

Wheat Fiber for Rural Wealth and Health Roundtable, 2024

Business Benefits for Farmers, Go-to-Market Strategy, and Baking
Industry Integration

Dr. Rod Wallace
Foundation for Innovation in Healthy Food

November 7, 2024

Benefits for Farmers

Overview



- Is There Money Available for Commodity Nutrients?
- What is the Business Challenge for Wheat?
- Can we Move the Needle for Wheat?

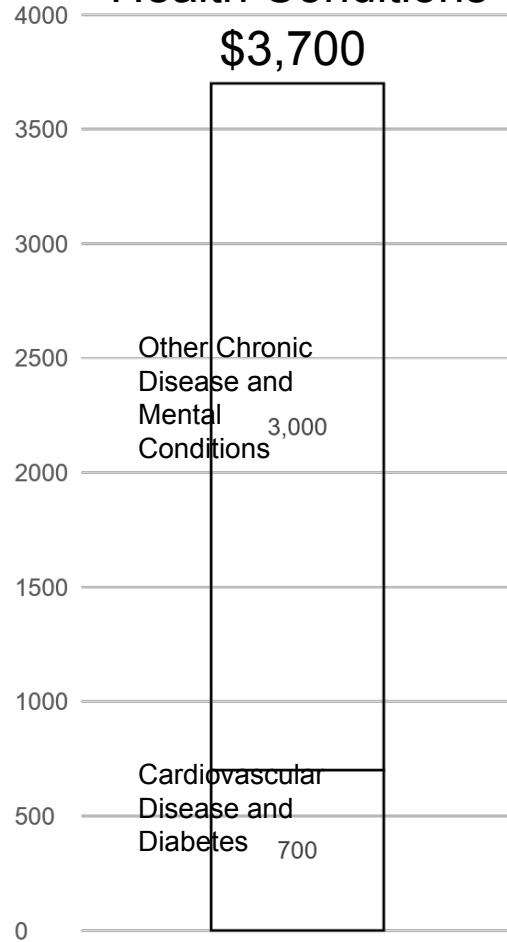
Where's the Money?

