

*take your*  
**PULSE**

JANUARY 2013 - Vol. 2, No. 2

# On the Pulse Front

Dear Pulse Industry Member,

If they gave an Olympic medal for the number of weeds in a field, I would have earned gold in my 2012 chickpea crop.

My father was a crop advisor for over 36 years. He had passion for healthy crops and clean fields. This summer I could feel him rolling over in his grave as he looked upon a very healthy crop of prickly lettuce and dog fennel. I sprayed the field with the latest pre-emergence herbicide technology at the labeled rates. But the weeds broke through and there was not much I could do except beat myself with a prickly lettuce rope.

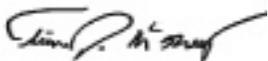
Dry peas, lentils and chickpeas have never had the arsenal of crop protection products enjoyed by the cereal grains. Currently our options are limited to mostly pre-emergence herbicides that require the right environmental conditions to work properly. Pulse crops need a post emergence herbicide in the worst way. Good weed and disease management strategies require long-term research investments. The USADPLC continues to invest and work with our scientists and crop protection providers to find solutions to the pressing weed and disease problems facing our crops.

**Historic Crop Revenue Option:** Weeds and diseases are a problem but so is the enormous financial risk farmers take to plant, grow and harvest pulse crops in the face of uncertain weather. In the spring of 2013, the USDA/Risk Management Agency (RMA) will, for the first time, introduce a revenue coverage option for producers of dry peas, lentils and chickpeas. The USADPLC has been aggressively pursuing crop revenue coverage (like wheat CRC) since 1999. USDA/RMA announced a four-year pilot program for pulse producers in WA, ID, MT and ND. The pilot requires industry processors and your state check off organizations to work together to provide critical data to RMA to help establish the initial price election and the harvest price. For the first time in history farmers will be able to select a revenue option when they sign up for crop insurance this spring. Talk to your insurance agents.

**Farm Bill:** Congress decided to extend the 2008 Farm Bill for nine months on January 1, 2013, as part of the "fiscal cliff" deal. The farm bill extension was opposed by every major farm organization, including the USADPLC. We take a look at the farm bill extension and what lies ahead in the 2013 farm bill debate on page 20.

In the last edition of this magazine I told you of my decision to seed large Kabuli chickpeas directly into standing stubble with a cross-slot drill on our small farm north of Pullman, WA. I was pleased with the seed emergence. The crop came through the wet spring conditions in pretty good shape. Despite all the weed problems facing the crop the chickpeas yielded 1,250 pounds/acre and were 85% large beans.

Sincerely,



Tim D. McGreevy, CEO



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*Many thanks to our editor and former Communications Manager, Erica Beck who created and compiled this edition.*

 USA Dry Pea & Lentil Council

# What is driving Chinese pea imports?

*Pete Klaiber, USADPLC Director of Marketing*

China's dry pea imports jumped by 32% in 2011, reaching a record 730,484 metric tons (source: Global Trade Atlas). Perhaps more impressive is the prediction by one Chinese importer, Mr. Zhang Baosheng of COFCO-Shandong Vermicelli & Bean that Chinese dry pea imports will soon exceed one million metric tons annually. What is driving Chinese pea imports higher?

First of all, China's dry pea production is declining. While accurate pea production data for recent years is not available, Chinese pulse industry sources agree many farmers are reducing plantings of dry peas. Farmers who have been producing dry peas on marginally productive fields are shifting the land to other uses, such as orchards, often with government encouragement.

Secondly, China's domestic pea crop is plagued by poor seed quality, so most Chinese pea fields produce a mix of varieties and classes. Since processors prefer peas uniform in size and color for processing efficiency and end-product quality, the poor quality domestic production has limited uses. In addition, much of China's pea production lies to the west of the industrialized coastal region where the value-added processors are located. That means domestic dry peas have to

be shipped eastward by rail, which has a higher cost per ton than the ocean-going freight that supplies peas from North America.

Thirdly, while production is falling, China's demand for dry peas is rising. China is second only to India in pea imports. Most of China's pea imports are dry yellow peas. Traditionally, yellow peas have been used as a source of starch for the production of noodles. In the past, Chinese noodle-makers extracted the starch from the peas and then sold the byproduct into the animal feed chain. Recently, however, processors have realized fractionating dry peas into starch, protein and fiber yields three value-added products to sell instead of just one. That makes dry peas more profitable than alternative starch sources, which in turn is spurring more demand for yellow peas.

China's snack makers are also showing an increasing preference for better quality whole green peas. Chinese snack makers fry whole green peas and add flavor coatings such as wasabi. While snack makers have favored marrowfat peas in the past, global marrowfat production falls far short of the volumes needed for snack making. Just as snack makers in the Philippines and Indonesia have come to appreciate how well US dry peas

