

# Take Your PULSE MAGAZINE

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USA Dry Pea  
& Lentil Council

CELEBRATING  
THE UNITED STATES  
PULSE INDUSTRY



The Pulse Protein Innovation Summit

PAGE 10

Tim McGreevy, CEO

# THE PULSE REVOLUTION

**T**he 2016 crop of dry peas, lentils and chickpeas has yielded a record 2.2 million metric tons, nearly double the production of these pulses in 2015.

The International Year of Pulses (IYP) ended in 2016 and the pulse revolution has begun. In 2016/17 we saw record pulse crop sales domestically reaching almost 900,000 metric tons. The North American Marketing campaign we invested in resulted in an increase of over 400,000 metric tons from the 2015/16 fiscal year.

**Join the Half Cup Habit-** In January 2017 we launched the “Half-Cup Habit, Just Add Pulses” North America Marketing Campaign. Over 50,000 people signed up for the “Half-Cup Habit” and of those surveyed 86% reported they are eating more pulses since taking the challenge and 99% plan to continue to eat pulses after the challenge. This marketing effort has kept the pulse industry in high gear with over 2 billion social media views and over 3.3 million website views.

India’s recent imposition of new tariffs on dry peas, lentils and chickpeas has been a disappointment on an otherwise bright export marketing campaign in the last fiscal year. In fact, exports in the 2016/17 marketing year end were over 500,000 metric tons—a feat that has only happened three other times in the past ten years. Export markets remain strong despite the absence of India in the current marketing year.

The most exciting pulse industry research completed this last year was conducted by Dr. Dil Thavaraja, a Pulse Quality and Nutrition Professor at Clemson University. Dr. Thavaraja completed a study on rats measuring the effects of a lentil based diet. Three groups of rats were fed a lentil diet, corn diet and a controlled (balanced) diet. Within six weeks those rats that consumed a lentil based diet had an overall lower body weight, lower body fat percentage and good intestinal pathogens. Weight management is the number one consumer concern in the world today. This study will help identify pulses as a solution to a global obesity epidemic, in turn helping to drive demand for pulses both domestically and internationally.

The USADPLC successfully launched a new grower education platform called *PulsEd*. PulsEd was funded in part by a grant we received from USDA/Risk Management Agency (RMA). The grower education series featured webinars on marketing, weed, insect and disease management of dry peas, lentils and chickpeas. If you missed these informative webinars, I encourage you to visit our website at [www.pulses.org/pulsed](http://www.pulses.org/pulsed).

FY 2016/17 changed the pulse industry in a fundamental way. Acreage and production continue to increase. In 2016 we saw a total of 2,667,100 acres planted in dry peas, lentils, chickpeas and dry beans with production at 2,464,201 metric tons. In 2017 we saw a total of 4,402,500 acres planted in dry peas, lentils, chickpeas and dry beans with production at 2,643,337 metric tons. Demand for pulse crops is



increasing dramatically in our domestic markets due to an effective North American Pulse Marketing Campaign. Export growth potential continues to grow despite India pulling away from the market in the latter part of 2017. Pulse research and technical seminars are poised to deliver results that will increase demand for pulse crops all over the world. 2016/2017 set records and will go down in history as the beginning of a new wave of growth for the pulse industry.

I would like to thank every grower and industry member for funding the activities of the USA Dry Pea and Lentil Council and for the terrific staff I work with who manage the programs featured in this edition of ‘Take Your Pulse’.

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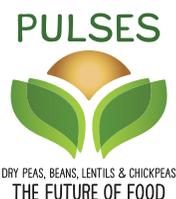
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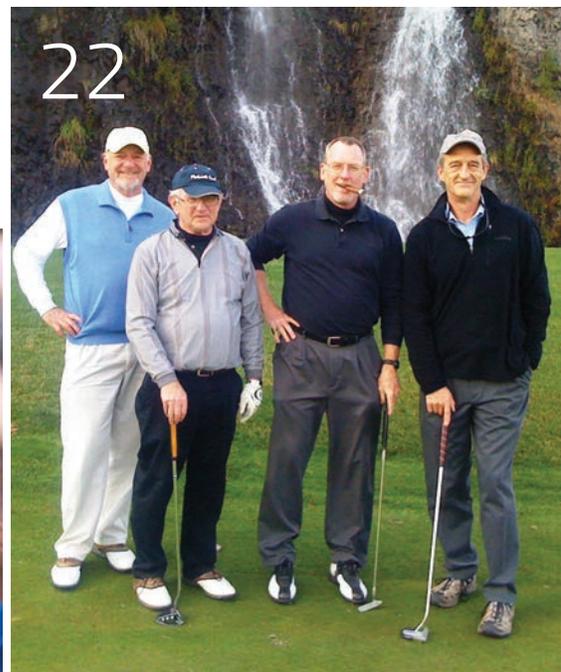
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ARTICLE BY ED & PATTY HAAG

# Food Aid & Pulses

## THE GIFT THAT KEEPS ON GIVING

According to the UN Food & Agriculture Organization, global hunger is on the rise, affecting 11% of the world population. In 2016 the estimated number of undernourished people increased to 815 million, up from 777 million the previous year, due to natural disasters and political strife.

Since the inception of international U.S. Food Aid nearly 60 years ago, the United States has played a major role internationally in providing food aid across the globe in order to reduce world hunger and malnutrition. What began as the Marshall Plan, a program to provide assistance to war-torn Europe after WWII, led to the Agricultural Trade Development and Assistance Act of 1954, known as PL-480 or Food for Peace, signed into law by President Dwight D. Eisenhower. In 1961, President Kennedy signed the Foreign Assistance Act into law, creating the U.S. Agency for International Development (USAID) by executive order. Aid opportunities greatly increased during this time and the following ten years became known as the “decade of development”.

Through the work of USAID, U.S. international food assistance has been distributed through programs such as the McGovern-Dole International Food for Education and Child Nutrition Program, and Food for Peace.

Over the past 50 years, Food for Peace, in its various forms, has provided food and assistance for over 3 billion people in 150 countries. These programs all rely heavily on in-kind transfers of domestic commodities, food purchased from American farmers through a competitive process, for their implementation.

Although the United States government generally views sending food to people in need as a humane tradition, there are many economic benefits to our economy as well.

Enter pulses. Although Federal programs did not originally cover vegetables or most dry pulse crops, educational efforts led by the USA Dry Pea and Lentil Council led to selected pulse crops such as lentils, dry peas and chickpeas being accepted into some commodity programs under the 2002 Farm Bill.

Including pulses made sense. They are loaded with low cost vegetable protein, and are high in dietary fiber, magnesium, potassium, and folate.

As Tim McGreevy, current USADPLC CEO notes, “In these emerging or developing markets, getting adequate protein levels into your diet is really critical, and these pulse crops bring a really incredible source of affordable vegetable protein to the food aid system.”

Pulses are also invaluable in emergency feeding situations as they are easily transportable, can be stored for long periods of time without losing nutritional value and they don't need refrigeration. Because they are in dry form, they can be





**“PL 480 OFFERS ANOTHER MARKET FOR US, IT’S A PROGRAM THAT AFFECTS A LOT OF PEOPLE AND IS IMPORTANT FOR THE PULSE INDUSTRY IN MY STATE.”**

**- KIM MURRAY**

*Pulse grower, Kim Murray in Froid, Montana.*

rehydrated and cooked. Pulses such as split peas don't require soaking overnight, a huge advantage in areas with limited water resources, and can be cooked in 30 minutes, using a minimum amount of fuel unlike some other food commodities.

During the 1970s when growers were building a market for pulses, growers, as well as recipients of food aid, benefited from the programs. Many in the industry agree that farmers were kept afloat by PL 480 during those first years.

While much of the food aid sent overseas is for emergency situations such as severe drought, flooding or political unrest, another part of the program is developmental. For the past twenty-five years, USAID has prioritized “sustainable development” for developing countries in their efforts to improve their economic conditions and quality of life.

Today agencies are helping to improve farming practices by training farmers to use good seed sources and good management practices in order to increase productivity within their own agricultural systems and to become more sustainable.