Health is Larger than Fuels, which is Larger than Farm



Chronic Disease and Mental Health Conditions

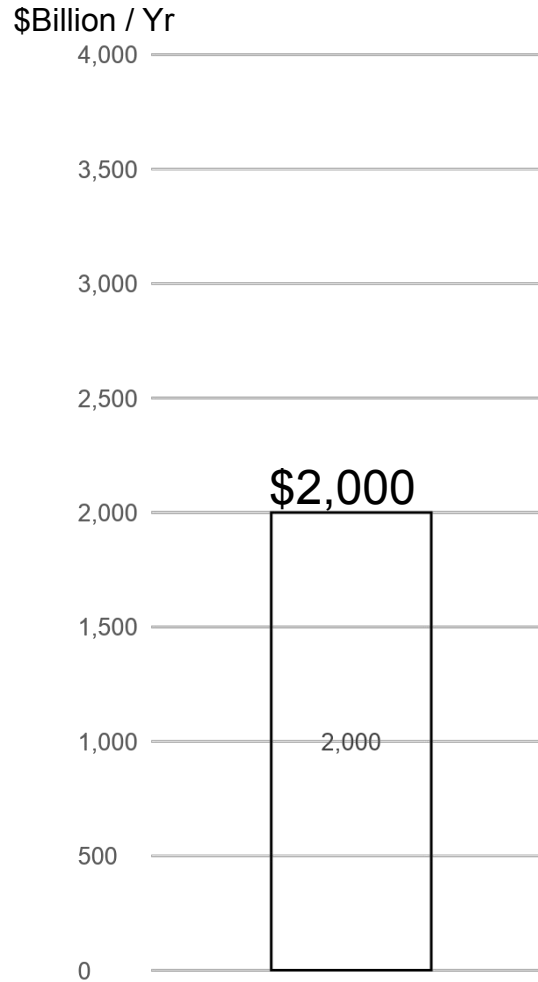
\$Billion / Yr



<https://highmark.com/cost-of-chronic-health-conditions>

Carbon Fuels

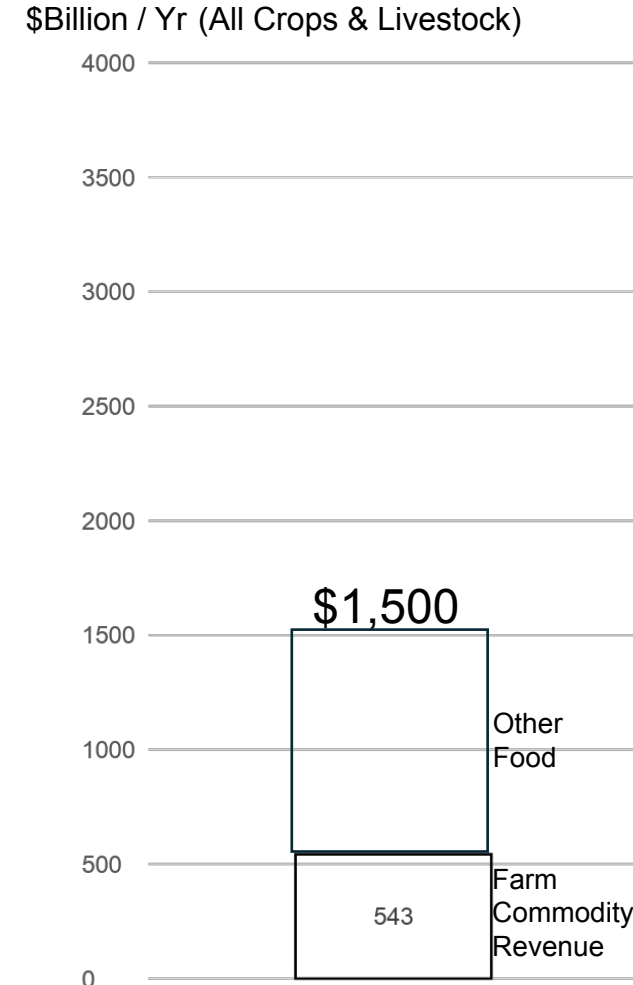
\$Billion / Yr



<https://www.precedenceresearch.com/fossil-fuels-market>

Farming

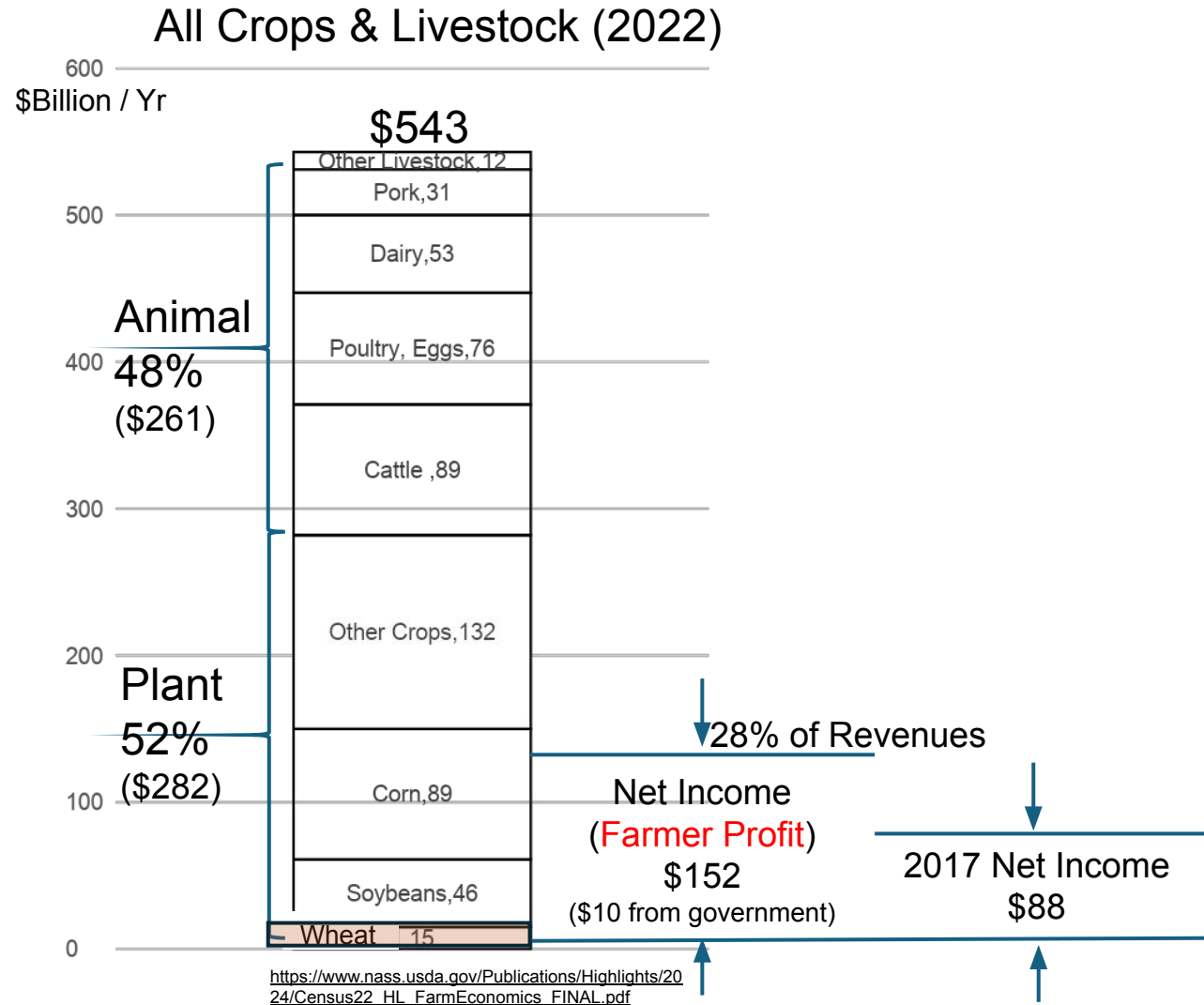
\$Billion / Yr (All Crops & Livestock)



https://www.nass.usda.gov/Publications/Highlights/2024/Census22_HL_FarmEconomics_FINAL.pdf