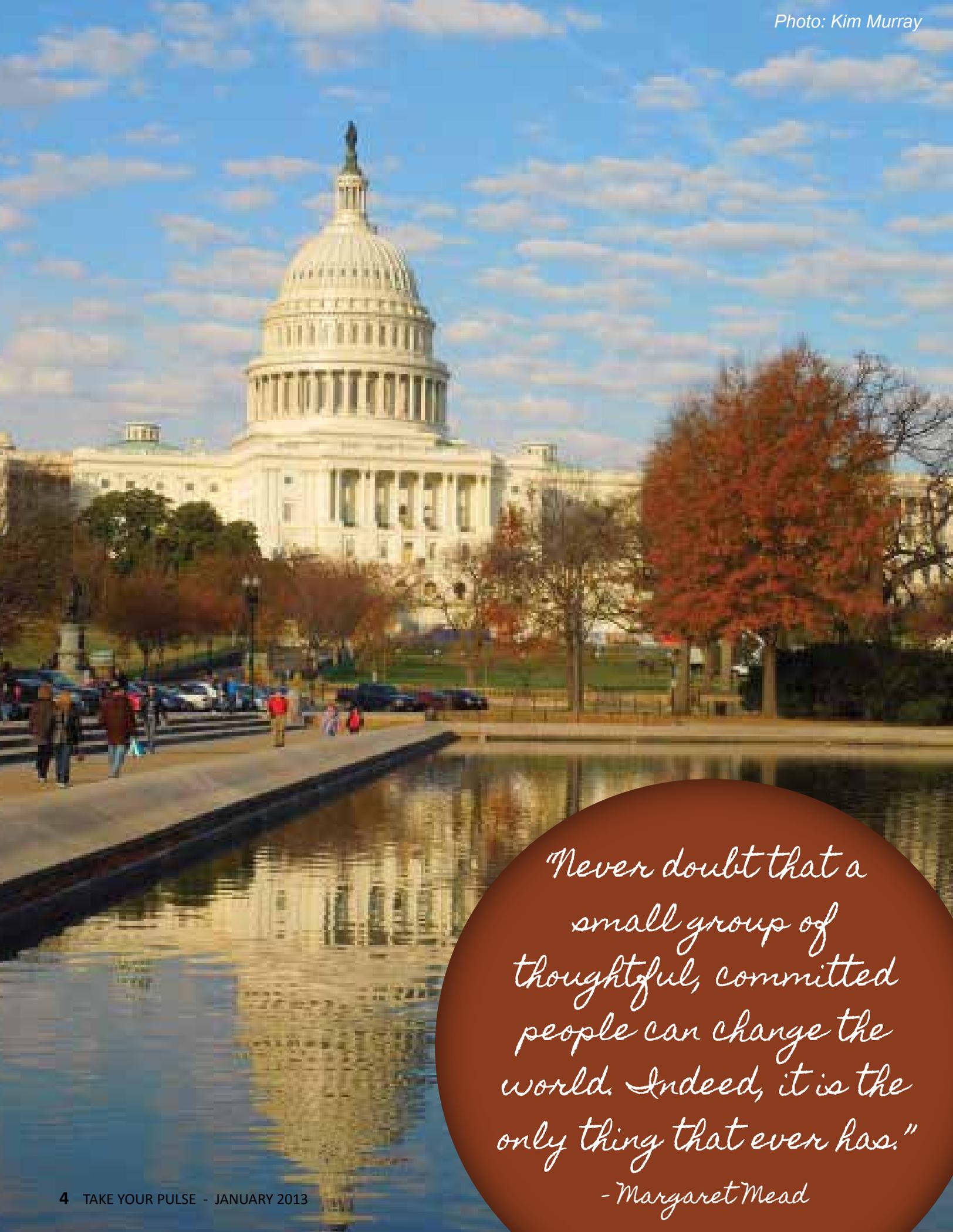
work in fried snacks – due to good green color, uniform size and lack of hard seed – Chinese snack makers are learning the US can supply better peas for snack production. A trade mission of pulse buyers from China visited the US this fall and was impressed with the quality of US green peas.

In addition to trade missions, USADPLC is using trade shows in China to promote US cool-season pulses to Chinese importers and end-users. Shows such as the Food Ingredients China show, held annually in Shanghai, give USADPLC the opportunity to promote US dry peas to a wide variety of Chinese food manufacturers, in applications from fried and extruded snacks to pea protein isolates. Chinese companies have also become familiar with value-added applications for US pulses through training at the Northern Crops Institute at North Dakota State University. Some of the 'graduates' are now producing pea protein concentrates in China.

With a large population, an expanding middle class that is willing to pay a premium for quality, a rapidly developing food manufacturing sector and declining domestic pea production, China looks like a growth market for US dry peas for many years to come.

*The noodle-making process.*





*"Never doubt that a small group of thoughtful, committed people can change the world. Indeed, it is the only thing that ever has."  
- Margaret Mead*

# Changing the world in WA DC

Todd Scholz, USADPLC Director of Research & Information

Margaret Mead was not speaking of the USA Dry Pea & Lentil Council (USADPLC) in this famous quote, but the USADPLC does work to be among the groups which she describes. The Council works hard to change the world and increase consumption of dry peas, lentils and chickpeas. One method the Council uses to accomplish this is the annual mission to Washington, D.C.

You might ask why the Council would invest in such a venture each year. With public respect for Congress at an all-time low, government budget deficits creating questions about program funding and the public support for commercial agriculture decreasing, it is a valid point. Education is the goal. Government policies from farm bill to transportation affect this industry. Visiting government officials in their offices at the Capitol is the best way to educate them. Traveling to DC shows commitment to the issues and conveys the importance of the message. This makes an impact.

Being there is not the only way to make an impact. The team consists of two producers from each of the four major producing states of Idaho, Montana, North Dakota and Washington. Two representatives of the trade representing processors, exporters and warehousemen also join the team. Finally, the USADPLC officer team and the CEO round out the group. These representatives of the industry involved in the day to day operations from farm to fork help convey the importance of the message from a variety of perspectives.

Perspicuity is built into the Industry message by the process for approval of the policies. Each year, the policies are edited, reviewed and approved

by all the organizations represented by the DC team. The industry is committed to these policies and while the team meets personally with the officials, letters, emails and phone calls from the membership add to the process. The work of this small group is amplified by the additional support from the wider industry membership.