“We used to ship a lot of food aid to Japan and several other Asian countries after WWII,” says McGreevy. “And now they're commercial customers of ours, they have their own supplies and they import products such as U.S. pulses and seed as well. The long term goal, of course, is to improve agriculture systems around the world so that food needs aren't as great.”

Montana pulse grower Kim Murray talks about the increase in pulse crops over the past decades and the continuing role of food aid in his region. “PL 480 offers another market for us, it's a program that affects a lot of people and is important for the pulse industry in my state,” claims Murray. “We try to service food aid needs as well as commercial, as varieties get better every year in terms of yield and disease resistance. We as farmers have been pretty good at keeping the world fed and I think it will continue.”

The evolution of new markets for U.S. pulses in countries which originally had been aid recipients was a new and welcome benefit for the American pulse industry.

“Food aid has been important over the long term in developing a market,” says Pete Klaiber, USADPLC VP of Marketing. “For instance, the Philippines received U.S. peas as a food aid ration many years ago. Peas are not native to the Philippines and not traditionally part of their cuisine, but people accepted and adopted peas and they continued to be a good buyer of U.S. peas commercially. The food aid program ended long ago but we saw a transition into use of peas regularly by the Philippine consumer so that was the kind of victory we have seen.”

Richard Mickelson, pulse grower from North Dakota, talks about how the farmer benefits from from PL-480 when commercial markets are too tight.

“Sometimes food aid is kind of a last resort, another source to sell some product which is good for the farmer and it's a great way to help people that need it.”

Despite 2016 being designated by the UN as the International Year of Pulses in recognition of the importance of pulses to worldwide food security, US food assistance in general is rapidly diminishing. As the number of U.S. acres devoted to pulses have increased dramatically since 2016, the number devoted to food aid have decreased.

What caused this dramatic shift in the amount of pulses grown for food aid?

Several factors are involved. Food manufacturers have much more flexibility with research and development. In 2000 there were about a dozen products created using pulses. Today the number has grown to 1200 products, featuring everything from dog food to pizza flour, products too expensive or not suitable for food aid but meeting a commercial demand in more affluent countries.

Other factors for reduced food aid are the amount of seed available, higher domestic prices and demand, and the amount of federal funding available to purchase crops for aid.

As Andrew Fontaine, owner of Spokane Seed, observes, “The food aid scenario depends on the government, it could go away overnight. This current administration has said they don't >>>



*Genesee, Idaho pulse farmer Howard Jones examining young chickpeas.*

**“THE LONG-TERM GOAL, OF COURSE, IS TO IMPROVE AGRICULTURE SYSTEMS AROUND THE WORLD SO THAT FOOD NEEDS AREN'T AS GREAT.”  
- TIM MCGREEVY**



want to spend money on it so over the stroke of a pen that whole market could be gone.”

Currently, USAID staff work in more than 100 countries around the world to strengthen political relations with foreign governments, expand free markets and to help people recovering from disaster or struggling with food insecurity.

Pulses still play an essential role in alleviating hunger now that the need is greater than ever. Many nongovernmental organizations (NGOs) have established food aid programs and many such as Feed the Children and Catholic Relief Services include pulses in their food basket. Though with a fraction of the funding and on a much smaller scale, these NGO's have committed to continuing the U.S. practice of responding globally to cultures in crisis.

Washington grower Kevin Mader has been involved with both government and private food aid.

“We’ve done all kinds of things, we’ve done PL-480 work, donated to orphanages overseas, given to Feed the Children, etc.”

He talks about the logistics of being involved with food aid as a private group. “Getting the freight paid for and the product paid for is easy, no problem, but knowing how to negotiate and weave our way through all that red tape of the different countries, that’s the hardest part of doing food aid for us. Farmers always want to give, they like helping people out, they like to give product, if you’ve got a good legitimate need you’re giving to, farmers absolutely love to give product.”

Although the United States, through both federal and private organizations, has

**“WE REALLY LIKE TO SEE IT WHEN THE ECONOMY HAS IMPROVED TO THE POINT WHERE THEY’RE NOT NEEDING FOOD AID ANYMORE AND THEY’RE DOING COMMERCIAL BUSINESS WITH US.” - HOWARD JONES**



been the largest contributor by far to international food aid, there is concern about the future of food assistance for all involved.

“We believe food aid is necessary in difficult times,” says Howard Jones, pulse grower from Idaho. “My heart breaks when I see a nation that goes through huge trauma like having a famine. We really like to see it when the economy has improved to the point where they’re not needing food aid anymore and they’re doing commercial business with us.”

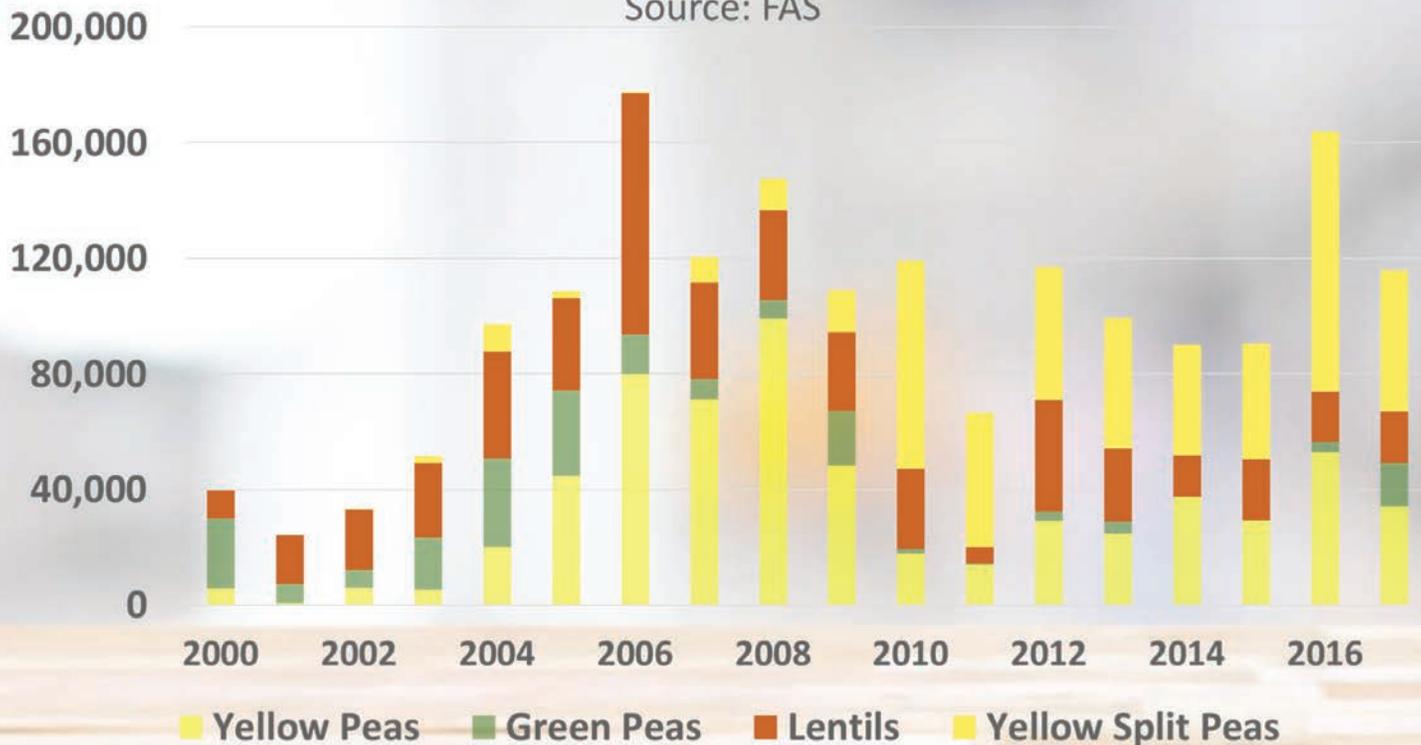
“It’s been projected that by 2050 there could be 10 billion people on the earth. These people will need food. It will be interesting to see how agriculture and the government respond to the needs of all those people” 🌱