Where's the Money

Farm Profit Averaged 28% of Revenue in 2022

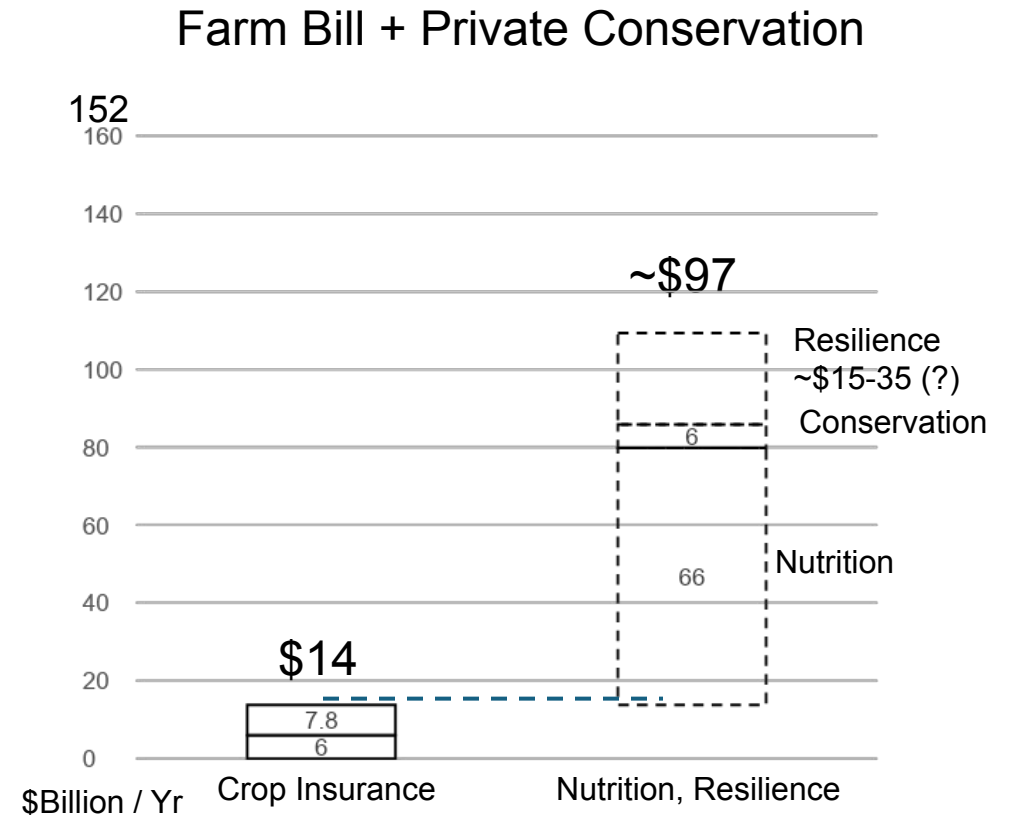
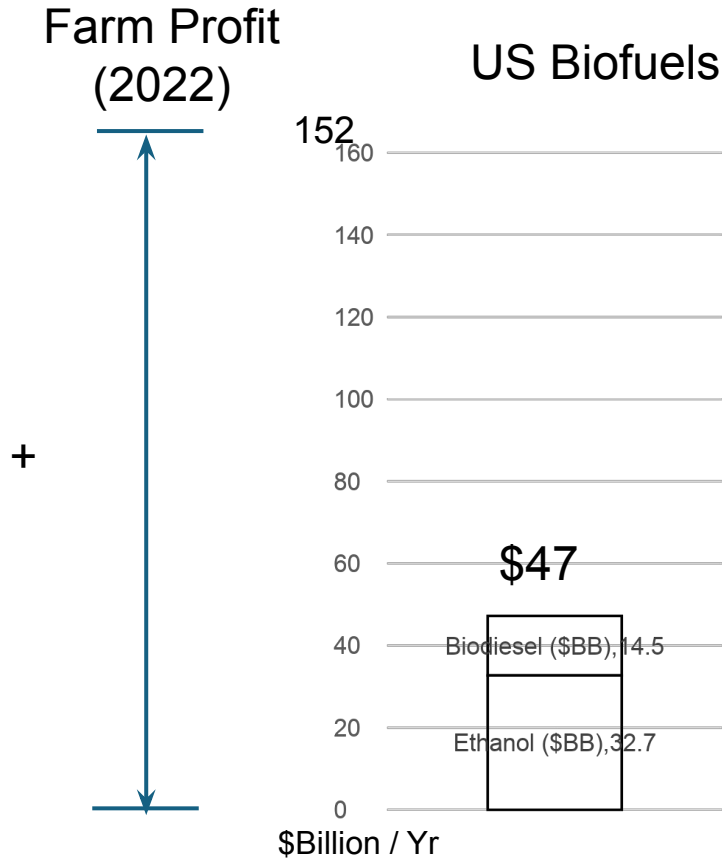


Where's More Money?

There Appears to Be Enough Money in Nutrition and Resilience to Materially Benefit Farm Profit



Corporate Commitments, Targeted Supply Chains, and Traditional Products



<https://ethanolrfa.org/media-and-news/category/news-releases/article/2024/02/study-ethanol-industry-generated-54-billion-in-gdp-supported-400-000-jobs-in-2023>
<https://www.imarcgroup.com/united-states-biodiesel-market#:~:text=Market%20Overview%3A.5.1%25%20during%202024%2D2032.>

<https://sustainableagriculture.net/our-work/campaigns/fbcampaign/what-is-the-farm-bill/#how-much>
<https://aqfundernews.com/regenerative-agriculture-investing#:~:text=This%20week%2C%20a%20new%20report%2C%20cleverly%20called%20Soil.%2447.5%20billion%2C%20and%20that%20s%20just%20in%20the%20US.>

Benefits for Farmers

Overview



- Is There Money Available for Commodity Nutrients?
- What is the Business Challenge for Wheat?
- Can we Move the Needle for Wheat?

Financial Task for Wheat

A Critical Crop



- Plays an important role in the crop rotation on many farms
- Financially unattractive vs other grains
- America's Favorite Food
- Largest source of dietary fiber in American diets (Over 1/3 of total)
- Concept: Increase financial attraction by helping fight chronic disease by increasing fiber content.



Increased-Fiber Hard Wheat

A Tried-and-True Commodity Opportunity



Handling Targets

High-Yield

No loss in yield vs other varieties.
No farming impact.

High-Quality

Delivers high-quality baked goods.

Commodity

Commodity hard wheat, just like any other.
Fine to mix it with any other.

Entrepreneurial options are identity preserved.

Benefits for Farmers

Overview



- Is There Money Available for Commodity Nutrients?
- What is the Business Challenge for Wheat?
- Can we Move the Needle for Wheat?

Increased-Fiber Hard Wheat

A Tried-and-True Farming Opportunity



Revenue Targets

Farmer Value	Consistently more profit from wheat
Works for Farmers	Revenues that work in farm businesses
Common Sense	Government money invested in farmers more than paid back by healthcare savings; work for other stakeholders.
Commodity Opportunities	Grow it. (Hedge it.) Sell it.
Entrepreneurial Opportunities	Potential to work with the supply chain to deliver identity preserved wheat

The \$25/ Acre Opportunity

Increased Fiber Wheat Financial Illustration



	\$/ Acre
<ul style="list-style-type: none">• 2029 Farm Bill Health Incentive : Reimbursed certified seed ‘+’<ul style="list-style-type: none">+ Switch Bin to Certified Seed*	\$22.50 \$ 6.75
<ul style="list-style-type: none">• Farm Resilience Financial Assistance Program: conservation crop rotations to foster ecosystem services and soil health, that would support wheat and increased fiber wheat<ul style="list-style-type: none">+ soy from adding wheat (3 bu)+ corn from adding wheat (18 bu)	\$5-20 \$72 \$30
<ul style="list-style-type: none">• Entrepreneurial Option: ‘Grow Premium’ for farmers who participate in programs to identity preserve increased fiber wheat (@\$0.30/ Bu)	\$14.00
<ul style="list-style-type: none">• Progress step after step	TBD

• <https://cropwatch.unl.edu/2017/making-case-certified-wheat-seed#:~:text=Yield%20Advantage,to%20the%20most%20recent%20genetics.>



We want your input.