Due to the work of these teams over the last two years, Congress nearly enacted a farm bill with language authorizing the Pulse Health Initiative (PHI) in 2012. The PHI aims to increase the amount of research in nutrition, functionality and sustainability of pulse crops. The PHI language included \$25 million per year for five years in the 2012 farm bill draft, but the extension passed January 1, 2013, requires the process to begin again. Current industry investment in pulse research is valued at \$1.2 million per year. Research investment in pulses will change significantly when the PHI is approved.

The Farm Bill is not the only mechanism for change that the team focuses on. The team visits over 70 different government agencies and Congressional offices in a matter of three days. One agency that has been a consistent focus is the Risk Management Agency (RMA) of the USDA. RMA is in charge of crop insurance. After 13 years of working with RMA officials and explaining the importance of having a revenue-based crop insurance for pulse crops, RMA approved a pilot revenue insurance program for dry peas, lentils and chickpeas in ID, MT, ND and WA. Without the visits each year by producers and traders explaining the importance of this program, RMA never would have

approved a pilot. This program will provide a crop insurance product which guarantees production and revenue for pulse crops similar to current insurance provided for wheat. Sometimes commitment is about patience!

Commitment to markets, especially exports is fundamental to the USADPLC. The DC team makes calls on Foreign Agriculture Service representatives, the US Trade Representative Office, USDA Grain Inspection, Packers and Stockyards Administration (GIPSA) and Animal and Plant Health Inspection Service (APHIS). All of these agencies have an impact on exports, and it is critical to coordinate, educate and work with these agencies to reduce the impact of non-tariff barriers the industry encounters. Another emphasis of the annual mission is the Private Voluntary Organization (PVO) dinner. PVO representatives are a key element in the PL 480 (Food Aid) part of pulse market. Each year, the team invites these PVO representatives to a dinner to explain the value of dry peas, lentils and chickpeas as food aid. These customers are looking for value, and pulses provide nutrient dense food in a storable package that cooks fast. The PVO dinner provides a forum with committed representatives of the industry to explain to them the quality of dry peas, lentils and chickpeas and remind them of the value they get with pulse crops.

The industry trip to DC is not really what Ms. Mead was speaking of, but it really does work. It provides a great opportunity for a small group of committed and thoughtful individuals to educate key people in government and in industry so we can truly change the world.

# STEMPHYLIUM

## *an emerging disease*

Stemphylium blight of lentil, caused by the fungus *Stemphylium botryosum*, has historically been an especially destructive disease of red lentils in Bangladesh and India, where losses in highly infested fields may be greater than 60%. The disease is regularly observed on lentils in Canada, and outbreaks of the disease have been observed recently in North Dakota. At disease onset, stems are healthy, but leaflets exhibit angular zones of light brown to tan discoloration. When relative humidity is high (early mornings and after rainfall events), *S. botryosum* sporulates and diseased leaves take on a gray to black appearance. Under conditions favorable for the disease, lesions quickly coalesce to cover entire leaflets, leaf drop occurs, and plants are left defoliated. Often, only the terminal leaves at the tops of plants remain. As the disease progresses, tan to light brown stem lesions develop from the tips of diseased compound leaves and defoliated branches. Along with leaves and stems, the pathogen also infects flowers, resulting in incomplete flower development. Besides reducing yield, *Stemphylium* blight of lentil can result in small and discolored seeds.

The fungus that causes *Stemphylium* blight, *S. botryosum*, is a very successful pathogen with a host range of over 50 plant species, including both legumes and non-legumes. It is globally distributed across all continents except Antarctica. The fungus survives in the winter on infested plant debris or perennial hosts such as alfalfa and clover. Asexual spores (conidia) of the fungus are borne by air and water to the surfaces of leaves and stems, where infection begins. Disease development is favored by extended periods of high canopy humidity and temperatures above approximately 60°F. In Canada and the US Northern Plains, disease outbreaks are observed when heavy rainfall and/or extended periods of high relative humidity occur late in the growing season, and they are most severe in closed lentil canopies, which trap humid air. The disease infects seed, but seed-to-seedling transmission of the disease has not been demonstrated.

The disease can be managed with fungicides and the use of tolerant varieties. Studies in Bangladesh have indicated that fungicides can be effective at managing *Stemphylium* blight on lentils, but the efficacy of fungicides registered for use on lentils in the United States is largely unknown.

Limited data from Canada suggests that Headline (pyraclostrobin) may control *Stemphylium* blight, but Headline has not been rigorously tested against this disease on lentils. To be effective against *Stemphylium* blight, fungicides will likely need to be applied in the last third of the growing season; applications made at bloom initiation or canopy closure are unlikely to be effective. Limited genetic studies have suggested that resistance to *Stemphylium* blight in lentil is controlled by the cumulative action of several genes. No lentil varieties are completely resistant to *Stemphylium* blight, but some varieties are less susceptible than others. Observations made in regional lentil variety



# BLIGHT

## *of lentil*

trials in North Dakota in 2011 suggest that significant differences in susceptibility to *Stemphylium* blight exist among commercial lentil varieties.

Heavy rainfall events were common across much of North Dakota in late July and early August 2011, and outbreaks of *Stemphylium* blight occurred in several of the regional variety trials. In the variety trials in which *Stemphylium* blight developed, 'Morena', a Spanish brown type, consistently exhibited severe canopy defoliation due to *Stemphylium* blight. 'CDC Greenland', 'Pennel', 'CDC Red Rider', 'CDC Richlea', and 'Riveland' were much less susceptible. The susceptibility of Morena identified in trials in North Dakota was similarly observed in the US Pacific Northwest in 2012, where *Stemphylium* blight was detected in Washington and Idaho in fields where Morena was grown for seed increase. In 2013 we will increase monitoring of fields in the Pacific Northwest for this disease. Additional sources of resistance in Spanish Brown lentil lines will also be identified that will be used as parental materials to develop new varieties that combine desirable agronomic and seed quality traits with enhanced resistance to *Stemphylium* blight.