*The Mader family (Kevin is second from right) owns and operates Palouse Brand pulses in Pullman, Washington.*

### FOOD AID SHIPMENTS PER CROP YEAR, BY TYPE (MT)

Source: FAS



# LEARN TO GROW BETTER DRY PEAS, CHICKPEAS, & LENTILS!

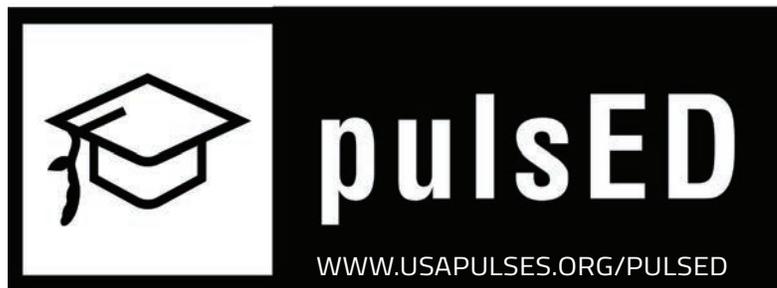
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USDA

- 01 RISK MANAGEMENT TOOLS  
Crop Insurance & More
- 02 UNDERSTANDING PULSE MARKETS
- 03 PLANTING CONSIDERATIONS
- 04 PEST MANAGEMENT  
Root & Foliar Diseases
- 05 PEST MANAGEMENT  
Insects & Viral Diseases
- 06 HARVEST CONCERNS
- 07 WEED MANAGEMENT

*PulsED is a FREE grower education webinar series sponsored by the USA Dry Pea & Lentil Council and the USDA Risk Management Agency Spokane Office.*



## A PARTNERSHIP FOR PULSE CROP GROWER EDUCATION

In 2017, the USA Dry Pea & Lentil Council (USADPLC) and the Spokane Regional Office of the Risk Management Agency (RMA) partnered to provide free grower education to dry pea, lentil, and chickpea farmers in the Pacific Northwest. Through an online project entitled *Educating PNW Pulse Crop Growers on Best Management Practices to Reduce Risk*, funded by a Risk Management Education Partnership Program (RMEP) grant, the USADPLC created *PulsED* (puls; the Latin term for pulses and “ED,” an abbreviation for education) an offering of live broadcast webinar modules on various topics of concern to new and established pulse crop farmers. Although the pilot project was funded for only Pacific Northwest growers, the content applies to most pulse growing regions.

A planning committee comprised of 24 USADPLC staff, PNW pulse growers, trade members, researchers and Spokane RMA staff met on several occasions to plot the course of the webinar series, set dates

for programs, and work out the overall logistics of the program.

The committee decided to launch the event at the 2017 Western Pulse Growers Association (WPGA) annual grower meeting in Moscow, Idaho. As part of the launch, Director Ben Thiel of the Spokane RMA Regional Office opened the PulsED program by describing all of the RMA risk management products available to pulse growers.

One of the most recurring issues was the need to reschedule webinar dates due to weather, as a webinar took low priority versus getting a tractor into a field. As a result, the committee changed the order of the events, and the USADPLC applied for a no-cost extension to have enough time after harvest to deliver the last webinars.

The extension allowed the Planning Committee to schedule the final webinars of the RME project at the 2018 WPGA Annual Grower Meeting, one year following the initial launch. Utilizing remote

videoconferencing equipment acquired through the grant, the USADPLC staff implemented a live remote video broadcast from the Best Western Inn in Moscow, Idaho. This was the first event of its kind from the location, and the first interactive educational event ever produced for the pulse industry. The Planting Intentions and Weed Management webinars were produced during the grower meeting, followed by an additional presentation by Ben Thiel, a grower panel, and an official closing of the PulsED program. Ultimately, the USADPLC promised six modules but delivered seven modules and a bonus presentation.

Also, the USADPLC produced a total of 28 separate roll-in videos for the series, including an introduction to the Spokane Regional RMA Office (<https://bit.ly/2GnypXP>) so that PNW pulse growers could put a name to the faces of those working on their behalf.

Jo Lynne Seufer, the former Risk Management Specialist with the Spokane



ABOVE: VP of Marketing, Pete Klaiber (left) leads a grower panel session on Understanding Pulse Markets (L-R: Howard Jones, Brian Silflow, Dave Harlow, and Jon Olson). RIGHT: Ben Thiel, Director of the Spokane Regional Office of the Risk Management Agency presents the multitude of crop insurance products available for pulse growers, as VP of Research & Member Services, Todd Scholz approves.



Regional Office of the RMA, wrote in her RMA blog, “USA Dry Pea & Lentil Council and their initiatives are true to our RMA goals – ensuring that farmers and ranchers have access to tools and strategies in managing risk in agriculture.”

While the organizers wanted to reach every pulse producer, the total in person attendance was 164. This includes participants from the PNW and as far away as Pennsylvania. Overall, the program leaves the industry with a great library of grower education information.

The USADPLC continues to promote the series, and have edited the full programs into shorter, content specific segments available throughout the year, like Kay Tiesle’s presentation on how to use the RMA website, and Dr. Drew Lyon’s explanation on using the Herbicide Mechanisms of Action for Pulse Crops online tool, available on the grower education site, [www.usapulses.org/pulsED](http://www.usapulses.org/pulsED).

What is unique about this program, is RME helped fund the infrastructure to

create future grower education materials - this project truly was the catalyst for a grower education movement in the pulse crop industry. A PulsED webinar will be a part of every WPGA grower meeting, and the USADPLC will be holding webinars and podcasts for all growing regions in the future. 🌱

BELOW: Pulse growers, Neil Heitstuman (Culdesac, ID), Ron Renfrow (Kendrick, ID), Dave Harlow (Pullman, WA), and Todd Wittman (Lapwai, ID) take the pre-webinar survey along with a breakfast burrito at the Pulse Crops Harvest Concerns webinar in June, 2017.





The impossible is now possible. This faux burger, named *The Impossible Burger*, tastes, smells, feels and even bleeds like the real deal.

**T**he latest consumer data shows that meat eaters are open to other sources of protein. 22.8 million Americans are flexitarian, meaning they'll eat vegetables primarily, but enjoy meat in moderation. Mattson, one of the leading innovative food companies, claims that almost half of the population say they want to eat more plant-based foods and less meat. Plant-based protein is one of the top food trends of 2018, and many food companies, including meat providers,

plant-based protein sources in the world be part of that equation?

In an effort to lead this conversation, the American Pulse Association (APA), the USA Dry Pea & Lentil Council (USADPLC), and the Good Food Institute (GFI) combined forces to host the first Pulse Protein Innovation Summit. This technical seminar was designed to explore and influence food manufacturing interest in using pulse crops as their preferred source of plant-based protein.

that this project would serve as a roadmap for product innovation in this domain.”

At an event designed to explore the validity of producing plant-based meat alternatives, the proof often comes down to the pudding. In this case, the attendees experienced a very different menu than what might be experienced at a typical industry event. All the menu items were selected from the pulses.org website and the USA Pulse Cookbook developed for the IYP 2016 official launch event. APA

## “THE PURPOSE OF THE EVENT WAS TO DRAW TOGETHER IDEAS BASED ON THE PLANT-BASED MEAT DEVELOPMENT CYCLE” - DR. JEFF RUMNEY

are buying out smaller companies to invest in plant-based protein and producers of meat analogs (i.e., fake meat). Many pulse producers also raise cattle and promoting meat alternatives seems counterproductive. However, according to Beef Magazine, companies like Tyson, who recently invested in Beyond Meat, one of the first meat analog manufacturers, believe that hedging your bets is good business.