Please raise questions and discuss. What do you think about:

- Which parts of the farmers' business value do you find most and least attractive? Why?
- Do you find this business value attractive overall?
- If this isn't enough, what would it take?

Please discuss questions as partners, and one of you complete the survey:



- What would be the 'right way' to communicate to farmers about the Coalition for Grain Fiber and other increased-nutrient efforts?
- What would be the 'wrong way' to communicate and that we should avoid?

Value Creation Opportunity Appears Strong

A Step in the Right Direction for Billions of People



YEAR AND BENEFIT	YEAR 1	2	3	4	5	6	7	8	TOTAL**
% of US Crop High-Fiber (50% delivered to US)	1.5%	20%	30%	40%	50%	60%	70%	70%	
Farmers' Financial Incentive (\$MM)	(62)	(272)	(272)	(362)	(453)	(544)	(634)	(634)	-3,233

*Actual reduction will depend on populations' actual diets

** 13-year investment and farmers' incentives vs healthcare cost savings and value of lives saved.

Value Creation Opportunity Appears Strong

A Step in the Right Direction for Billions of People



YEAR AND BENEFIT	YEAR 1	2	3	4	5	6	7	8	TOTAL
% of US Crop High-Fiber (50% delivered to US)	1.5%	20%	30%	40%	50%	60%	70%	70%	
Farmers' Financial Incentive (\$MM)	(62)	(272)	(272)	(362)	(453)	(544)	(634)	(634)	-3,233

*Actual reduction will depend on populations' actual diets

** 13-year investment and farmers' incentives vs healthcare cost savings and value of lives saved.

Increased Fiber Wheat Financial Opportunity

An Opportunity to Sharpen Your Pencils (Illustration)



	\$/ Acre	% of Wheat Price (\$6/Bu)
• Wheat commodity 48 BU/ Acre * \$6	\$288.00	100%
• Health Policy Incentive: Reimbursed seed '+'	\$22.50	8%
• Switch from Bin Seed to Certified Seed*	\$ 6.75	2%
• Farm Resilience Financial Assistance Programs: government, government/ grant, and private rotational cropping systems (conservation crop rotations) to foster ecosystem services and soil health, that would support wheat and increased-fiber wheat	\$12.20 Equip*	4%
• + soy yield from incorporating wheat in rotation (3 bu soy @ \$10) + corn yield from incorporating wheat in rotation (18 bu corn @ \$4)	\$ 5.00 CSP**	2%
	\$72.00	25%
	\$30.00	10%
• 'Grow Premium' for farmers who choose to participate in programs to identity preserve increased fiber wheat @\$0.30/ Bu)	\$14.00	5%

• <https://cropwatch.unl.edu/2017/making-case-certified-wheat-seed#:~:text=Yield%20Advantage,to%20the%20most%20recent%20genetics>.

• Equip for conservation crop rotation, adding wheat into corn-soy rotation

** CSP (FY24) for conservation crop rotation enhancement (e.g., adding wheat into corn / soy

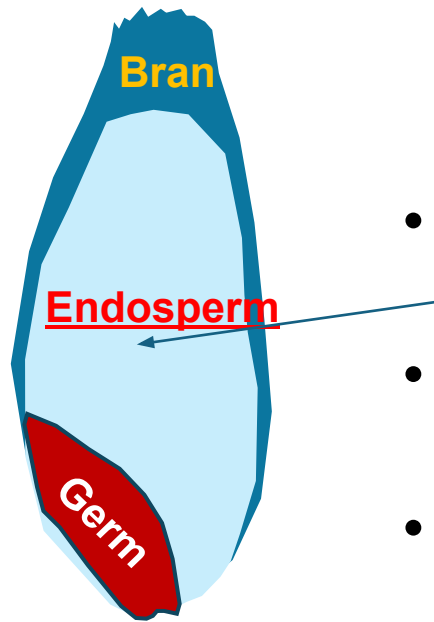
c. Partnerships for Climate-Smart Commodities Projects (lookup: 328 Conservation Crop Rotation) - [Workbook: Partnerships For Climate-Smart Commodities](#)

d. Practical Farmers of Iowa – Small Grains Cost-Share - \$20/acre (does not include organically-raised wheat) - [Small Grains Cost-Share - Practical Farmers of Iowa](#)

Average Farm Profit: 16-28%

Increasing Fiber in the Wheat Grain

Naturally Occurring in Some Global Commercial W



- Increased fiber for both white flour and whole wheat
- Non-GMO, no regulatory hurdles
- Naturally occurring today in commercial wheats in the UK, France, and China

Coalition for Grain Fiber Approach

Natural, Innovative, Healthy Profit from Commodity Ingredient



Naturally deliver **public-health** focused science, at scale.

Enhance Value of Pre-Competitive Collaboration in:



High-quality, non-GMO, increased fiber commercial wheat varieties:

85% chance of success
We expect adopting increased-fiber varieties will reduce populations' disease risks.