*Above:* Leaf symptoms of *Stemphylium* blight on lentil observed in Idaho

*Left:* Defoliation and pod infection symptoms of *Stemphylium* blight on lentil observed in North Dakota

*Dr. Weidong Chen - USDA-ARS, Washington State University*

*Dr. Michael Wunsch - North Dakota State University CREC*

*Dr. George Vandemark - USDA-ARS, Washington State University*

# Pea Seed-borne Mosaic Virus

## History,

In 2012, Pea Seed-borne Mosaic Virus (PSbMV) was identified from several locations in Montana and North Dakota. PSbMV is a widespread virus disease affecting peas, as well as other pulses, including chickpeas, lentils and faba beans, and some 45 other plant species. The disease may cause significant economic losses (both yield and quality) in conducive environmental conditions.

the University of Wisconsin, Cornell University and USDA-ARS, started screening the USDA germplasm collection looking for sources of resistance. Pea germplasm resistant to PSbMV was identified by Hagedorn and Gritton in two Ethiopian lines (PI193586 and PI193835), and in several accessions from India. A number of pathotypes of PSbMV have since been identified and resistance to each pathotype is governed by unique, single recessive genes. Serological tests confirmed that Pea Fizzle-top was a variant of the European Pea Seed-borne Mosaic Virus and the name was changed in 1974.

Today the disease occurs worldwide, and there are effective management strategies and resistant varieties available. Commonly available resistant field pea varieties include Aragorn, Lifter, Ariel and Cruiser.

### Identification

In peas, the first leaflets produced after infection show swelling of veins and transient clearing. Leaves show downward rolling, mild chlorosis, mosaic and general stunting. Seedlings from infected seeds show the most severe symptoms. Downward leaf rolling may also be accompanied by tight curling of tendrils. Internodes progressively shorten, resulting in a terminal rosette. Pods may be deformed or fail to set. Early infection may result in no flowers or distorted flowers and pods. Grains from infected plants often show cracked, split or banded (like baseball stitches) seed coats.

However, not all infected plants show typical symptoms. Some infected plants may show only mild symptoms

PSbMV was first identified in North America in 1968 from commercial fields in Eastern Washington and Wisconsin. The new disease was named 'Pea Fizzle-top' to describe what infected plants looked like at maturity. The disease was wide-spread throughout the Pacific Northwest and the Upper Midwest. Many breeding nurseries were destroyed in an effort to contain the disease.

Plant pathologists and plant breeders, primarily at Oregon State University,

Fig. 1 Infected pea plants showing symptoms of PSbMV disease



Fig. 2 Yellow pea seeds showing banding and crack



# Identification & Management

or no symptoms at all, and some seeds carrying the virus may appear normal.

Lentil plants infected by PSbMV may show leaves narrowed and reduced in size and rolling downward. Necrosis of shoot tips may occur. Plants are usually stunted and produce pods abnormal in shape and size with reduced number of seeds. Lentil seeds from infected plants rarely show necrotic line patterns that are common on infected pea. Infected chickpea plants show stunting and downward curling of mottled leaflets. New leaves emerging after infection often exhibit chlorosis or yellowing. Seed transmission in chickpeas is very low.

## Disease Cycle and Epidemiology

As its name implies, the virus is seedborne. Its seedborne nature

has contributed to its worldwide distribution. Infected seed is the most common source of inoculum. The virus can be easily spread from plant to plant by aphids which transmit the virus in a non-persistent manner. Pea aphid, green peach aphid, cotton aphid and potato aphid are common aphid species that transmit the virus. Other significant pulse crops that may serve as inoculum sources for the virus include faba bean, lentil and vetch. Some non-leguminous plants may carry the virus without showing any symptoms.

## Management

Resistance to PSbMV is available in the germplasm lines, and resistant cultivars have been developed and are available. Resistance to PSbMV is

conferred by recessive genes (*sbm*), and four independent resistance genes have been identified. The most efficient tool for managing PSbMV is to plant resistant cultivars and to plant PSbMV-free seed. Care must be taken to closely monitor for the disease in seed production fields to ensure and maintain low levels of PSbMV in seed lots. Aphid control is also important in reducing secondary spread if PSbMV is introduced through contaminated seeds. The International Seed Testing Association (ISTA) has developed protocols to assess the presence of PSbMV in seed lots using simple immunological techniques (<http://seedtest.org/en/testing-methods-content---1--1132.html>). Dr. Clare Coyne, USDA-ARS, is in the process of completing the development of an SSR marker that is closely linked to *sbm-1*. This molecular marker will be very useful to breeders in developing new varieties with resistance to PSbMV.

ing symptoms of PSbMV infection



Fig. 3 Green pea seeds showing banding symptoms of PSbMV infection





# Field Decision Support Tools Online

and lentil, (4) Involve and serve the industry. The first two are designed to help producers make decisions about managing aphids to minimize injury to the crop.

To meet these two objectives, the LVP has conducted studies since 2008, and here are some key findings:

- There is a statistical relationship between weather conditions in the Columbia Basin in late winter and early spring and the level of aphid and virus that can occur that year across the Palouse.
- Virus risk differs within each year depending upon field locations in the region.
- PEMV and BLRV each can cause up to 30% yield loss in pea and lentil.
- The amount of yield loss caused by virus depends upon the age of the crop when first infected; younger plants are injured more, while injury is negligible to plants infected more than 3 weeks after emergence.
- After this point, direct injury by pea aphid to the crop can still be problematic.
- New economic injury levels have been calculated to help producers make decisions about treating to prevent direct injury.
- Seed treatments can protect peas from aphid and virus injury, but the effect depends upon material and dose.

