Cover Crops & Soil Health Opportunities

Iceberg or Tsunami?

GrasslandOregon

Novel solutions for growing concerns.

Curious by nature

Inspired by challenges

Driven to learn and find answers

Corn for Grain 87 million
Soybean 76 million

Acres of Potential…

Vineyards/Grapes 1.1 million
Forage & Pastures 106 million
Corn for Silage 7.1 million
Vegetables 4.1 million
Sunflowers 3.5 million
Orchards 5.2 million
Sorghum 5.5 million
Cotton 9.3 million
Wheat 98 million
Beets 1.2 million
Pulse 2.8 million
Rice 2.6 million

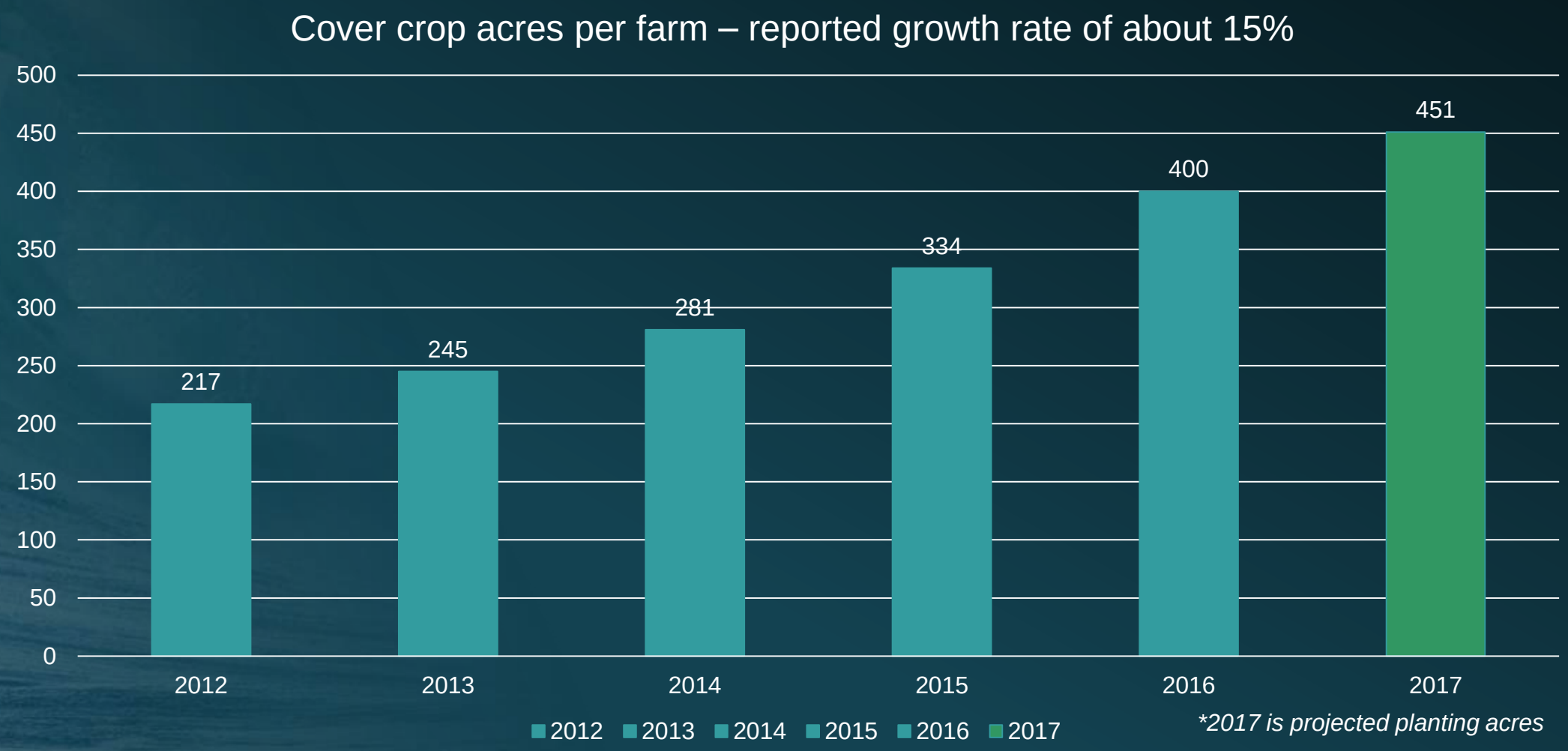
Corn & Soybean
~163 Million Acres

This list
> 246 Million Acres

AG Census Total Farmland
> 805 Million Acres

…In the US alone

Average Acres of Cover Crops Per Farm in the U.S.