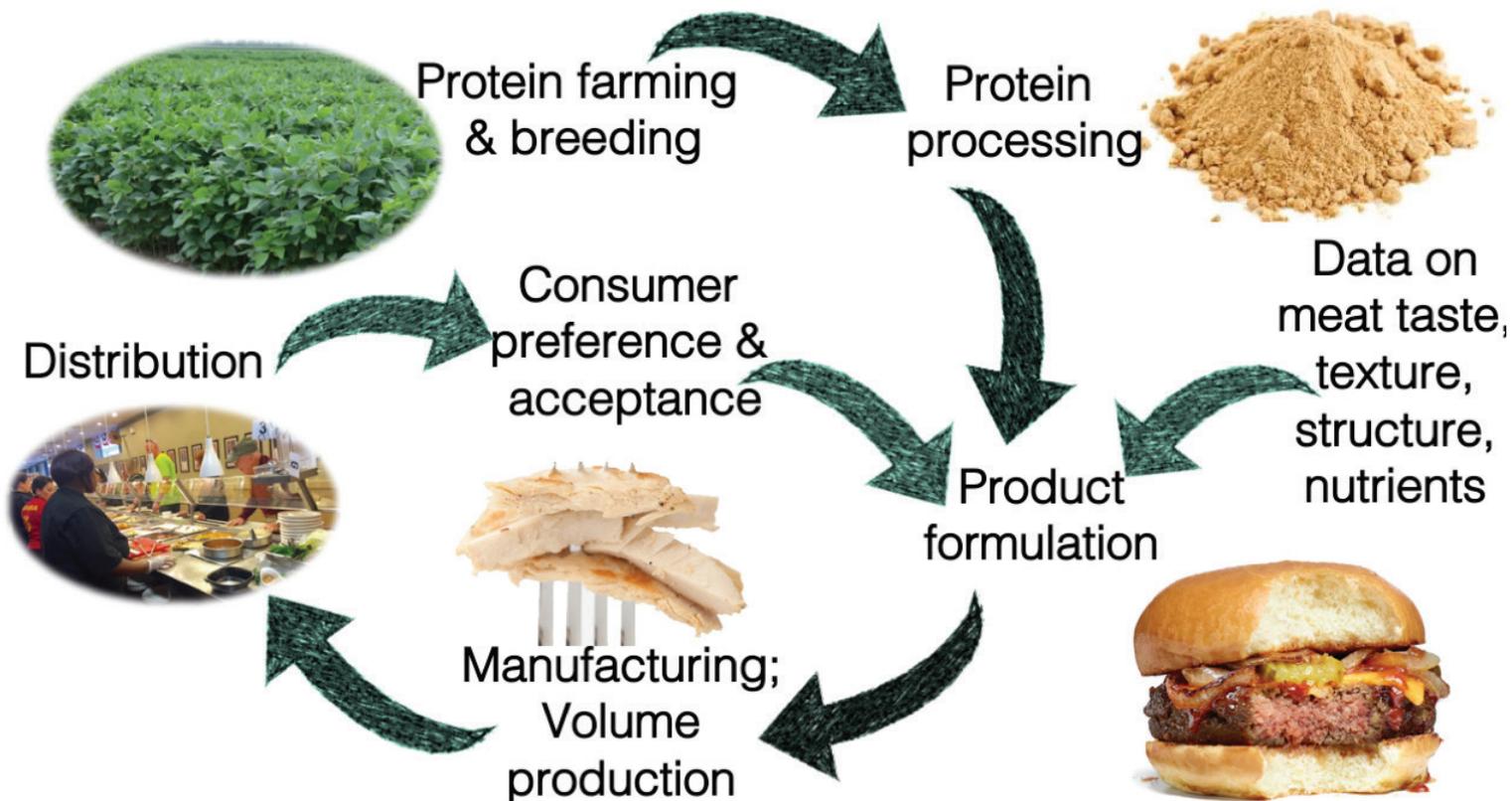
So, if large food manufacturers and meat suppliers are investing in meat alternatives, shouldn't pulse crops, one of the highest

The summit, which took place in Oakland over three-days starting on January 17, 2018, brought together 90 invited professionals from academia, industry, and government to discuss all stages of plant-based meat product development, research, and innovation.

“The purpose of the event was to draw together ideas based on the plant-based meat development cycle, and identify where the barriers are,” said Jeff Rumney, Director of Research for the APA and one of the planners of the event. “We hoped

Board Chairman, Greg Johnson welcomed the enthusiastic audience to the summit during the first night's banquet, informing the audience of the role of the APA, and the importance of pulses in the food chain.

Colleen McClellan of Datassential initiated the first discussion of the day by sharing the consumer data behind the plant-based protein trend. McClellan stated that full vegans are on the decline, traditional meat eaters are trying to eat more plant-based protein, flexitarians are trying to add a bit more to their primarily >>>

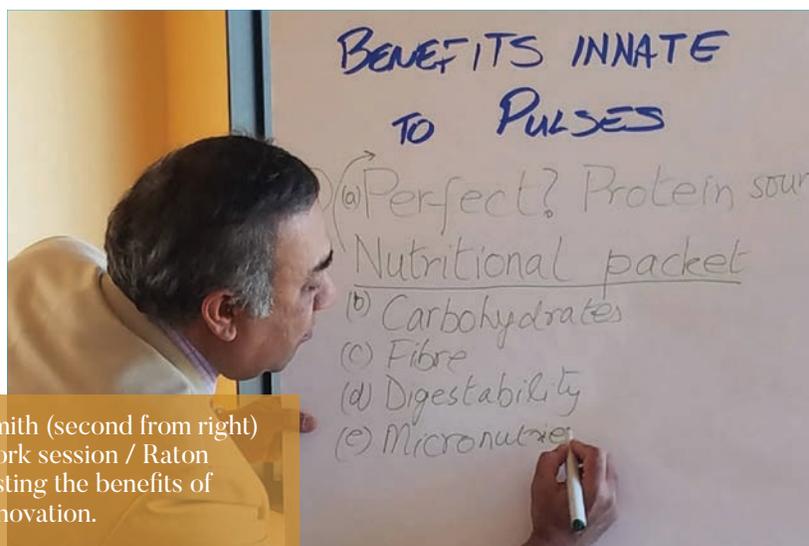


**FIGURE 1: THE PLANT-BASED MEAT DESIGN CYCLE.**

Design cycle graphic courtesy of The Good Food Institute.



Idaho pulse grower, Pat Smith (second from right) joins in on a roundtable work session / Raton Swami from Maple Leaf listing the benefits of pulses for food product innovation.



vegetarian diet. However, the traditional veggie burger has never quite satisfied consumers as a meat alternative.

McClellan states that although 88% of consumers know of the veggie burger, only 46% have tried it, and of that group, only 27% actually liked it. There's room for improvement and an opportunity for plant-based proteins.

Barb Stuckey of Mattson defined this flexitarian consumer further and discussed the race to market for plant-based meat producers. The old veggie burger is being replaced with burger alternatives that smell, taste, feel and even bleed like traditional burgers. The battle to reach these Flexitarians is now center store.

Stuckey says every food company now needs to ask themselves, "What is our Flexitarian approach?"

Maple Leaf Meats, the largest meat distributor in Canada, and Johnsonville Foods, the largest sausage distributor in the United States both had their Research and Development people at the event, and Cargill attended as well. In fact, Maple Leaf just invested in Field Roast, an alternative meat manufacturer based in Seattle, WA. "If they're investing, they're seeing the same trends we're seeing," said McGreevy. "They're betting on plant-based foods having an impact in the marketplace."

Different experts in their respective fields presented information about each stage of the plant-based meat design cycle. CEO Tim McGreevy discussed the farming and agronomics of pulses, while Kurt Braunwart covered the breeding, variety development for specialty traits and production of pulses. Bob Tyler of the University of Saskatchewan and Anusha Samaranayaka of POS Bio\_Sciences discussed protein processing, and four industry experts addressed the product formulation and texturization with taste and flavor considerations. Brian Plattner of Wenger Manufacturing relayed the principles of scaling up the production of meat analogs.

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McGreevy was blown away by the diversity of the speakers. “The energy in the room and the discussion of what’s happening in the world of meat alternatives was incredible,” said McGreevy.