## ***How can producers use LVP findings?***

The LVP findings are relevant to three decisions producers must make concerning aphid and virus management in pea during the production cycle. Each decision requires information about virus risks, the impact of virus injury and aphids on yield, potential crop yields and prices, and the costs and benefits of

aphid treatment.

All of these have been incorporated into three on-line calculators designed to help producers make these decisions.

The calculators can be found in the legume virus project web site ([http://www.ag.uidaho.edu/aphidtracker/Obj\\_2\\_.asp](http://www.ag.uidaho.edu/aphidtracker/Obj_2_.asp)).

## ***Calculator Summary: Development & Usage***

### **Calculator A:**

*Should I plant insecticide-treated seed to protect my crop from early-season aphids that arrive with virus?*

Many pea growers use Cruiser® or Gaucho® seed treatments to protect their pea crop from wireworms and pea leaf weevil. But there is little research about the cost-effectiveness of those insecticides to reduce viruses carried by first-of-the-season pea aphids. We field tested Gaucho® and Cruiser® for three years at labeled rates, and together with our research about regional virus risk in the Palouse area (which we forecast each year from weather conditions January through April) and local virus risk (which depends where a field is located in the three-county area), we estimate the profitability of seed treatments. Calculator A allows users to choose their own field sites by clicking to an on-line map and then entering their own values for treatment costs, rates, and historical crop yield (Figure 2). The illustrative example in Figure 3 shows that Gaucho® at 3.2oz/cwt provides the best likely economic return while not treating at all is costly.



Fig. 1

## ***The Legume Virus Problem on the Palouse***

The Legume Virus Project (LVP) is a National Institute for Food and Agriculture-funded project with the goal of reducing risks associated with plant viruses that infect pea, lentil and garbanzo bean in the Palouse and nearby production areas. These crops are affected by viruses, principally pea enation mosaic virus (PEMV) and bean leaf roll virus (BLRV). The viruses are vectored virtually exclusively by the pea aphid (Fig. 1). Viruses and aphids can injure our pulse crops, reducing yields by 30% or more. Outbreak years with abundant aphids and widespread virus injury to crops occur once every five to nine years in the Palouse region. The aphids colonize the crops in the Palouse each spring from the Columbia Basin and Willamette Valley, bringing varying amounts of the viruses with them. This uncertainty has made virus disease management difficult for more than 30 years.

## ***Working on Solutions***

The Legume Virus Project was funded to reduce the uncertainty associated with virus disease management. It is a collaboration involving scientists and educators from the University of Idaho, Washington State University and North Dakota State University. It has four objectives: (1) Monitor and forecast virus risk, (2) Develop aphid/virus management decision tools, (3) Breed resistant varieties of pea



**Calculator B:**

*Should I apply foliar insecticides early season to protect my crop from aphids that arrive with virus?*

Our three years of field research showed that infestation by virus infection catastrophically reduced yield when aphids arrive in fields right after crop emergence but diminishes as pea plants mature.

This calculator guides producers in deciding whether to treat these aphids, depending on global risk, location and the age of the pea crop (average number of nodes), whether the crop was seeded with insecticide-treated seed, estimated yield and market value and the insecticide to be used (Fig. 4). The calculator returns results similar to Calculator A, based on these inputs.

**Calculator C:**

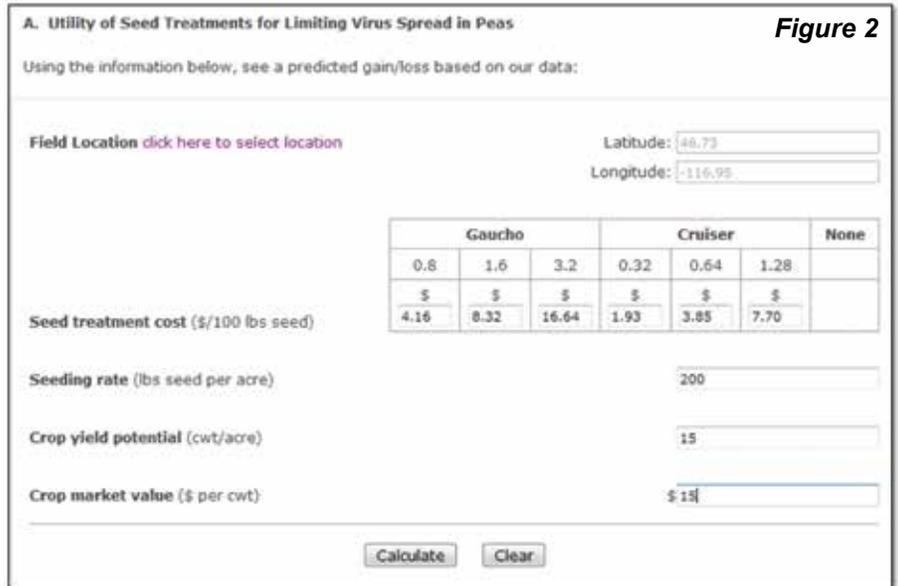
*Should I spray-out later-season aphids that do not carry any virus?*

As dry pea plants grow beyond 4-to-5 weeks after seedling emergence, our research shows that it becomes tolerant or resistant to virus. Yet infestations of non virus-carrying aphids in the crop can cause injury by their direct feeding. This calculator returns the economic injury level (EIL) for direct injury by pea aphid in pea, based on two years of LVP field data. Inputs are the cost of control, estimated market value and yield and insecticide efficacy. The EIL is given in aphids per sweep or aphids per pea plant.