**2017 is projected planting acres*

SUSTAINABILITY

EROSION CONTROL
INCREASE YIELD
BUILD ORGANIC MATTER
ALLEVIATE COMPACTION

Goals / Benefits

Water Quality
Water Infiltration
Water Holding
Creating Root Pathways
Added Crop Rotations
Improve Boggy Soils
Nematode Control
Reduce Labor Costs
Nitrogen Fixation
Phosphorous Management
Nitrogen Stability
Disease Suppression
Weed Suppression
Increase Soil Temp
Beneficial Insectary
Increase Worm Activity
Decrease Soil Temp
Deep Soil Potassium Access
Insect Control
Mineral Uptake
Reduce Equipment Passes
Improve Biology
Pollinator Habitat
Improve Saline Soils
Control Chemical Leaching
Reduce Input Costs
Increase Microbial Activity
Biofumigation

Water Management
Pest Control
Biofumigation
Organic Matter
Disease Control
Yield
Biology
Nitrogen Contribution
Weed Suppression

WEED SUPPRESSION

Allelopathy

Biomass

Root Structure

Timing

NITROGEN CONTRIBUTION

Fixation

Scavenging

Timing/Availability

Stability

BIOLOGY

Beneficial or Detrimental Attributes

Above Ground
Rodents/Disease

Below Ground
Host or Non-Host

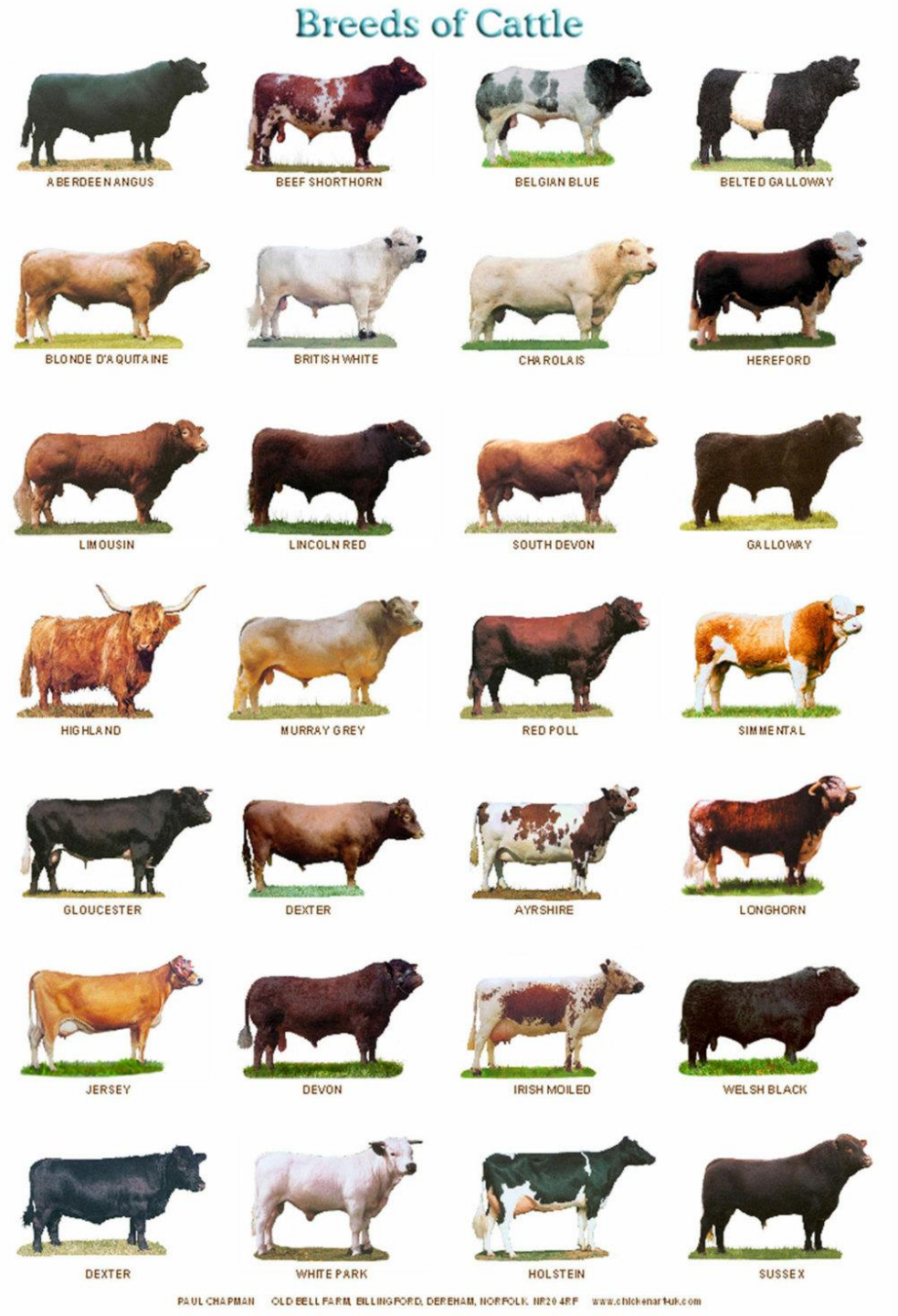
Nematodes
Other Micro-Organisms

A Few Tools…

CEREAL RYE (GRAIN)
OATS
RADISH
Annual Ryegrass
Berseem Clover
Sorghum
White Clover
Persian Clover
Winter Pea
Med Red Clover
Canola/Rape
Mustard
Pennycress
Millet
Balansa Clover
Sunflower
Wheat
Turnips
Hybrid Clover
Common Vetch
Fodder Beets
Camelina
Sunhemp
Hairy Vetch
Assorted Flowers
Triticale
Phacelia
Chicory
Nematode Control Radish
Crimson Clover
Buckwheat
Black Oats
Kale
Rocket
Fine Fescue
Barley

GO GrasslandOregon

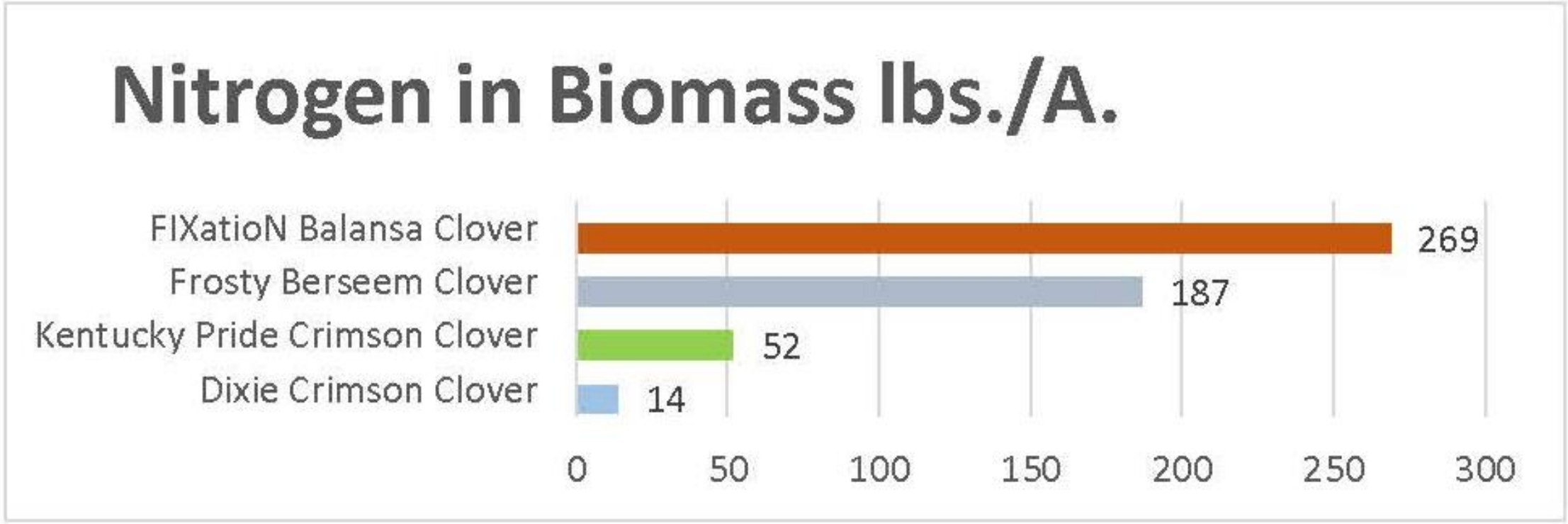
Novel solutions for growing concerns.