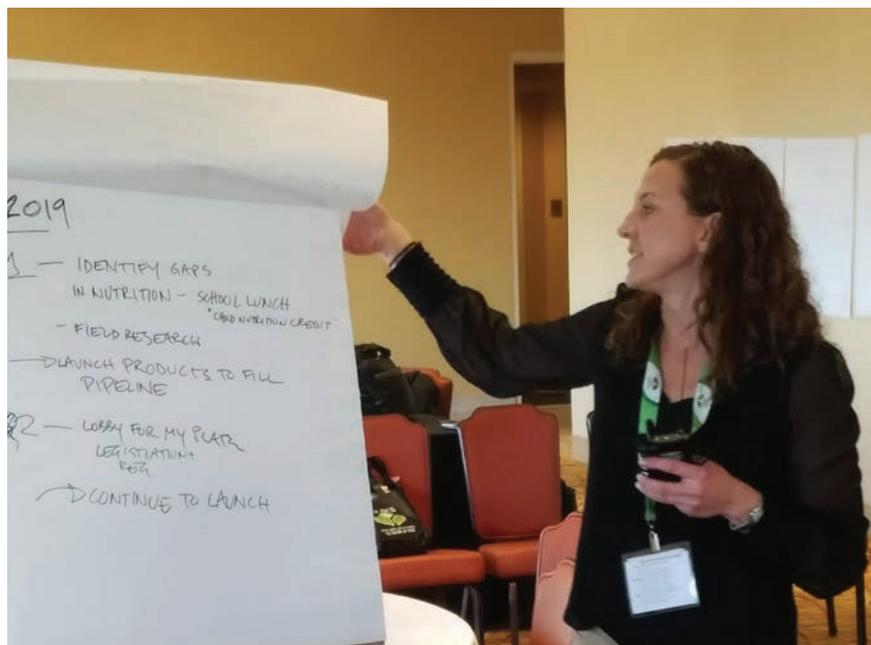
The balance of the event on Thursday and Friday morning was devoted to small group discussions. The goal was to allow small groups to have more conversations with the presenters to explore the details of the presentations and to ask for clarifications.

“The innovative ideas coming from the folks in that room was impressive,” declared McGreevy. In particular, McGreevy mentioned a presentation by Dr. Rajesh Potineni with Kerry on flavor chemistry. Dr. Potineni explained that the number one priority for consumers was taste, and boasted that the science was so exact, his team could replicate the flavor of anything. To Potineni, replicating flavor was not the challenge. The real challenge for food manufacturers is replicating the texture of meat.

To illustrate the point, one of the events was a “Beach BBQ” showcasing many of the meat analog products either in production or being prepared for distribution, like burgers,

chicken, and shrimp. The U.S. pulse industry staff was impressed with how most of the meat products did taste and feel like meat, but some of the items, like the shrimp, needed work in the “mouth feel” department. “The challenge is the right texture,” said McGreevy, “but the taste is spot on.”

Pat Smith, a grower from Kendrick, Idaho, and Chair of the USADPLC said it was great to be in the same room



2019  
1 - IDENTIFY GAPS  
IN NUTRITION - SCHOOL LUNCH  
"CAMP INTERVIEW CREDIT"  
- FIELD RESEARCH  
- LAUNCH PRODUCTS TO FILL  
PIPELINE  
2 - LOBBY FOR MY PLANT  
LEGISLATION  
FOR  
- CONTINUE TO LAUNCH

with these food professionals so excited to hear about pulses. “It was very exciting to be around those people,” said Smith. “This event was a great showcase for our products.”

On Friday, the small groups were asked to make a 4 - 2 - 1 plan: what the industry needs to address in the (4) quarters of 2018; (2) goals for 2019; and, (1) far-reaching goal for the future.

Rumney felt the general response based on an app-based survey of the event was very positive. Attendees commented on everything from the diversity of the attendees, the quality of the information and moderators, to requests for recipes from the banquets.

Many of the attendees requested to attend the event again in coming years. One very excited attendee, Jeffrey Steiner with the USDA National Institute of Food and Agriculture posted immediately about his positive experience at the summit, “This meeting will help all involved develop a common vision for the science needed to bring these unique crops to more tables across the country.”

“We couldn’t be more pleased with how this turned out,” said McGreevy. “The attendees were extremely diverse, yet we had farmers in the audience having a discussion about biodiversity and farming practices with vegetarians, flexitarians, researchers, and food innovators,” he mused. “It was a great discussion, and a discussion we need to continue.”

Another summit is in the works. Rumney says that planning is underway for an event in November of 2018 on sprouting and fermentation as a pathway to innovation. 



**Jeffrey Steiner**

Division Director, Plant Production at USDA National I...  
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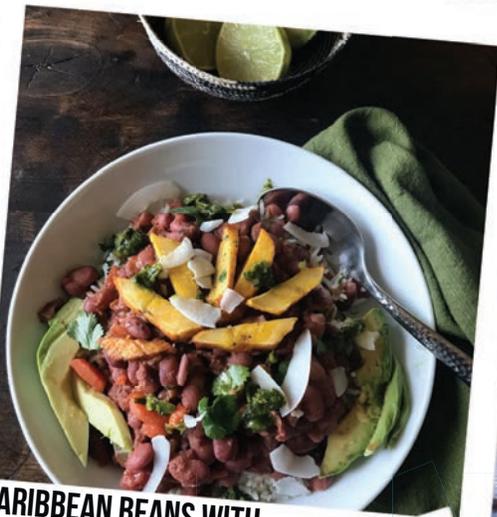
The Pulse Protein Innovation Summit is a great gathering of entrepreneurs, academics, and industry leaders who cover the entire landscape of value chain components for these crops, and their rapidly expanding product lines and markets. From agronomy and sustainability, to ingredients and formulations, to functionality, whole diets and their health effects - this meeting will help all involved develop a common vision for the science needed to bring these unique crops to more tables across the country. Thanks to the Good Food Institute and American Pulse Association for convening the summit.



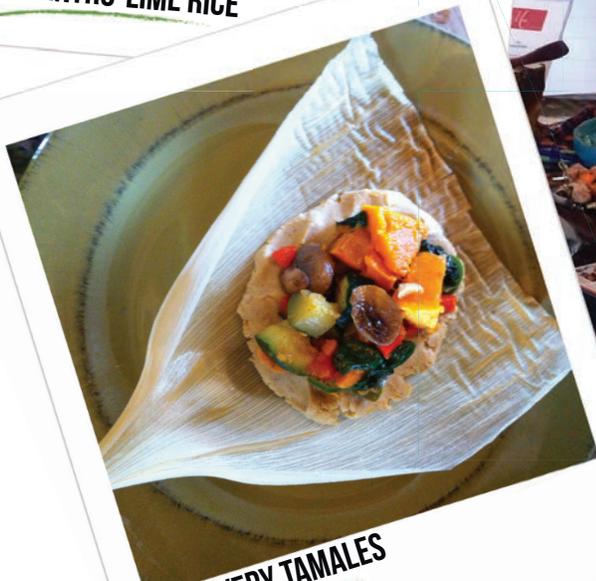
## PHOTOS

Clockwise from previous page, top: The Summit meeting room / plant-based faux shrimp and faux beef crumble / Jeffrey Steiner’s Instagram post / Summit participants brainstorming / Maggie Sadowsky, Food Scientist with The Culinary Architects.





CARIBBEAN BEANS WITH  
CILANTRO-LIME RICE



DISCOVERY TAMALES



SICILIAN LENTIL ARANCINI WITH  
LENTIL MARINARA



CHEF CLAUDIA GALOFRE-KRE VAT

# THE MAGNIFICENT SEVEN

**C**laudia Galofre-Krevat is a Colombian-born, Montana-based chef and culinary educator. Taking inspiration from the farmers around her, Chef Claudia has become a passionate ambassador for pulse crops, highlighting both their local origins and their global flavors. Claudia has created hundreds of recipes, hosted dozens of sold-out special events, and traveled the state with her *Lentil Caravan* cooking classes. In 2015, Claudia joined author Liz Carlisle for the *Lentil Underground* book tour, cooking for a 200-person event hosted by Michael Pollan and headlining her own event at Stanford University's Teaching Kitchen.

Chef Krevat agreed to develop this series of seven Latin-inspired recipes for the USA Dry Pea & Lentil Council and the American Pulse Association, and is currently completing her first solo cookbook, *Pulse of the World*.