**What's Next?**

Although the LVP is closing shop as our NIFA funding expires, the calculators will remain up and running. We will soon be augmenting Calculators B and C to include results for lentils as well as peas. The project is seeking funding to continue serving the industry by monitoring aphid and virus incidence for reporting to our website and incorporating information about virus injury in chickpea. Users with questions or comments are welcome to contact us through project director Sanford Eigenbrode: [sanforde@uidaho.edu](mailto:sanforde@uidaho.edu). The project website is <http://www.ag.uidaho.edu/aphidtracker/index.asp>.

*This LVP was supported by the USDA Risk Avoidance and Mitigation Program, Award #2008 51101-04522.*



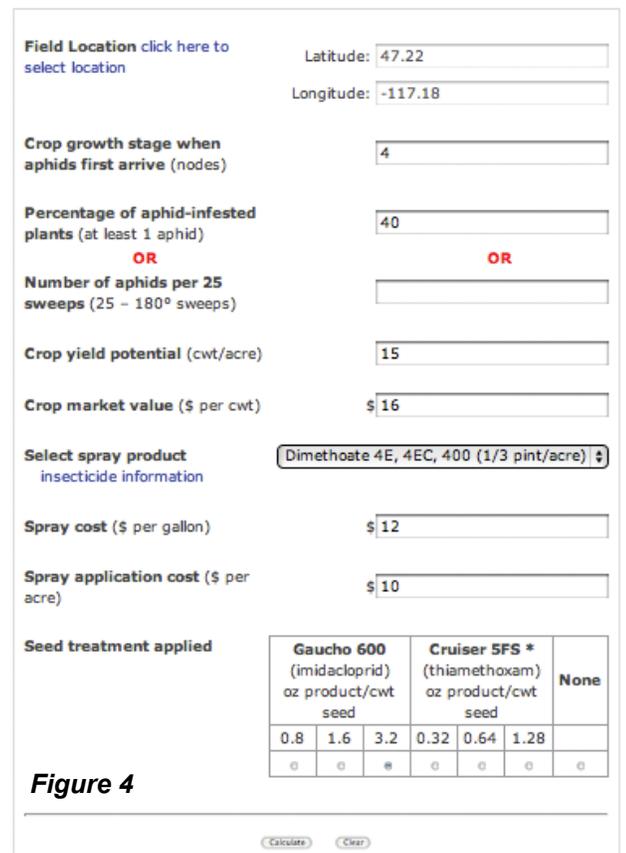
**Figure 2**



**Figure 3**

**B. Effect of Date of Infection on Virus Disease Severity and Injury**

Using the information below, decide on insecticidal sprays for aphids early in the growing season:



**Figure 4**



# Consumers have spoken, and they're asking for **PULSES.**

*Ali McDaniel, USADPLC Food Marketing Manager*

Although the USA Dry Pea & Lentil Council is working with the International Pulse Trade & Industry Confederation (CICILS/IPTIC) to designate 2016 as the "International Year of Pulses," pulses are already taking center stage in the US.

New products containing pulses and pulse ingredients have been showing up at trade shows around the country. Pulses were singled out as a major ingredient trend at last year's Natural Products Expo West, which brought in over 50,000 attendees. According to Mintel, there have been over 350 new products launched globally in 2011 that contain pulse ingredients.

What's sparking the development of all these new products? Consumers are demanding healthier and more sustainable choices from manufacturers and restaurants. In addition, trends such as gluten-free, increased snacking and ethnic flavors are driving consumer choices.

The number of gluten-free products has skyrocketed and is showing no signs of slowing down. It is estimated nearly 1 in 133 people in the US suffer from Celiac's disease, and many more are eating gluten-free for its health appeal. This translated into a market share of \$337 million in 2011 according to AC Nielsen (data 52 weeks ending Feb. 2011). Packaged Facts reports that gluten-free has shown an annual growth of 29% since 2005.

The areas of the gluten-free market showing the most growth include breads and baked goods, snacks, crackers and baking mixes with growth rates of 347%, 213%, 175% and 159% respectively (AC Nielsen data 52 weeks ending Feb. 2011). As these areas of the gluten-free market continue to grow, pulse flours will become an even more important part of our product development efforts.

Pulse flours offer a superior protein, fiber and mineral profile to traditional gluten-free flours. This allows them to meet the nutritional needs of gluten-free manufacturers. Gluten-free is also reaching the restaurant chain segment with an increase of 61% in the number of menu items labeled gluten-free (Technomic Consumer Food Trends Issue No. 1 2012). Several chains are offering (or testing) gluten-free products. The number of products available in restaurant chains is expected to see continued growth.

In addition to gluten-free, snacking is on the rise. Several major snack food manufacturers, such as Kraft and Frito-Lay, are investing in healthier snack options to feed the increased demand of the American consumer. Due to economic and health reasons, consumers are looking for healthier, more convenient and inexpensive ways to get their daily food needs. Hummus continues to be a strong driver for the dips and spreads category, which has shown a 175% increase from 2006-2010 (Mintel Dips and Spreads September 2011).

As consumers continue to embrace hummus, sales could potentially reach \$250 million by 2013 (AC Nielsen). In addition to retail snacking, restaurants are also focusing on creating diversity in meal size and times. A few examples of this include Au Bon Pain's Portions menu which features Hummus & Cucumber and Pret-a-Manger's grab-and-go dinners which offers a Lentil & Couscous Salad (Technomic Consumer Food Trends Issue No. 1 2012). Pulses are both economical and healthful ingredients making them an ideal snack food option for manufacturers and restaurateurs.

