Sprouted Grains...Alive
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Buzz over Sprouted in December 2014

The New Quinoa? Sprouted Grain About to Go Mainstream

(PRWEB) December 23, 2014

Sprouted grain is about to hit the consumer mainstream, like quinoa did last year.

Americas: Bakeries are retailing sprouted grain products in the US

Panera to introduce sprouted-grain baked goods

Source: Google Trends December 2016

Slight rise in interest in sprouted bread over time

Google Searches for “sprouted bread”

Source: Google Trends December 2016
Leading sprouted bread brand has much higher interest

Source: Google Trends December 2016

Himalayan salt much higher interest than sprouted bread

Source: Google Trends December 2016
Sprouted info limited on internet by December 2016

5 Reasons to Eat Sprouted Grains - Eligible Magazine
www.eligiblemagazine.com/2015/04/10/5-reasons-to-eat-sprouted-grains/
Apr 10, 2015 - As a society that loves grain-based foods, you’re probably feeling overwhelmed and confused with the misleading information that’s out there.

10 Reasons To Eat Sprouts | Care2 Healthy Living
www.care2.com/healthy-living/10-reasons-to-eat-sprouts.html
Here are 10 reasons to eat more sprouts... During sprouting, minerals bind to protein in the seed, green, null or bean, making ... Stacy Cosner, Self-Healing Guru

Should You Be Eating Sprouted Grains? | Men's Fitness
www.mensfitness.com/nutrition/what-are-the-benefits-of-eating-sprouted-grains
But what exactly are sprouted grains, and should you make the switch ... You Be Eating Sprouted Grains? Are sprouted grains the next big thing or is what you're eating healthy enough? The 5 Foods To Avoid If You Want A Six Pack ...

Health Benefits and Risks of Sprouted Grains | Shape Magazine
Q: What are the benefits to eating sprouted foods like nuts, beans, and grains? ... a in daily exercise, if we want healthy life. Science Says It IS ...
You visited this page.

Eat Sprouted Grains For Greater Muscle Growth | Muscle & Fitness
www.muscleandfitness.com/nutrition/healthy-recipes/eat-sprouted-grains
Sprouting your grains unlock their full potential and yum... ... $ Good Habbits to Eat Your Carbs | Sausage Grilled Sausages and Meals to Make this Season ...

Sprouted vegetables have more web coverage than sprouted grains

Sprouted Grains

Radish

Mung Bean

Alfalfa

Broccoli

Lower

Relative Web Visibility

Higher

Source: Custom web analysis by First Sight Group, Spring 2015
Conclusion so far...

• Consumer interest and curiosity is low
• Consumer knowledge is low

• So….. Why the burst of interest among food developers and ingredient suppliers in 2014-2015?

Sprouted interest tied to enlightened eating

Emotional drivers:

1. New Beginnings
2. Belonging
3. Purity

Source: Custom web analysis by First Sight Group, Spring 2015
Desire for the Garden of Eden among enlightened eaters

Source: Custom web analysis by First Sight Group, Spring 2015

Sprouted Means Alive
Sprouted means Resilience
Leading sprouted bread brand leverages spiritual themes

- Dove of peace graphic
- Sunrise graphic
- Bible verse references
- “25 years to become an overnight sensation”

- Other bread brands leverage purity or spiritual words or symbols too.

Retail sales doing well

- $114 million in retail sales of grain-related products making a “sprouted” claim

- 75% of sales are bread.
Concept test to assess purchase interest

New Sprouted Grain Bread
• Honest nutrition
• Pure delicious flavor
• Wholesome & good for you

Available in all grocery stores
$3.49 for 20 oz. loaf

Source: Ardent Mills Concept Test June 2015

Strong purchase appeal among enlightened eaters

% Definitely/Probably Would Buy Sprouted Grain Bread

- Total Sample: 40%
- Enlightened Eaters: 52%
- Influencers: 71%

6% of total consumers are “Influencers”
20% are enlightened, but not influencer

Source: Ardent Mills Concept Test June 2015
Reasons were vague
Among enlightened eaters who said “Definitely Would Buy”...