Breeds of Cattle
ABERDEEN ANGUS
BEEF SHORTHORN
BELGIAN BLUE
BELTED GALLOWAY
BLONDE D'AQUITAINE
BRITISH WHITE
CHAROLAIS
HEREFORD
LIMOUSIN
LINCOLN RED
SOUTH DEVON
GALLOWAY
HIGHLAND
MURRAY GREY
RED POLL
SIMMENTAL
GLOUCESTER
DEXTER
AYRSHIRE
LONGHORN
JERSEY
DEVON
IRISH MOILED
WELSH BLACK
DEXTER
WHITE PARK
HOLSTEIN
SUSSEX
PAUL CHAPMAN OLD BELL FARM, BILLINGFORD, DEREHAM, NORFOLK, NR20 4RF www.chickenart-uk.com

A Clover is a Clover is a Clover…

Dixie Crimson Clover
5,162 lbs Green Biomass

University of Illinois
Ewing Demonstration Center
Evaluation of Cover Crops in Corn Production



University of Illinois
Ewing Demonstration Center
Evaluation of Cover Crops in Corn Production

Species	Crop	Variety	Seeds/lb	Seeding Rate (PLS seeds/ft^2)	Seeding Rate (PLS lb/ac)
Avena strigosa	black oats	Cosaque	12,019	42	152
Avena strigosa	black oats	Soil Saver	30,468	42	60
Secale cereale	cereal rye	Abruzzi	19,404	42	94
Secale cereale	cereal rye	Aroostook	23,176	42	79
Secale cereale	cereal rye	Brasetto hybrid	21,354	42	86
Secale cereale	cereal rye	Elbon	32,348	42	57
Secale cereale	cereal rye	FL 401	24,104	42	76
Secale cereale	cereal rye	Guardian	14,996	42	122
Secale cereale	cereal rye	Hazlet	13,252	42	138
Secale cereale	cereal rye	Maton	20,875	42	88
Secale cereale	cereal rye	Maton II	21,532	42	85
Secale cereale	cereal rye	Merced	29,866	42	61
Secale cereale	cereal rye	Oklon	20,452	42	89
Secale cereale	cereal rye	Prima	12,988	42	141
Secale cereale	cereal rye	Wheeler	21,354	42	86
Secale cereale	cereal rye	Wintergrazer-70	23,251	42	79
Vicia villosa	hairy vetch	Lana	12,350	7	25
Vicia villosa	hairy vetch	Purple Prosperity	15,960	7	19
Vicia villosa	hairy vetch	TNT	17,520	7	17
Vicia villosa	hairy vetch	CCS-Groff	19,930	7	15
Vicia villosa	hairy vetch	Vilana	14,180	7	22

SOYBEAN CYST NEMATODE STUDY

SCN/Forage Legumes 2015

Trial established on 3/11/15 and inoculated with 2920 SCN eggs + 1860 J2s per cone.
Trial terminated on 5/1/15. Plants destructively sampled and roots scrubbed to release SCN females.
SCN population from Decatur MI, RR Trial 2014
Soil: 88.3% sand, 6.7% silt and 5.0% clay; pH = 7.1; CEC = 3.9 meq/100 g
Plant populations: alfalfa and clovers, 3 plants/cone; brassica, mustard and peas, 2 plants/cone and all others, 1 plant/cone.