Look for the reveal of these dishes on our social media outlets @USAPulses and #USAPulses. Until then, please enjoy Claudia's recipe for the *World Cup Peruvian Lentil-Quinoa Salad* on the following page.



**ANDALUCIAN GARBANZO LETTUCE WRAP**



**BRAZILIAN FEIJOADA/BLACK BEAN STEW**



**NEW WORLD PAELLA**

**Serves 8**  
**Gluten-Free & Vegan**

## WORLD CUP PERUVIAN LENTIL-QUINOA SALAD

Many soccer game countries in the world share more than just their passion for the sport, - they also share the use of pulse crops in their diets. This mash-up of culture recipes combines ingredients from the Peruvian Andes mountains, like quinoa, corn, cilantro, and tomatoes with Eastern Mediterranean ingredients like lentils. The result is a delicious fusion of cuisines, that make for a highly dense nutritious salad with over 18 grams of plant base protein.

### INGREDIENTS

- 1/2 cup dried pardina lentils, rinsed
- 1/2 cup dried off-white quinoa
- 1 cup fresh corn kernels
- 2 cups of water, divided, one cup for each quinoa and lentils
- 1 cup Roma tomatoes, cubed
- 1 cup English Cucumber, cubed
- 1 cup fresh Italian parsley, chopped fine
- 1 cup fresh cilantro, chopped fine
- 1/2 cup fresh mint, chiffonade
- 1/8 cup fresh lime juice
- 1/8 cup olive oil
- 1 teaspoon Kosher salt
- 1 teaspoon cumin

### DIRECTIONS

1. You can cook the lentils and the quinoa simultaneously as they will both take about 20 minutes each to be ready. Add one cup of water to a small pot. Heat water, and when it begins to boil, add lentils and lower to medium.
2. Meantime repeat the same for the quinoa. Soon after the water begins to boil, reduce heat to medium and allow to cook for 20 minutes or a bit more. Stir at times as it tends to stick to the button of the pot.
3. When both lentils and quinoa are ready, remove from heat. For the lentils, drain in a large colander and run cold water to allow it to cool off quicker. Place in a large bowl. Do the same for the quinoa.
4. Combine quinoa and lentils in a large bowl and place in the refrigerator and allow it to cool off quicker.
5. Once mixture is cool, incorporate the tomatoes, corn, cucumbers, and herbs.
6. In a cup, add the olive oil, lime, cumin, and salt; stir.
7. Add mixture to salad and blend.
8. Allow flavors to marry for at least half hour.
9. Serve in a bowl and enjoy.
10. You can top with queso fresco for a World Cup finished look.



*Tim McGreevy explaining the many benefits to cooking with pulses to a group of professional chefs to launch the Pulse Innovation Miami event.*



*Howard Jones addressing the crowd.*



*Roger Sammons chatting up a chef.*



*Tim McGreevy with Pulse Canada's Courtney Hirota.*

In March of 2018 the USA Dry Pea & Lentil Council (USADPLC) and the American Pulse Association (APA) partnered with Pulse Canada to host the third annual “Pulse Innovation Miami” conference, an immersive event aimed at educating large-volume chefs and culinary professionals about the benefits of adding more pulse ingredients to their menus. The objective of the event was to create opportunities for these executive chefs to promote pulses in their plant forward menu choices.

“Consumer research shows that 51% of consumers will try a new food item in a restaurant before cooking it at home,” explains Tim McGreevy, CEO of the USADPLC and the APA. “Training food service professionals on how to create delicious pulse dishes is a key strategy for increasing consumption of all pulse crops in the United States.”

The participants were Executive Chefs carefully selected from the professional food industry, ranging from restaurant chains, airlines and hotel brands, college and university campuses, and contract foodservice providers to attend the Culinary Institute in Miami event. The organizers of this collaborative North American Pulse Marketing Campaign event offered several presentations about the health, nutrition, sustainability and affordability of pulses.

The majority of the day included an interactive session with pulse growers followed with culinary demonstrations by fellow chefs showcasing the versatility of pulse ingredients in dishes like black bean and pork blended meatballs, pulse smoothies, pulse forward salads and a chocolate dessert mousse made using aquafaba (the water obtained by soaking chickpeas and beans).

The interactive session that introduced chefs to pulse growers turned out to be a big hit with the participants. Genesee, Idaho pulse grower Howard Jones and Montana grower and



*Clockwise from bottom left: Sammons enjoying a Chef Christine Farkas pulse cooking demonstration / USA Pulse representatives commanding an audience / Sammons addressing the chefs.*

transloader, Roger Sammons discussed their respective farming operations and participated in a robust and lively question and answer session. Riley Philo, the chef for the Sawgrass Marriott Hotel, responded in a follow-up survey that, “The growers were the icing on the cake. Few times do we get to talk to growers and learn about the other side of our food.”

Lorien Vilchez, a chef with Four Seasons in Miami stated, “I wasn’t sure what to expect, so it was amazing. Very refreshing and informative. I love the farmers!” And, it seems Jones and Sammons felt that connection.

“It was amazing how interested each chef was in the farmer’s story. I truly believe we could have discussed the farmer’s perspective for much more than the hour we were allotted,” said Sammons. “The questions were awesome, and they truly wanted to know how pulse crops affected our farming operations. This was truly a gathering of very passionate people.”

Chefs then transitioned to a hands-on event for the remainder of the day, sharing the professional kitchens to create their own pulse inspired dishes. Imagine a lamb and red lentil merguez with chickpea flatbread, pork & red lentil croquettes with mustard aioli, lentil-mushroom chorizo, chickpea blueberry muffins, lentil oatmeal

topped with fruit and nuts and chives, chickpea fries with blood orange harissa, aquafaba aioli and pickled chickpeas - all creations of the visiting chefs.

Jones was amazed at the level of professionalism displayed by all of the chefs involved. “The event was an eye-opener for me. I do not have much of an idea about the quantities and qualities of basic food ingredients that are required to serve a large number of people,” Jones said with admiration. “One of the chefs stated that his group serves 60,000 meals a month. I would find that a real challenge to satisfy that many people and their changing habits and tastes.”

Feedback from chef participants was very positive. Zack Lorber, a chef at Penn State University said, “I spent several hours today with our dietitians and chefs looking for ways to incorporate more pulses into our operations. Everyone is very pulse positive today.”

The event concluded with an invitation-only reception for media, local chefs, and influencers at *Tuyo*, a fine dining establishment that is located on the top floor of the Miami Culinary Institute. 80 guests attended the reception that featured an all-pulse menu including beluga lentil caviar spoons, black bean chocolate mousse, aquafaba macaroons,

croissants stuffed with beet and chickpea hummus, and wine-braised beluga lentils with coconut corn arepas.

McGreevy thought the U.S. pulse growers did a fantastic job representing the pulse industry at the event and felt the chefs that participated in the event would be new ambassadors for the benefits of pulses in restaurant menus. “The Pulse Miami resulted in another 20 food professionals who will help us continue the pulse revolution,” claimed McGreevy. “I would like to thank Roger Sammons and Howard Jones for participating in the grower panel during the pulse Miami event. It was one of the most popular sessions of the day.”

As for growers Howard and Roger, their trip to the Miami event was both a privilege and a unique experience, respectively. “My biggest takeaway from the event was the interest chefs had in meeting the growers of the food they cook,” said Sammons. “There is a tremendous opportunity for individual producers to align themselves and their pulse crops with end users such as hotel chains, food service companies, and restaurant chains. The chefs want to tell the farmer’s story with the food products they create.” 



DR. BOB HARVESON, UNIVERSITY OF NEBRASKA-LINCOLN

# Chickpeas' Perplexing Past

**I**n the state of Nebraska, summer fallow is considered a crop rotation in the semi-arid climates, but many farmers are discovering what farmers of Idaho, Montana, North Dakota, and Washington already know, pulses help the bottom line. Field pea acreage in particular has been steadily growing in Nebraska for the last few years, increase from 10,000 acres in 2011 to 60,000 acres in 2017. Recognizing the potential, the number of certified seed dealers have increased from only two to eight.

