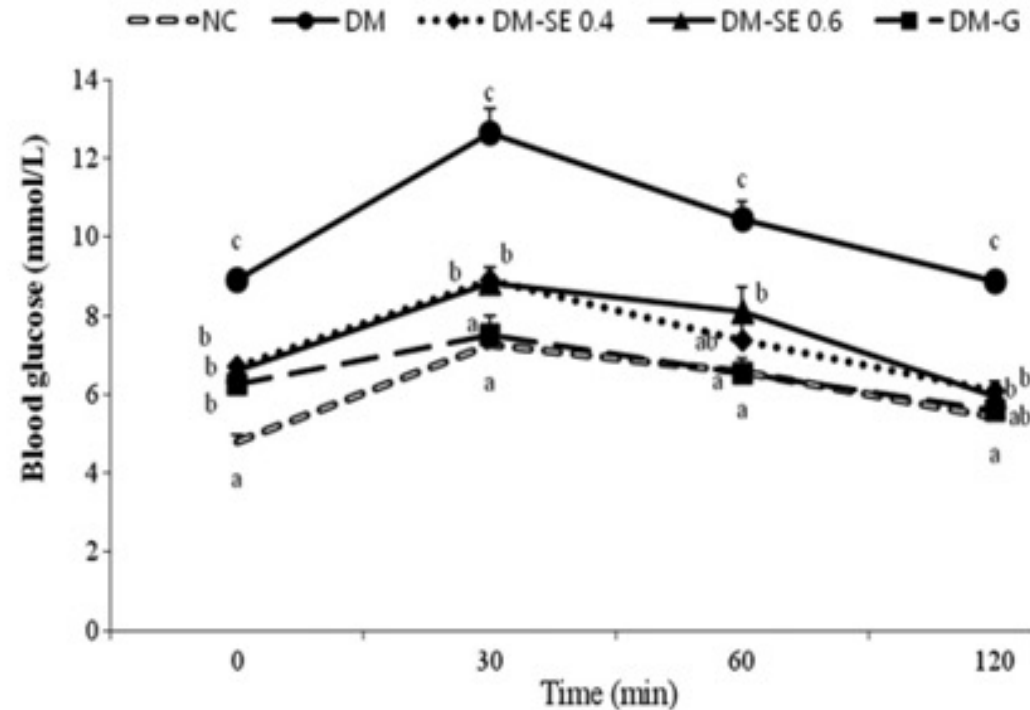
Lee SH, Lee HS, Lee J, Amarakoon D, Lou Z, Noronha LE, Herald TJ, Perumal R, Smolensky D. Polyphenol Containing Sorghum Brans Exhibit an Anti-Cancer Effect in Apc Min/+ Mice Treated with Dextran Sodium Sulfate. Int J Mol Sci. 2021 Aug 1;22(15):8286. doi: 10.3390/ijms22158286. PMID: 34361052; PMCID: PMC8347436.

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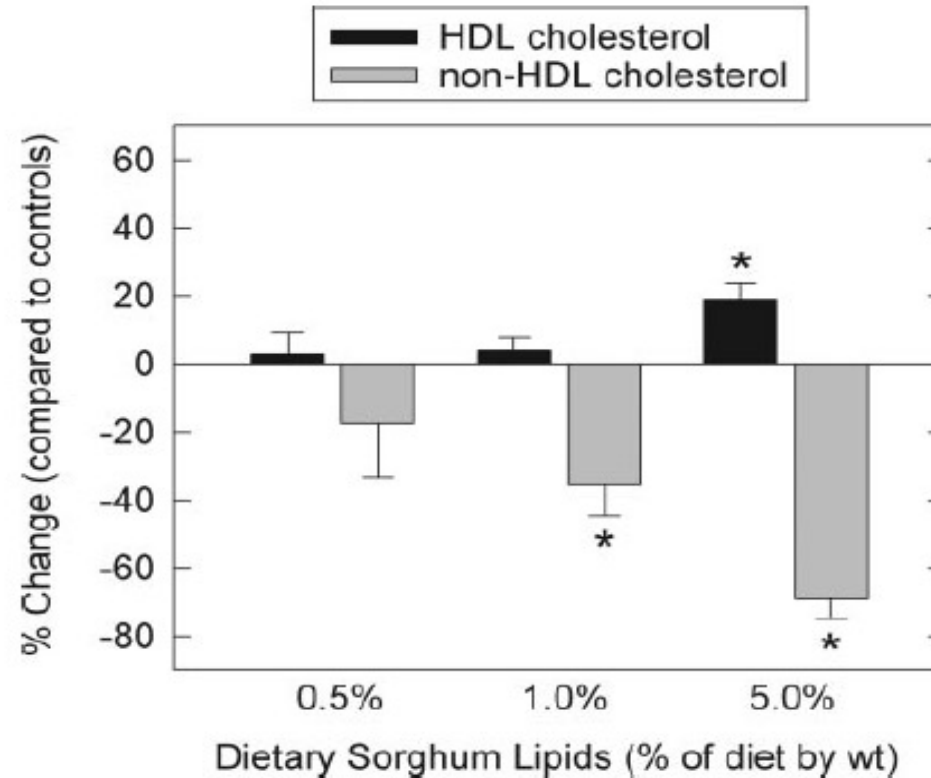
# Sorghum & Diabetes