			SCN females, cysts and eggs per conetainer												
			Rep 1				Rep 2				Rep 3				
No.	Species	Cultivar	females	cysts	SUM	eggs^	females	cysts	SUM	eggs^	females	cysts	SUM	eggs^	fe
1	alfalfa	Foregrazer	0	1	1	225	0	0	0	980	0	0	0	1200	
2	alfalfa	L449 APH2	0	0	0	390	0	0	0	505	0	0	0	110	
3	alfalfa	L455	0	1	1	10	0	0	0	15	0	0	0	30	

SCN eggs^		
X	SD	SE
1273.75	1032.371	258.093
265.00	217.064	54.266
223.75	410.921	102.730

A Few Tools…

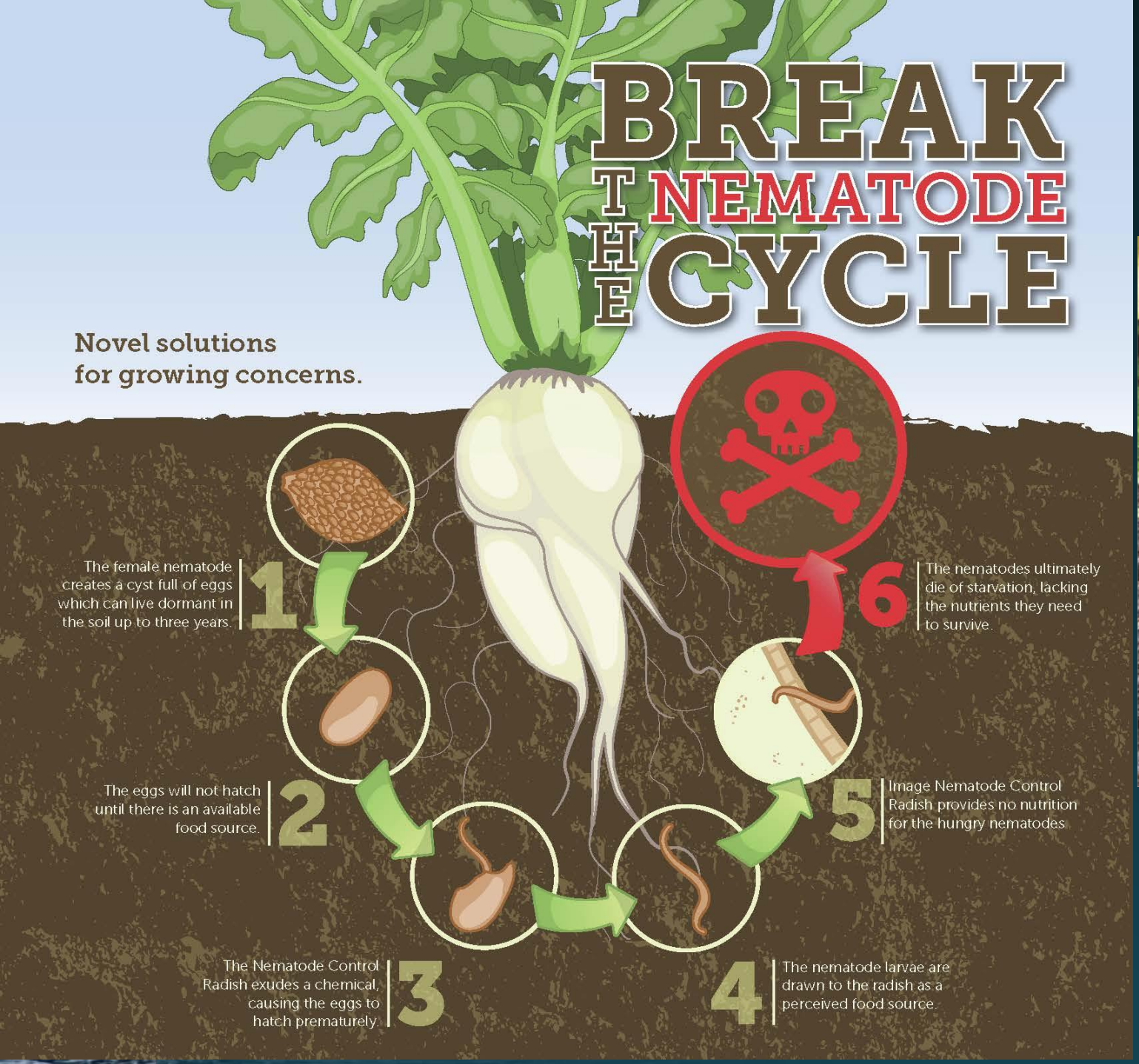
CEREAL RYE (GRAIN)
OATS
RADISH
Annual Ryegrass
Berseem Clover
Sorghum
White Clover
Persian Clover
Winter Pea
Med Red Clover
Canola/Rape
Mustard
Pennycress
Millet
Balansa Clover
Sunflower
Wheat
Turnips
Hybrid Clover
Common Vetch
Fodder Beets
Camolina
Sunhemp
Hairy Vetch
Assorted Flowers
Triticale
Phacelia
Chicory
Nematode Control Radish
Crimson Clover
Buckwheat
Black Oats
Kale
Barley
Rocket
Fine Fescue