A focus on ethnic flavors has also evolved. Consumers want more adventurous and bold flavors in their dining experience. Ethnic twists for both new and existing products are satisfying this need, although consumers tend to be more receptive to familiar products like pizza and burgers with an ethnic twist. Two popular cuisines right now are Indian and Mediterranean. Both utilize pulses so it is only natural to see more menu items featuring pulses with an ethnic flare.

Consumer attitudes are certainly changing. In the past, people have focused on taste or health but not both. As manufacturers improve their flavorful options through culinary innovations consumers are more likely to believe healthy food can taste good.

Pulses are perfectly positioned to accommodate several current trends. In moving forward with product development efforts, the focus is on creating items to help manufacturers and restaurant chain operators meet consumer demands. As affordable, healthy, and most importantly delicious, pulses are poised to be the next big thing!

## USA Dry Pea & Lentil Council National Board



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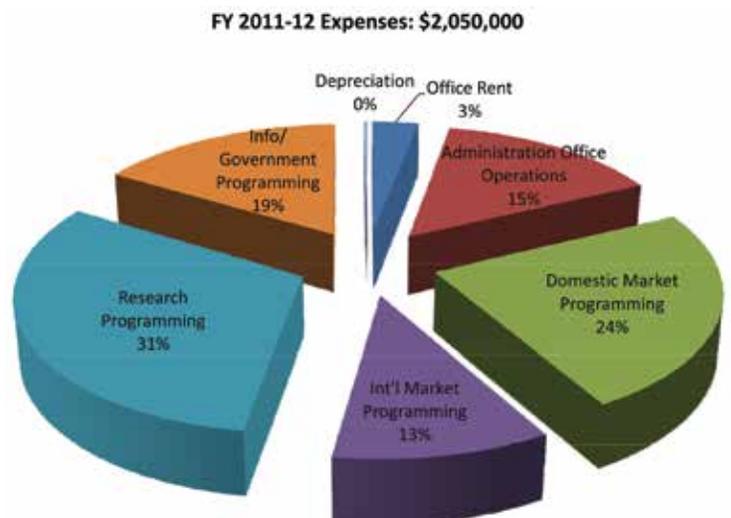
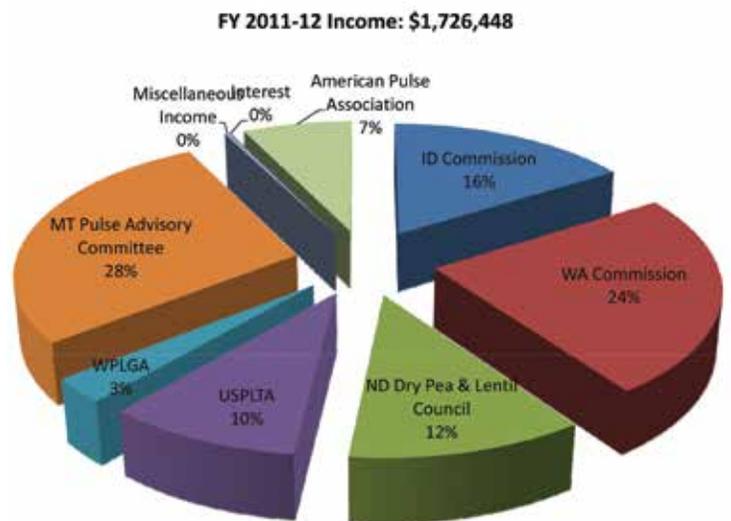
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## USA Dry Pea & Lentil Council Financial Report

FY = July 1-June 30

FY 2011-12 Income	
ID Commission	\$ 277,811
WA Commission	\$ 416,418
ND Dry Pea & Lentil Council	\$ 200,000
USPLTA	\$ 165,584
WPLGA	\$ 50,716
MT Pulse Advisory Committee	\$ 485,000
Miscellaneous Income	\$ 5,688
Interest	\$ 231
American Pulse Association	\$ 125,000
<b>Total Income</b>	<b>\$ 1,726,448</b>
FY 2011-12 Expenses	
Office Rent	\$ 61,600
Administration Office Operations	\$ 303,638
Domestic Market Programming	\$ 490,959
International Market Programming	\$ 218,130
Research Programming	\$ 640,068
Info/Government Programming	\$ 325,501
Depreciation	\$ 3,687
<b>Total Expenses</b>	<b>\$ 2,050,000</b>

**Change in Net Assets ( \$317,135)**



\* The change in net assets (\$317,135) was budgeted in FY 2010-11 but spent in FY 2011-12 for projects straddling both fiscal calendars.

# Idaho Financial Report

FY = July 1-June 30

## Idaho Dry Pea & Lentil Commission

Brian Silflow, Kendrick - Chair  
 Cole Riggers, Craigmont - Vice Chair  
 Marty Anderson, Lewiston  
 Ken Frei, Ferdinand  
 Lee Hawley, Moscow  
 Howard Jones, Genesee  
 John Foltz, Moscow (ex-officio)  
 Tim McGreevy, Moscow (CEO)