“Sounds good”
“Sounds healthy”
“Looks delicious”
“Seems good for you”

Only 3 people mentioned the word “sprouted” in their reasons

Sprouted Grains... alive
Promise of new beginnings
Shows resilience after tough times
- Purity of springtime water, air, sunshine
- Suggests spiritualism

Strongest appeal is among enlightened eaters
Sprouted Grains... Alive and Well

Ardent Mills LLC
Sumana Bell PhD
Principal Scientist

The motivation

Nutrition
- Digestive advantage: Sprouted grains > whole grains
- Carbs and gluten levels: Less carb, low gluten and 3x soluble fiber
- Low phytic acid: Increased bioavailability of minerals
- Antioxidants: More polyphenols
- Cholesterol levels: “Healthy levels” of cholesterol.
- Blood sugar assistance: “Quite gentle” to the body’s blood sugar
- Increased vitamins: Folate, niacin
- Essential amino acid: Lysine

Functional (wheat)
- Taste: Sweeter
- Dough formulations: Less gluten, more water

Energy
- Satiety
- Reduced risk for CVD

Anti-inflammatory
- Minerals (bone health)
- Prebiotics (gut health)
Sprouting 101

- The trigger - heat, moisture, light
- Gibberellin is synthesized; moves from embryo to aleurone layer, triggers formation of enzymes
  - Amylolytic enzymes ---- starch into sugars
  - Proteolytic " ---- proteins into amino acids
  - Cytolytic " ---- breakdown of cell walls
- Conversion of mass into shoots / rootlets

Relative amounts of nutrients rise as starch and protein break down

The nutrients and the anti-nutrients in wheat

- Starchy endosperm (80-85%) protein, starch, & very few fibers (2%)
- Aleurone layer (6-9%) Amylopectin, starch, sterol/furfoloses
- Germ (3%) Lipids, plant sterols, antioxidants
- Outer pericarp (3-5%) Insoluble dietary fiber (xylan, cellulose, lignin)
- Inner pericarp

The packing of nutrients in wheat

The minerals
(Ca, Fe, Na, K, Mg, P, Cu, Mn, Zn)

Yellow stain = starch

Red stain = protein

De Brier et al., 2016. Plant, Cell and Environment

Faltermeier et al. (2015)

Dry
8 hrs soaking
24 hrs germination

57 hrs germ
77 hrs germ
The time scale of change in nutrient amounts

Germination time (hrs)

Value units

Folate
Sol fiber
alpha-tocopherol
Total anti-oxidant capacity
Niacin

Germination time (hrs)

% Increase

Dias (includes 2 days of steeping)

Essential amino acids


Tkachuk, R., (1979), J Sci Food Agric 30 53-58
Time scale of change in anti-nutrient


Long germination is critical for pseudo-cereals also


Omary et al, (2012), car chem., 89(1) 1-14

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Baking with sprouted flours

Sprouted flours = low falling numbers

Fleming et al. (1960), car chem., 37 363-370
Bell, S. unpublished data (2016)

Long germination = more sugars

Bell, S. unpublished data 2016
Protein and starch after 6 days of germination

The dilemma with falling number – a range or a number?

**FN** = time taken by a stirrer to travel a set distance in a heated slurry of flour

- High FN = high viscosity slurry = low breakdown of starch from enzyme activities
- Industry practice = FN > 300 (bread)

Reports

- Moot and Every (1990): **Acceptable quality** (not sticky crumb): FN range = 150 to 400+
- Rai et al. (2016): **High quality breads** : LMA wheat flours, FN range= 50 – 120
- Bell (2015 unpublished): **Acceptable** test bakes with sprouted flours; FN range = 90 – 300
Is it time for Essene bread?

Sprouted Grain Essene Bread

No yeast, no filler, no kneading, no rising time... Essene bread is the essence of raw, whole-grain goodness. This only thing that takes some time is the grain sprouting process. But once you establish the right conditions with a large jar and water-filled room, Mother Nature does the rest of the work. Then, all you have to do is blend and bake.

Sprouting gives a spectrum of values and options for innovation!

Functional advantages

Grains

Value added sugars
Thank You!

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