FiXatioN
BALANSA
CLOVER

FiXation
BALANSA
CLOVER

FiXatioN
BALANSA
CLOVER

FiXation
BALANSA
CLOVER


BREAK THE NEMATODE CYCLE
Novel solutions for growing concerns.
1
The female nematode creates a cyst full of eggs which can live dormant in the soil up to three years.
2
The eggs will not hatch until there is an available food source.
3
The Nematode Control Radish exudes a chemical, causing the eggs to hatch prematurely.
4
The nematode larvae are drawn to the radish as a perceived food source.
5
Image Nematode Control Radish provides no nutrition for the hungry nematodes.
6
The nematodes ultimately die of starvation, lacking the nutrients they need to survive.

GO GrasslandOregon

Novel solutions for growing concerns.

OPPORTUNITIES

COVER CROP SEED SALES

Specialize

Differentiate

Expand your network

Become the local Expert

LOCAL COVER CROP PLOTS

Observations

On-Farm Success Examples

Sharing/Learning

Highlight your related products/services

EQUIPMENT

Sales

Rentals

Options

EDUCATION

Seminars

Round-Table Discussions

Crop Insurance

Government Programs

CONSULTING

On farm Rx

Comprehensive Crop System Management

Assist with Gov't Programs

Assist with Insurance Programs

EXPERTISE

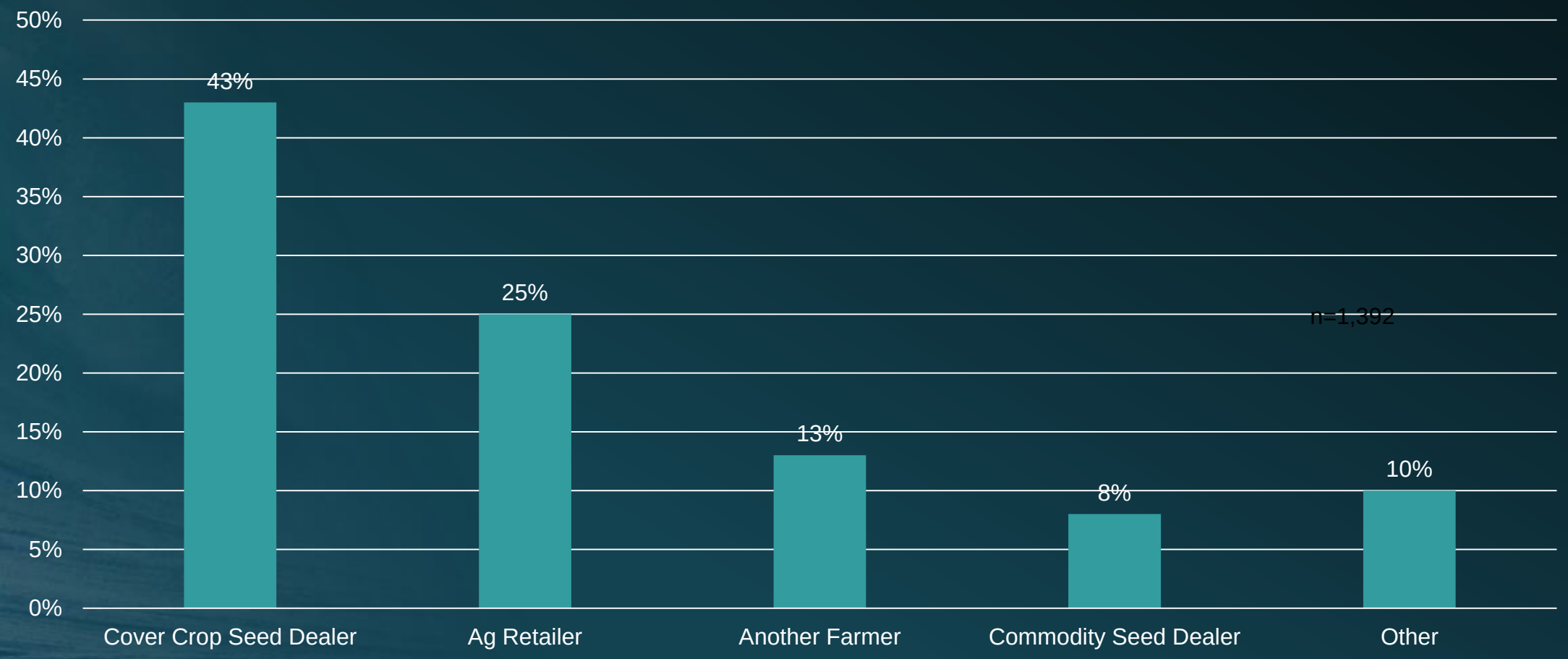
Value

Connecting Dots

Local Source for Information

Community Trust

Where Farmers Want to Purchase Cover Crop Seed in the Future



SUSTAINABILITY

EROSION CONTROL
INCREASE YIELD
BUILD ORGANIC MATTER
ALLEVIATE COMPACTION

Goals / Benefits

Water Quality
Water Infiltration
Water Holding
Creating Root Pathways
Added Crop Rotations
Improve Boggy Soils
Nematode Control