Dry peas as a “gateway pulse” in Nebraska makes perfect sense, they require little water to grow, and rebuild the soil for following crops. Chickpeas and lentils have a lot of potential as well. However, both crops are a little trickier to grow for the first-time pulse producer. Chickpeas in particular are susceptible to *Ascochyta* blight, and require care to avoid a complete loss from the disease.

In the following article, printed originally in the *Phytopathology News* as “A Plant

Disease Alters Ancient Agricultural Practices”, University of Nebraska-Lincoln plant pathologist, Dr. Bob Harveson explores the ancient chickpea and the perplexing disease that plagues it. It is presented in a form based on Paul Harvey’s “Rest of the Story”.

## Introduction

The chickpea (*Cicer arietinum*), also known as the garbanzo bean, is an annual grain legume and is a staple crop and important source of protein in central Asia, Africa, India and the Mediterranean. It also is one of the eight Neolithic founder crops responsible for the origins of agriculture, being first domesticated by early farming communities in a region known as the Fertile Crescent in the Near East, before expanding into India and Africa.

The eight founder crops include three cereals (einkorn wheat, emmer wheat, and barley); four legumes (lentil, pea, chickpea and bitter vetch); and one oil and fiber crop (flax or linseed). All of them except chickpeas follow a set pattern of fall germination, flowering in

late winter-early spring, and maturation in early summer. The chickpea crop is spring-planted and this cycle shift is thought to be due almost exclusively to a single plant disease. That is the rest of the story.

## Wild Chickpea

The wild chickpea, *C. reticulatum*, is presumed to be the progenitor of the cultivated form. It is a small, relatively rare plant endemic to southeastern Turkey and is confined mostly to shallow, limestone soils. It requires a certain vernalization period to properly germinate and yields are better in winter when adequate water levels are present. In this region most of the rainfall occurs between December and February and any crop sown after February would depend on existing soil moisture for adequate growth and flowering.

## Chickpea Domestication

The chickpea is thought to have been domesticated about 11,000 years ago. The domesticated form is now planted during spring for summer harvest. It is also well known that this practice results



## ASCOCHYTA BLIGHT SYMPTOMS IN A CHICKPEA FIELD IN NEBRASKA

in a substantial yield penalty. For example, chickpeas planted in the fall routinely yield 2–2.5 tons/ha more than spring-planted crops. Therefore, cropping over the winter should be the practice of choice, but it is not. Although it has been done this way for thousands of years, the question has been raised: Why did ancient farmers stop planting in the fall despite its obvious agronomic benefits? There must have been a good reason for sacrificing high yield potential for the much lower and unstable yields obtained with a system planted in spring.

This question was answered from experiments conducted in the early 1960s in Israel, and results clearly implicated a disease called Ascochyta blight as the major yield inhibiting factor. Fall-planted trials survived the winter, but were destroyed by the disease in spring. Spring sown crops were able to avoid the disease but yielded much less (<1.0 t/ha). Some fall-planted, partially disease-tolerant lines produced 70% more seed yield than the spring-planted crops, while disease-susceptible crops planted in fall yielded nothing. It was thus concluded that blight was the primary reason ancient farmers in the Near East modified the planting of chickpeas to the spring and not because of freezing temperatures or some other

abiotic force.

### Ascochyta Blight

Ascochyta blight is a fungal disease caused by *Didymella rabiei* (formally *Ascochyta rabiei*) and is considered worldwide to be the most damaging and important disease affecting chickpeas. It affects all above-ground plant organs, and under the proper environmental conditions it can be a devastating disease that spreads among and throughout fields in astonishingly short periods of time. Conditions favoring infection include cool temperatures (65–70° F), high humidity, and water splashing (rainfall). Thus disease development and spread is strongly enhanced by periods of rainfall during the cropping season, which is characteristic of the Near East over late winter-early spring. A fall-planted crop would have a fully closed canopy at this time and be more susceptible to blight epidemics.

### Conclusions

It is now speculated that after domestication, chickpea production was abandoned as a field crop until the warm-season species were introduced from Africa and Asia before being integrated into cropping systems in the Fertile Crescent areas of the Near East. Archeological records support

this concept. They suggest that chickpea production began at the end of the pre-pottery Neolithic age (9,000 to 10,000 years ago), suddenly vanished, and then reappeared in the early Bronze Age (6,000 years ago) after the initiation of farming. The difficulty in growing the crop over the winter seemingly explains its scarcity during that gap period and that the conversion of planting chickpeas in spring must have started after the initiation of farming (Bronze Age). All due to a plant disease! Now you know the rest of the story.

Bob Harveson is the Extension plant pathologist stationed at UNL's Panhandle Research and Extension Center in Scottsbluff, Nebraska. 

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# THE NEXT PHASE HALF-CUP HABIT

BY JOSIE CURTIS, SENIOR COUNT EXECUTIVE @ MAXWELL PR & ENGAGEMENT

2017 was another great year for pulses! Find out about the next phase of increasing consumer pulse consumption. Maxwell PR & Engagement is the public relations firm responsible for implementing the North American Pulse Marketing Campaign.

*Pulses made the top of the list of NBC's Today Show's Tasty Trends.*



If 2016 made pulses a star superfood among health-focused consumers, 2017 made them a mainstay in kitchens across the continent. The 2017 Half-Cut Habit campaign built on the awareness and devotion to pulses we built in 2016, and was designed to generate additional awareness, educating a broader consumer set on pulse benefits and to address one of the key hurdles to pulse consumption we've identified through research: ease-of-use.

Throughout the year we engaged new audiences to further increase pulse consumption and generate impressions (more than two billion!).





The Split Pea Avocadas sound amazing. Can't wait to try!

The Italian Lentil Stuffed Tomatoes are absolutely delicious!

This was an easy and tasty recipe. Thank you!"

In addition to consumers becoming more comfortable regularly adding pulses to their home-cooked meals, the industry saw incredible growth as well, with just under 900 new products containing pulses coming to market in 2017.

At the core of the 2017 campaign was a new website for the U.S. and Canada pulse industries, which drew **more than one million unique visitors throughout the year (300,000 more than our goal!)**. The site is also home to the Half-Cup Habit challenge, where we reached our sign-up goal with **50,000+ consumers committing to eat pulses three times per week for four weeks.**

### Website Draws in More than One Million Unique Visitors in 2017

The updated North American website [www.pulses.org/nap](http://www.pulses.org/nap) presented an opportunity to highlight recipes, quick and easy meal ideas (an increasing consumer need), preparation tips and more. Our expanded audience of health-focused Millennials, Boomers and Gen Xers repeatedly came to the site and tried many of the recipes, accounting for more than 3.3 million page views (see some recipe reviews above).

### From Health Food to Habit

While 2016's Pulse Pledge encouraged consumers to eat a minimum of one ½ cup serving of pulses each week for ten weeks, the Half-Cup Habit challenge upped the minimum commitment each week in an effort to increase pulse consumption and establish regular eating habits, while also aligning with the USDA nutritional recommendations for healthy eating patterns.

Taking learnings from 2016 that health and other benefits alone weren't enough to make them a household staple, we put an increased focus for the challenge on fast, easy, family-friendly recipes, recipe collections and meal plans (e.g. "5-Ingredient Recipes," "30-Minutes or Less" etc.) and simplified prep tip guides, and we provided these materials to consumers via weekly and monthly e-newsletters, and driving to the website.

The Half-Cup Habit program officially kicked off June 21, 2017 with more than 160 social media posts from food blogger and health influencer partners promoting the campaign launch, reaching an audience of 10.8M and resulting in more than 3,000 Half-Cup Habit sign-ups in just the first day, and more than 50,000 signups by the

end of 2017.

### Two Billion Impressions and Beyond

Overall, the Half-Cup Habit promotion was (and continues to be) a huge success, reaching nearly the same number of sign-ups in just six months than the Pulse Pledge garnered in a year.

Key highlights from the 2017 campaign, totaling more than two billion impressions overall, are included here.