Coordinated Science

Plant Breeding

End-Use Quality

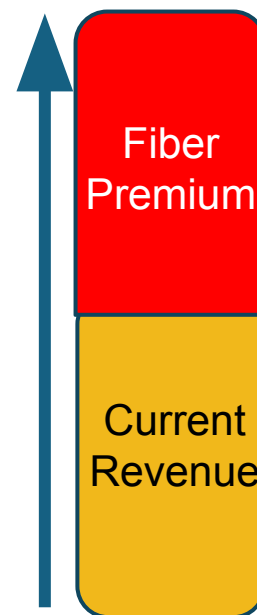
Nutrition / Health

Socio-Economics

* Identity preserved soft wheat opportunities may also exist

Align financial incentives with **NO** change in consumer price

Healthcare Savings Fund Financial Rewards for Prevention: \$\$\$ Payment:



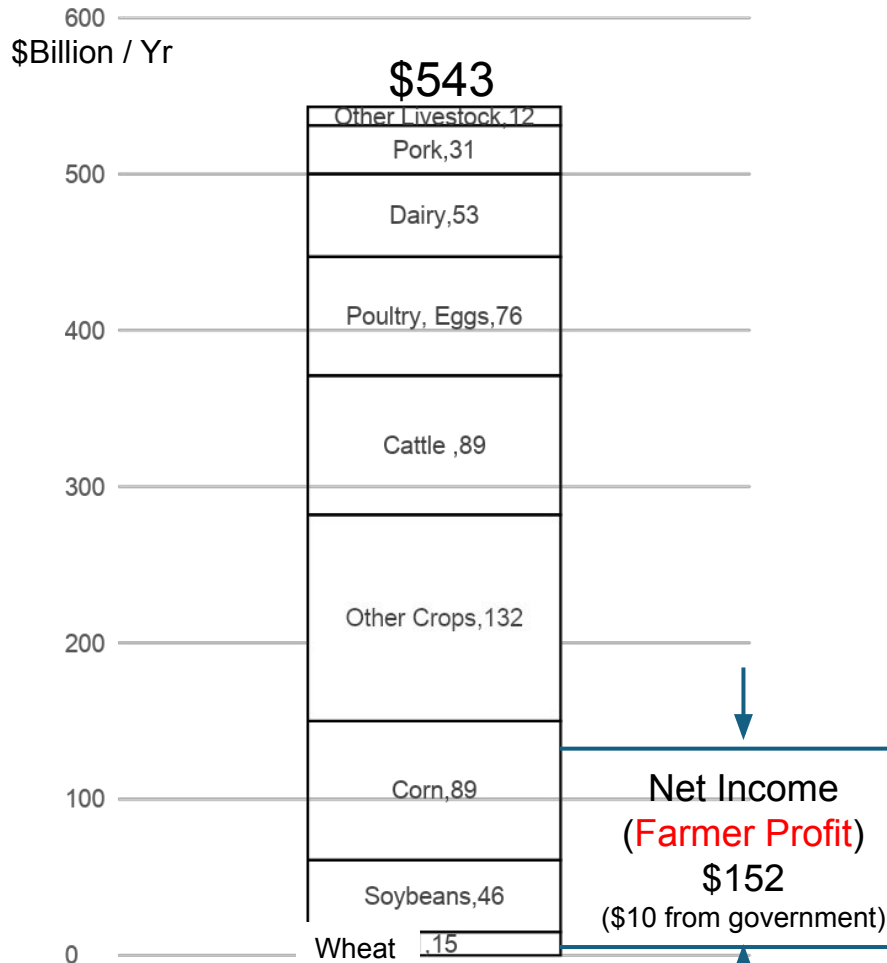
Government financially rewards farmers for growing increased-fiber wheat as public health strategy
Blended into commodity hard wheat* supply chain at current consumer prices

Potentially very high Return on investment

Biofuels, Conservation and Nutrition Are Already Important Relative to Farm Profit

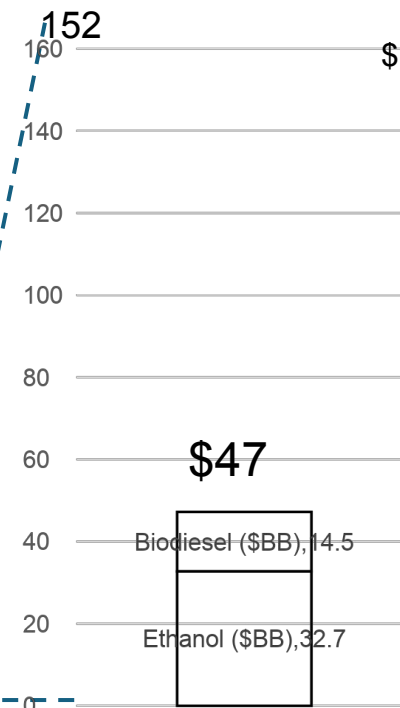


All Crops & Livestock (2022)

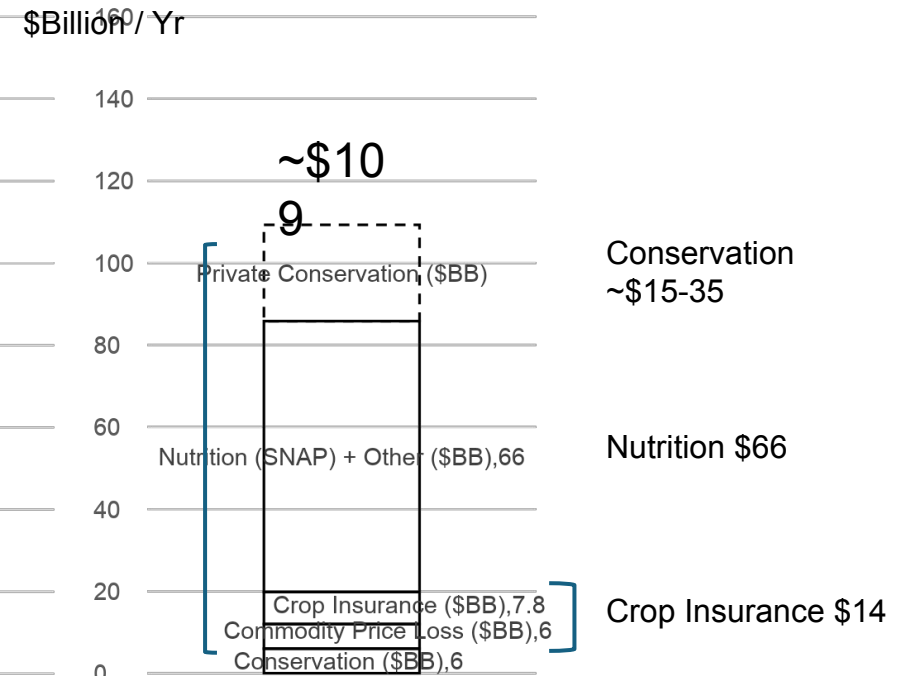


https://www.nass.usda.gov/Publications/Highlights/2024/Census22_HL_FarmEconomics_FINAL.pdf