Reduce Labor Costs
Nitrogen Fixation
Phosphorous Management
Nitrogen Stability
Disease Suppression
Weed Suppression
Increase Soil Temp
Beneficial Insectary
Increase Worm Activity
Decrease Soil Temp
Deep Soil Potassium Access
Insect Control
Mineral Uptake
Reduce Equipment Passes
Improve Biology
Pollinator Habitat
Improve Saline Soils
Control Chemical Leaching
Reduce Input Costs
Increase Microbial Activity
Biofumigation

CRIMSON CLOVER
VARIETY: KENTUCKY PRIDE
LOT: M9-16-KCC-166

PURE SEED:	99.83%
OTHER CROP SEED:	0.00%
INERT MATTER:	0.17%
WEED SEED:	0.00%
NOXIOUS WEEDS:	NONE FOUND
GERMINATION:	81.00%
HARD SEED:	9.00%
TOTAL GERMINATION:	90.00%
TEST DATE:	9/16
ORIGIN:	OREGON
NET WEIGHT:	50LB/22.68KG

GREENER WORLD SEED COMPANY
123 MAIN STREET
HARTLAND USA
AMS 4804

The local Ag Retailer's pricelist offers Dixie Crimson clover at $1.80/lb. and FIXatioN Balansa Clover at $2.60/lb. WOW! Seems like an easy decision if you only look at things from a cost-per-pound perspective. But let's take a little deeper look:

Dixie Crimson	**FIXatioN Balansa Clover**
~ 135,000 seeds per pound (raw)	~500,000 seeds per pound (coated)
Plant rate = up to 20 lbs/A. (drilled)	Plant rate = up to 8 lbs/A. (drilled)
The cost per acre = $36	**The cost per acre** = $20.80

Cost per acre provides a clearer picture of your real cost.

REQUESTED BY SOIL CONSERVATIONISTS ACROSS THE NORTH AMERICA

'They are so clear and easy to understand – they will be a great help to our large and small farmers alike.'

Allison - Coordinator Water Programs, AL

'I reviewed the booklet and am very impressed.'

Joe – USDA-NRCS, IL

'This is a fabulous resource!'