- Half-Cup Habit: 50K+ (June 21-December 31, 2017)
- Earned Media: 1.76B impressions in 389 stories
- Social Media Ads: 72.7M impressions, with 174K new followers
- Influencers: 80.1M impressions
- Ambassadors: 59.4M impressions via 52 ambassador posts
- Native Content: 23.1 M impressions
- Website: 3.3M page views via 1M unique visitors

And, with pulses featured as one of the top food trends for 2018 in a January 10 segment on TODAY, the movement shows no signs of slowing down!





## PETER KLAIBER RIDES THE RAILS ALL ABOARD?

Once upon a time, a young man was in a one mile race. Four laps around the high school track. He took the lead right from the starting gun. As he entered the last lap, he was still in the lead. His split time at the 3/4 mile mark was his fastest ever. He was sure that his fellow runners were starting to fall away, burned out by the fast pace of the first three laps, and that he would cruise home to victory. But then he heard a voice over his right shoulder. In a matter-of-fact tone, the voice said softly, "Excuse me, I've got a train to catch." And then there was a blur as a competitor shot past that surprised young man and went on to victory by a wide margin.

Why do I tell you this story? After eighteen years, I am retiring from my marketing position at the Council. During my time here, my primary focus was on our export markets. I knew that domestic interest in pulses was on the increase as well, but I thought that home-grown demand did not have a chance to overtake

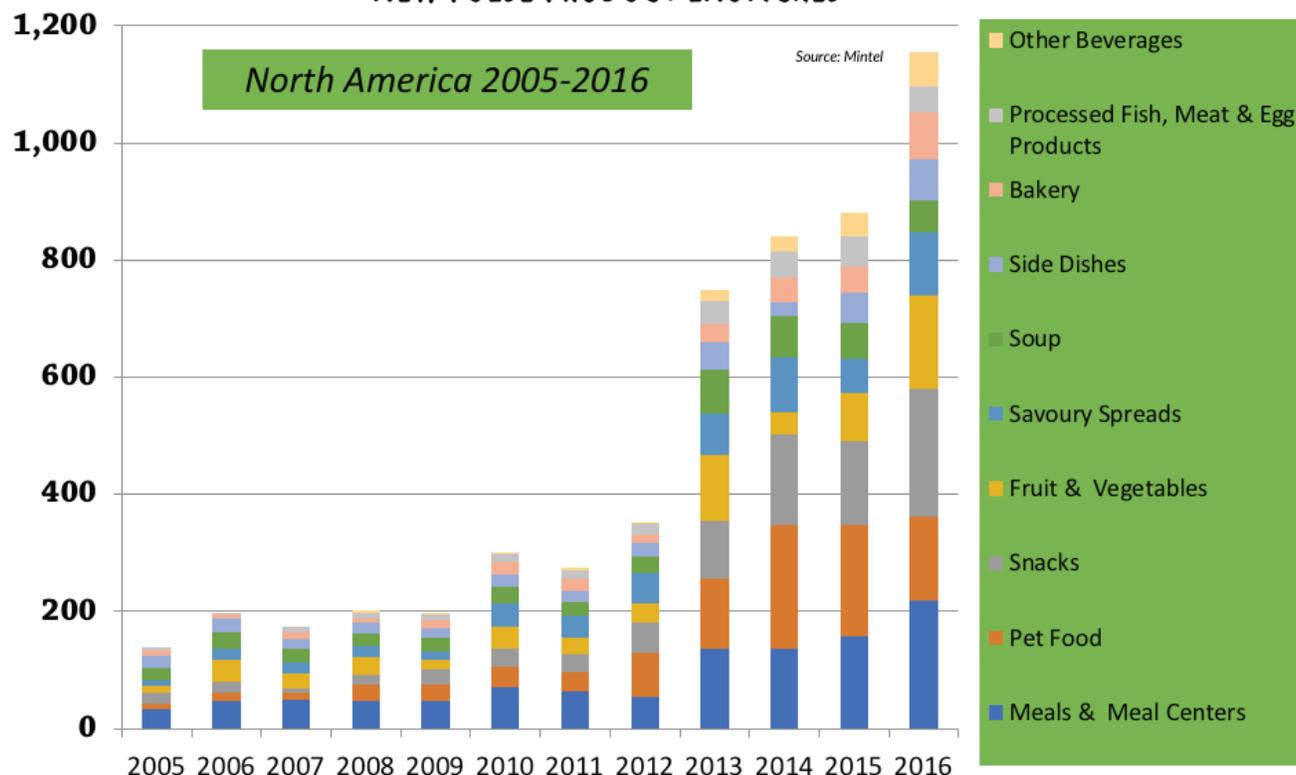
our export sales in the short term. It wasn't that I was blind to changes in the marketplace; I could see pulses were finding new uses in pet food, flours, protein concentrates and other value-added applications. But frankly, I didn't think those uses would expand so quickly. Then the International Year of Pulses and the North America Pulse Brand campaign super-charged domestic demand, and domestic sales surged to the front. I was as surprised as the young man in the mile race.

First, let's give credit to the people who created and executed a strong market development plan: Jennifer William (née Roberts) re-energized our domestic marketing efforts when she joined the Council in 2005. In 2006, Jennifer drafted a five-year strategy for domestic promotion. She reached out to food manufacturers and put together our first training course, using the Culinary Institute of America to familiarize food industry R&D staff with the versatility of pulses. >>>



Clockwise from top: Pete enjoys a cigar with golfing buddies, (L-R) Pete Johnstone, Dean Brocke, Pete, and Dirk Boettcher / Pete's favorite post-USADPLC activities / Pete with international marketing reps, Pornnicha Sathujarun and Dee Richmond (center). Opposite Page: 2016 International Year of Pulses marked the beginning of a new era of domestic marketing for pulses / Pete organized the USPLTA annual golf tournament for 18 years, seen here with Mike Quann, Chair of the Domestic Marketing Committee.

# NEW PULSE PRODUCT LAUNCHES



In 2011, Jennifer returned to her hometown of Chicago, and Ali McDaniel joined the staff and picked up where Jennifer left off. Ali created the Cooking With Pulses website to appeal to consumers, and expanded our training work at the CIA. She also racked up a lot of frequent flyer miles as she went to trade shows, conferences, seminars for R&D food scientists, and industry conventions. Ali left us in 2013 to return home to the Atlanta area. (Note: During their tenures with us, Jennifer kept Illinois license plates on her car, and Ali did the same with her Georgia plates. That might have been a hint that they were both feeling a little homesick.)

Mackenzie Christensen (née Lilwall) replaced Ali. She hit the ground running, expanding our social media outreach as we became active on Facebook, Pinterest and Twitter. As part of the social media campaign, she worked with outside consultants to create a brand and an effective messaging strategy. Mackenzie also took us to a whole new level of trade show participation by including cooking demonstrations and special events. Mackenzie was lured away by ADM in 2015, and more recently has been promoting pulses at AGT Ingredients in Bismarck ND.

Then came Jessie Hunter, who assumed a key role in our branding and promotion efforts just before the kick-off of the UN International Year of Pulses. For two years, Jessie was indefatigable in her efforts — juggling a heavy travel schedule, multiple state grant activities, and brand campaign management to make IYOP a success. She launched the Powered by Pulses cooking competition, got pulse flours listed in the USDA School Buying program for school lunches, coordinated the national Pulse Feast event, and helped transform the momentum of IYOP in 2016 into a North America Brand Campaign in 2017 that increased positive market awareness of pulses. At the end of 2017, Jessie stepped aside, looking forward to spending more time with her family.



Now we are about to begin a new chapter in this story with the naming of a new Director of Domestic Marketing in 2018. The position has evolved over the years, and will continue to do so. Nowhere will that be more apparent than in the ways we communicate with our target audiences. We have seen social media help us reach the public in a way we could never afford using traditional media. But it will take a special formula that combines relevance, timeliness, engagement and utility to continue our success. Our message will have to change and grow within the context of the evolving messaging platforms that we use. That will be a challenge for our industry in general, and our new Director of Domestic Marketing in particular. I'm confident that it is a challenge that will be met.

Our domestic marketing efforts are racing to the front and show no signs of slowing down. I can hear a voice over my right shoulder saying, "Excuse me, I've got a train to catch." 🚗



USA Dry Pea & Lentil Council  
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