US Biofuels



Farm Bill + Private Conservation



Coalition for Grain Fiber

Making a Difference: Natural, Innovative, Healthy, Profitable



Align incentives for public health



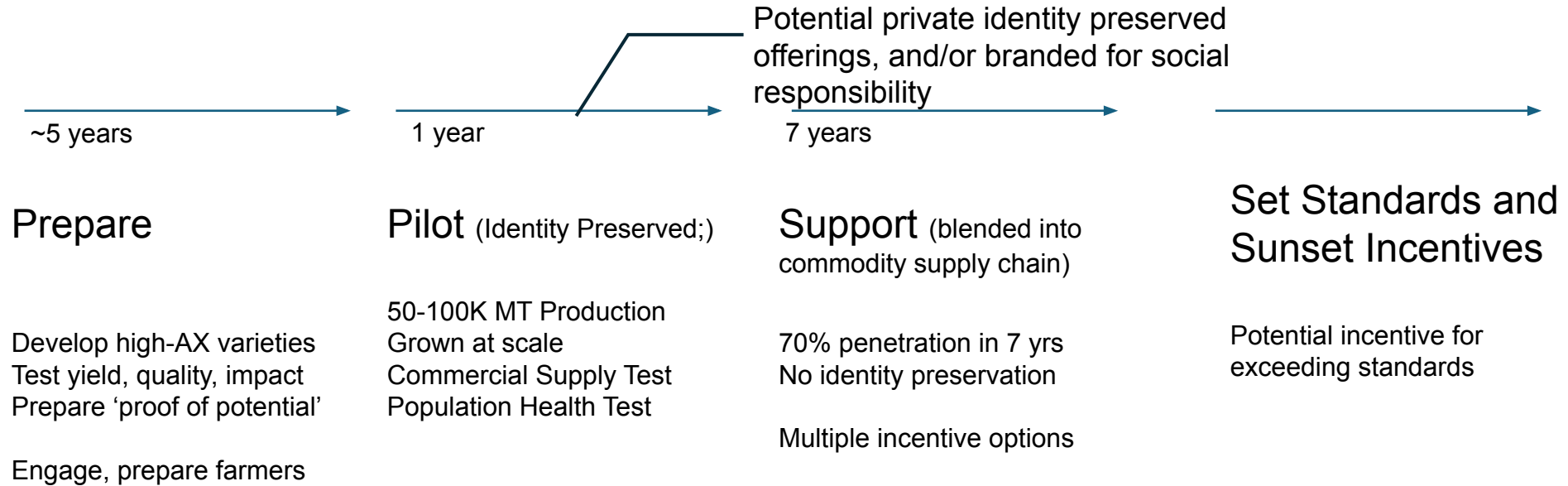
* Hard wheat commodity supply; soft wheat opportunities may also be promising

Increasing Arabinoxylan in Wheat

Hard Wheat Overview



1st Generation Increased Arabinoxylan Fiber Wheat



2nd Generation Increased Fiber Wheat Preparing

Based on scientist innovation and evolving Diet.

Coalition for Grain Fiber

2024-25 Scientist and Stakeholder Engagement



Wheat Fiber for Rural Wealth and Health



**Nov 7, '24
Nebraska**



What We Can Learn: Successes, Failures in Traits for Consumers, Processing



**Feb 18 '25
Pre-WQC**

**Also: 2 American Bakers Association Meetings
Soft Wheat Quality Council**



Grain Fiber to Combat Health Disparities in African American Communities (with Historically Black Colleges and Universities)



**Last week Apr '25
Atlanta, GA**



Nutritionists, Dieticians and Public Health



**Jun TBD '25
Pennsylvania**

Grain Fiber for Rural Health and Wealth

Why a Wheat Fiber for Rural Wealth and Health in Nebraska?



We aim to build alignment around a clear plan to enhance rural wealth and health by connecting agriculture and public health.

Why Nebraska?

- #1 ag economy
- Political leaders dedicated to agricultural interests and helping people live better lives
- University of Nebraska thought leadership
- **Nebraska Wheat's commitment to innovatively developing wheat markets**

Wheat Fiber for Rural Wealth and Health

Overview



Group Session

- This Nebraska roundtable is set to deliver alignment and a pragmatic plan that builds a new and powerful relationship between agriculture and health

Farmer Breakout

How can we increase wheat's financial return, building to broader farm benefits?

- What is the right path forward?

Public Health Breakout

How can we build the ag-based health and resilience opportunity?

Coalition for Grain Fiber: We're Building a Strong Team



Seasoned
Foundation
Team



Rick Alcantara, MA
Principal, Rick Alcantara Consulting,
Executive Communications Director,
Princeton Strategic Communications



David Henkin
Former Chief Innovation Officer,
Vertex Inc.



James Barnes
Founder of JB Innovation; Former Chief
Relationship Officer Vanguard
Charitable Endowment Program



Gerry Lantz, MA
Founder of Stories that Work; honed
marketing tools at three of top five
global ad agencies



Anthony Holland
Vice President of SAP Partner Solutions
and Sales Engineering, Synactive Inc.