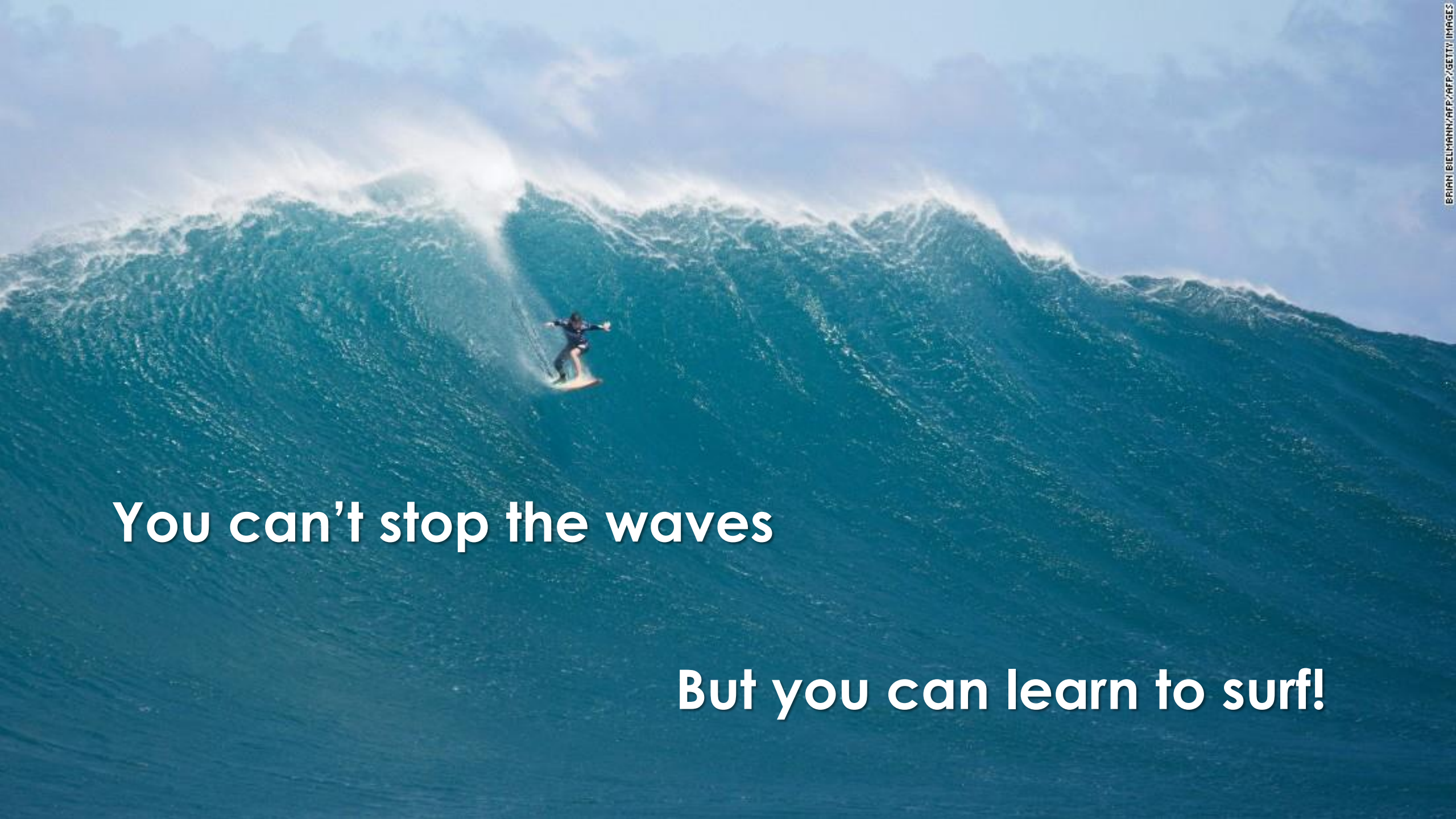
Molly - MSU Extension, MT

'Wow, nice product.'

Joel – Resource Conservationist, CO

'I looked at the book and found it wonderful!'

Kefeni, PhD
USDA-NRCS, PA


You can’t stop the waves
But you can learn to surf!
BRIAN BIELMANN/AFP/AFP/GETTY IMAGES

GrasslandOregon

Novel solutions for growing concerns.

Risa DeMasi - @SeedNerd

Grassland Oregon - @GOSeed

www.GrasslandOregon.com