**Figure 1** Blood glucose levels during the intraperitoneal glucose tolerance tests. NC, normal control rats administrated saline; DM, rats with diabetes mellitus administrated saline; DM-SE 0.4, rats with diabetes mellitus administrated 0.4 g/kg body weight of sorghum extract; DM-SE 0.6, rats with diabetes mellitus administrated 0.6 g/kg body weight of sorghum extract; DM-G, rats with diabetes mellitus administrated 0.7 mg/kg body weight of glibenclamide. The values are mean  $\pm$  SEM (n = 5). Values with different superscripts are significantly different at  $p < 0.05$  using ANOVA with Duncan's multiple range test.



# Sorghum & Heart Disease



**FIGURE 2** The percentage of change in plasma HDL and non-HDL cholesterol concentrations in hamsters fed 0.5, 1.0 or 5.0% grain sorghum lipids compared with controls. Values are means  $\pm$  SEM,  $n = 7-8$ . \*Different from control,  $P < 0.05$ .

# Forms

- Whole Grain
- Pearled
- Bran
- Flour
- Popped
- Flaked
- Malted
- Syrup



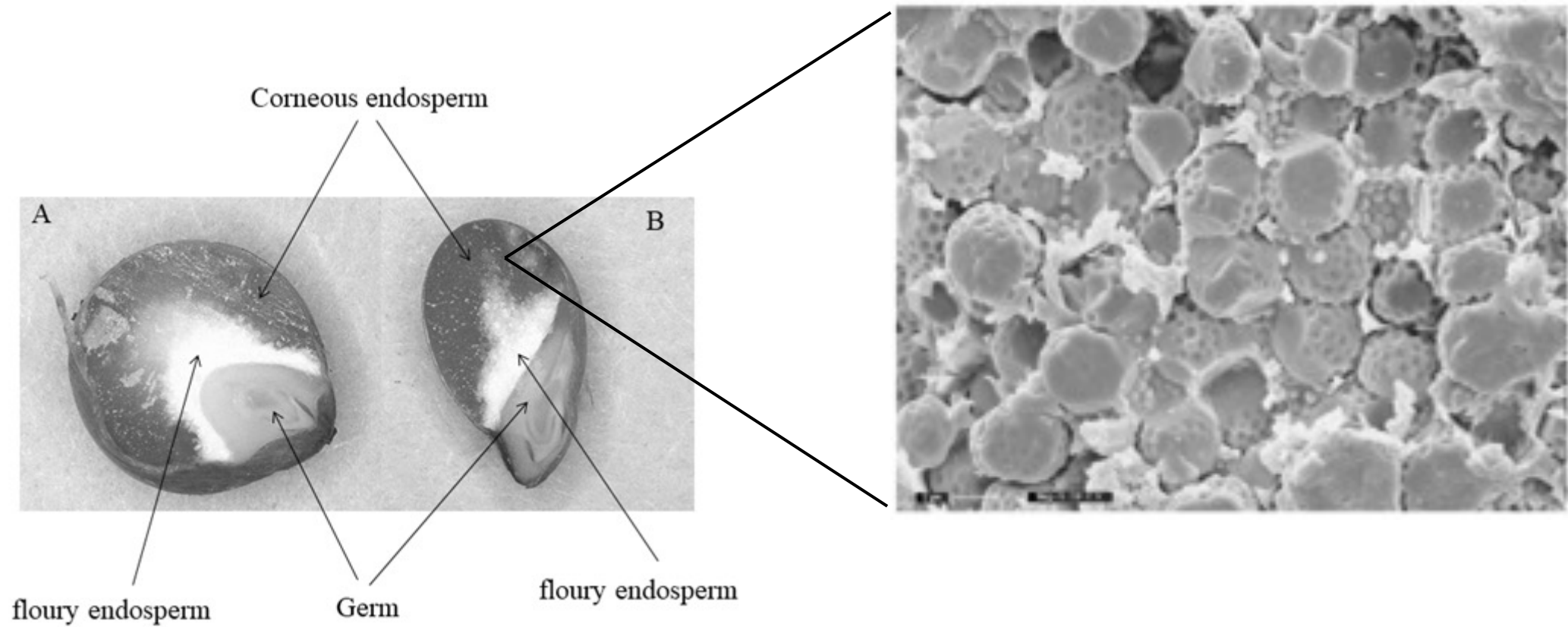
# Colors

- White
- Onyx
- Burgundy
- Hybrids





# Functionality



# Preparation: Stovetop



# Preparation: Quick Cooking





# Preparation: Slow Cooker



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# Preparation: Baked



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# Preparation: Popped



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# Recipes



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# Products



# Consumer Demand

- Antioxidant-Rich
- Plant-Based Protein
- Fiber-Rich
- Ancient Grain
- non-GMO
- Gluten-Free
- Culturally Inclusive
- Responsibly Sourced/Sustainable
- Free from Top 9 Allergens

**Nearly 80%  
Retention Rate**



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# What's Next



- K12 Schools
- FNCE
- Collaboration



# SorghumCheckoff.com



# Questions?

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