Jenny Bartoy
Literary Editor



Vibhat Nair, PhD
CEO nonprofit Magnolia Impact



Rod Wallace, PhD
Business Strategist and



Sean Finnie, PhD
Senior Manager, Research and
Development at Bay State Milling



HT Fish, PhD
Former President Cargill Health
and Food Technologies Business,
and Managing Director Cargill
Strategy and Business
Development



Royce Schaneman
Executive Director,
Nebraska Wheat



Charlie Vogel
Chief Executive Officer,
Minnesota Wheat



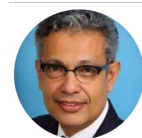
Claudia Carter, MS
Executive Director, California Wheat



Mike Moran
Executive Director,



Jayne Bock, PhD
Technical Director,



Fernando Arias, MBA
Former Commercial VP, NA at



Nebraska Extension
University of Nebraska, Lincoln;
Institute of Agriculture and Natural



Tanya Jeradechachai
Vice President of R&D,
MGP Ingredients



Payam Vahmani, PhD
Assistant Professor,
University of California Davis



David Holding, PhD
Professor and Associate Department
Head, Department of Agronomy and

Stakeholder
r Advisors

World-Class Science Team Science Advisory Committee



Stephen Baenziger, PhD
Emeritus Professor and Wheat
Growers Presidential
Chair, University of Nebraska



Barbara Schneeman, PhD
Emeritus Professor, University of
California, Davis Former Director of
the Office of Nutrition, Labeling, and
Dietary Supplements, US FDA



William Wilson, PhD
University Distinguished Professor,
North Dakota State University



Ed Souza, PhD
Research Consultant, Former Global Director
of Wheat Breeding, Bayer, and Director of a
USDA Wheat Quality Laboratory



Andrew Benson, PhD
Food for Health Presidential Chair
and Director, Nebraska Food for
Health Center WW Marshall
Distinguished Professor of
Biotechnology, University of
Nebraska, Lincoln



Peter Shewry, PhD
Former Assistant Director,
Rothamsted Research



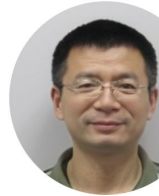
Jennifer Yates, PhD
Wheat Breeding Lead, Bayer Crop
Science



Margaret R. Bath, PhD
Chair, CIMMYT Board of Trustees
and Former Chief Technology Officer,
Kellogg Company



Jan Delcour, PhD
Professor Emeritus, KU Leuven, and
Chairman of the Leuven Food Science
and Nutrition Research Centre
(LForCe)



Bin Zhao, PhD
Senior Principal Scientist, Grupo Bimbo

Coalition for Grain Fiber: We're Building a Strong Team

World-Class Science Team



Katherine Fritz, PhD
Science Team Lead, Plant
Essential Lead



Marie Rita Bibe, PhD
Science Team Co-Lead, End-use
Quality Lead



Kimberly Garland-Campbell, PhD
Plant Breeding Team Co-Lead



Devin Ross, PhD
Nutrition / Health Team Lead



Sean Finnie, PhD
Director, USDA Western Wheat Quality
Laboratory

Leaders

Team



Jiali Chen, PhD
Professor, Wheat Research
Center, University of Idaho



Robert Demetri, PhD
Professor of Plant Breeding and
Genetics,
Oregon State University



Yong-Cheng Shi, PhD
Professor, Grain Science and Industry,
Kansas State University



Alicia Khaman, PhD
Research Manager, USDA
Western Wheat Quality Lab



Randy Furbush, PhD
Professor, Thomas S. Mock
Endowed Chair, Washington
State University



Michael Pumphrey, PhD
U.S. Wheat Endowed Chair of
Spring Wheat Breeding and
Genetics,
Washington State University



Brian Walker
Former Director, Technical Sales,
Miller Milling, Auburn Hills,
Michigan



Joshua Werning, PhD
Small Grains Extension
Professor,
University of Minnesota



Aaron Clanton, MBA
Bakers National Education
Foundation Executive,
Kansas State University



Brittany Hazard, PhD
Research Leader,
Grainline Institute Development
(GIK)



Elise Kahle, PhD
Assistant Professor,
Kansas State University



Jorge Dubrovsky, PhD
Distinguished Professor,
University of California, Davis



Alison Longgrass, PhD
Senior Lead Global
Improvement, Sustainable Soils
and Ecology, Nutrena
Networks



Simon Griffin, PhD
Group Leader,
Developing Future World
Professionals,
University of Nebraska Medical
Center



**Corinne K. Harman, PhD, RD,
LMNT, FANS**
Professor,
University of Nebraska Medical
Center



Sarah Grimes, PhD
Professor and Head of the
Department of
Food Science at Park
University



Clay Smith, PhD
Professor,
The Ohio State University



Guorong Zhang, PhD
Professor,
Kansas State University



Mark Somella, PhD
Professor,
Cornell University



Ernst Conzel, PhD
World Grains Clinic in
Zagreb,
Bavarian State University



Melissa Nohmaru, PhD
Researcher in the Sector,
The Ohio State University



Rachel Schindel, PhD
Assistant Professor,
University of Kentucky



Margaret Kruse, PhD
Senior Lecturer,
Utah State University



Noah Davis, PhD
Senior Lecturer,
Louisiana State University



George Anner, PhD
Assistant Professor, General Mills
Endowed Professor in Cereal
Chemistry and Technology, University
of Minnesota



Joanne Slavin, PhD
Professor of Food Science and
Nutrition, University of Minnesota



Bin Zhao, PhD
Senior Principal Scientist,
Grain Binco



Therese Narzikul
Professor of Practice in Systems,
Thinking and Leadership, Wisconsin
University



Eric Olson, PhD
Associate Professor,
Michigan State University



Jessica Rutkowski, PhD
Assistant Professor,
University of Illinois



Serik Selgal, PhD
Associate Professor,
South Dakota State University



Gideon Marik, PhD
Professor,
North Dakota State University



Karl Skovik, PhD
Professor,
South Dakota State University



Vijay Thiruv, PhD
Associate Professor,
University of Maryland



Jason Cook, PhD
Assistant Professor,
Nebraska State University



Jim Anderson, PhD
Professor,
University of Wisconsin



Amir Ibrahim, PhD
Regional Professor,
Texas A&M University



Jackie Paddock, PhD
Regional Professor,
Texas A&M University



Shuyu Liu, PhD
Professor,
Texas A&M University



Jayson Lusk, PhD
Distinguished Professor and
Head of Agricultural Economics
Department



Edward Deehan, PhD, RD
Assistant Professor,
University of Nebraska, Lincoln



Andrew Ross, PhD
Professor,
Oregon State University



Nikayla Strauss, PhD
Product Development Specialist,
Bayer U.S. - Crop Science

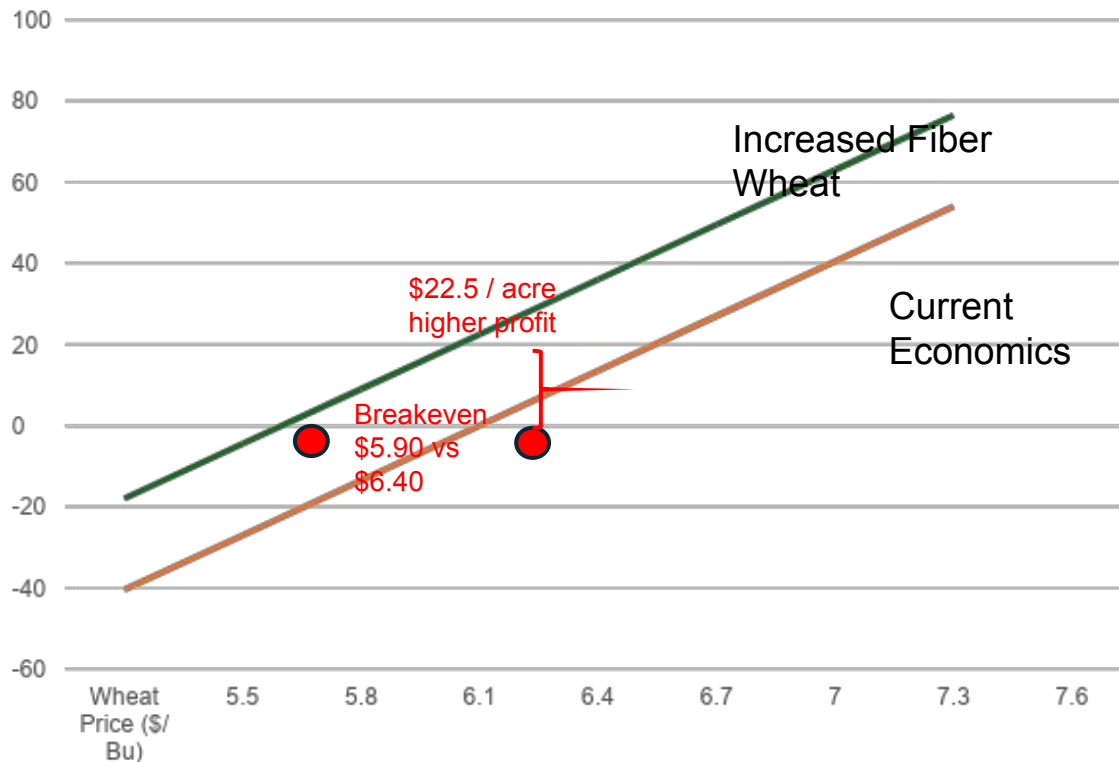


**Mariah Jackson, PhD, RDN,
LMNT**
Assistant Professor, Department of
Medical Sciences, University of
Arkansas Medical Center

Biofuels, Conservation and Nutrition Are Already Important Relative to Farm Profit



Illustrative Wheat Profit with 45 Bu / Acre Wheat



Based on:
<https://agrillife.org/agecon/what-yields-do-we-need-to-be-profitable/>

Policy

- Health Policy Incentive: **\$22.5 / acre @45 Bu/ Acre** (Reimbursed seed '+')
- +8% revenues @\$6 / Bu: (1/3 of average farm profit margin)
- **Switch from Bin Seed: \$6 .75/ acre**
<https://cropwatch.unl.edu/2017/making-case-certified-wheat-seed#:~:text=Yield%20Advantage,to%20the%20most%20recent%20genetics.>
- **Switch from Bin Seed**
- EcoService Incentive
 - Increase financial incentive to incorporate wheat in resilient choices

Our purpose...



We are a broad-based grassroots 501(c)3 nonprofit seeking to save lives and reduce healthcare costs at global scale, by increasing nutrients in commodity foods.

Our Major Health Impact

A Step in the Right Direction for Billions of People



- Everyone who eats wheat gets more fiber (Up to 2.5 g/ day, average)
- We expect chronic disease will retreat:
Nutrition Model*:
 - > Cardiovascular Disease 1-3% ▼ ()
 - > Diabetes type II 3-4.5% ▼ ()
- \$120 in benefit for each \$1 in cost** (Net Present Value >\$250 billion)
- Even a little high-fiber wheat helps– and a lot helps a LOT

US FIBRE AND BENEFITS	YEAR 1	7	11	14	20	25	30	35	TOTAL*
Healthcare Cost Savings (\$MM)	255	3,402	5,104	6,805	8,506	10,207	11,909	11,909	58,097
US Lives Saved (#)	387	5,158	7,737	10,316	12,894	11,032	12,871	12,871	73,265
% of US Crop High-Fiber (50% delivered to US)	1.5 %	20%	30%	40%	50%	60%	70%	70%	

*Actual reduction will depend on populations' actual diets

** 13-year investment and farmers' incentives vs healthcare cost savings and value of lives saved.

Wheat Fiber for Rural Wealth and Nebraska Health



Ongoing Invitations

Nebraska Farming and NAWG Members

- NE Dept of Agriculture; NE Cattlemen; NE Corn
- NE Wheat
- NE Farm Bureau
- NE Farmers' Union

Nebraska (and Regional) Public Health

- Dept of Health and Human Services
- Nebraska Managed Care Organizations
- Nebraska NGOs (e.g., Amer Heart Association, Amer Diabetes Association)
- Academy of Nutrition and Dietetics

University of Nebraska Lincoln, UNMC, Native American College

Nebraska (and Regional) Baking / Food Supply

Millers, Bakers, Supermarkets, Food Service

Politicians, Advisors: County, State, Federal