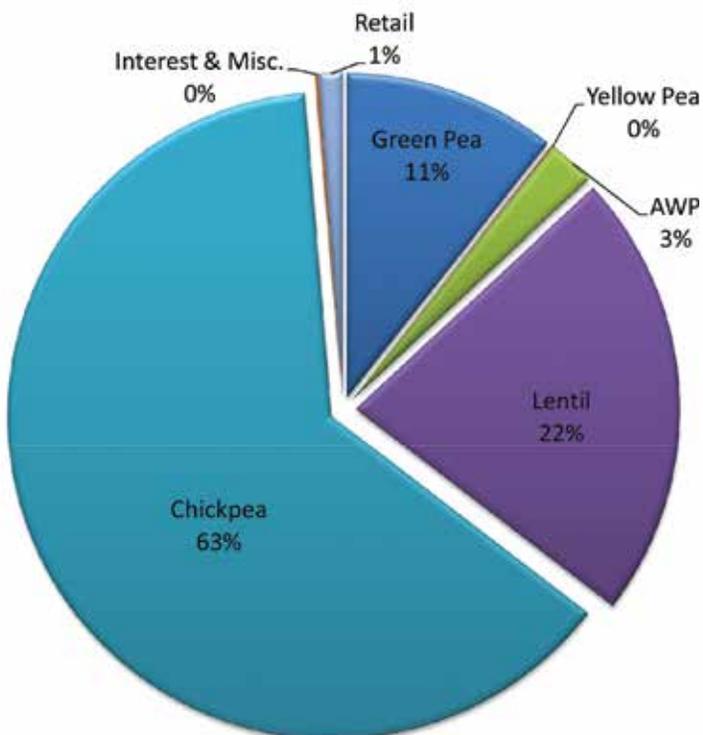
### FY 2011-12 Income

Green Pea	\$	38,652
Yellow Pea	\$	245
AWP	\$	8,581
Lentil	\$	81,192
Chickpea	\$	229,734
Interest & Misc.	\$	568
Retail	\$	4,223
<b>Total Income</b>	<b>\$</b>	<b>363,195</b>
Cost of Retail	\$	830
<b>Total Income</b>	<b>\$</b>	<b>362,365</b>

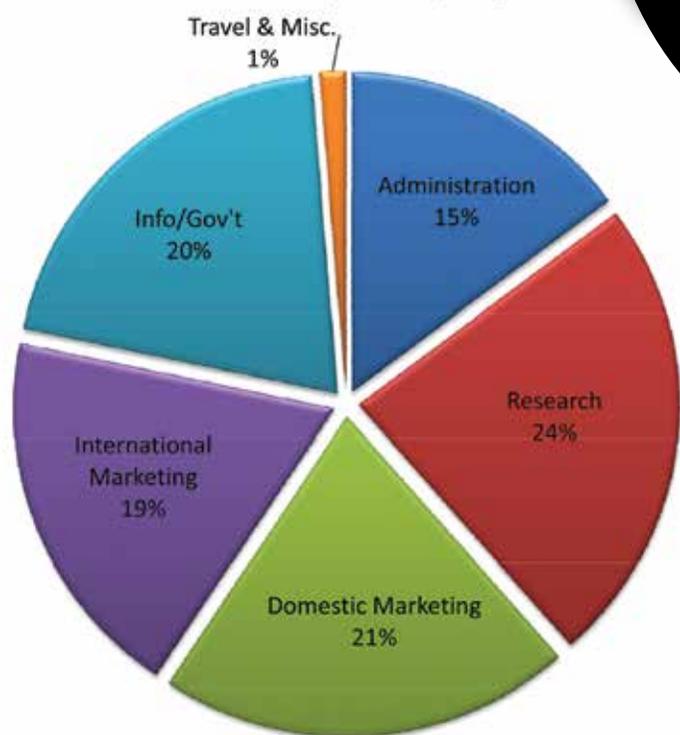
### FY 2011-12 Expenses

Administration	\$	43,207
Research	\$	69,235
Domestic Marketing	\$	60,843
International Marketing	\$	55,297
Info/Gov't	\$	59,616
Travel & Misc.	\$	3,830
<b>Total Expenses</b>	<b>\$</b>	<b>292,028</b>
<b>Net Income</b>	<b>\$</b>	<b>70,337</b>

FY 2011-12 Income: \$362,365



FY 2011-12 Expenses: \$292,028



Idaho Pea & Lentil Commission  
*Financials*

## Montana Pulse Advisory Committee

Kim Murray, Froid - Chair  
Grant Zerbe, Frazer - Vice Chair  
Leta Campbell, Chinook  
Mike Ehlers, Oilmont  
Brian Kaae, Dagmar  
Jon Stoner, Havre  
Lee Boyer, Helena  
Ron DeYoung, Helena



Kim Murray, USADPLC Chairman

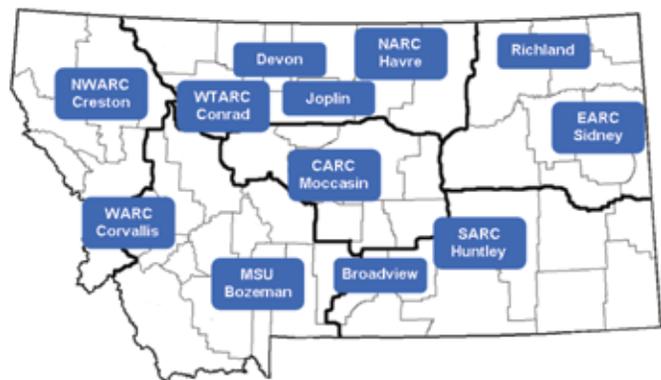
Kim Murray of Froid, MT, was elected chairman of the USA Dry Pea & Lentil Council in June 2012. Murray is one of the pioneers in the Montana pulse industry and is also chair of the Montana Pulse Advisory Committee.

## Montana Pulse Variety Trial Results Available

“Pulse crop planting acres have been increasing rapidly in the past decade in Montana. Variety development and testing is crucial to sustain pulse crop production in Montana. A coordinated multi-year, multi-location variety testing project was initiated in 2008. This report contains the results from 2012 season, and a summary from multiple years. Three trials were established to evaluate spring pea, lentil and chickpea varieties. The trials were conducted at seven Montana State University Agricultural Research Centers across Montana and in cooperating producers’ fields near Broadview, Devon, Joplin and Richland, Montana. See the full report on the [www.pea-lentil.com](http://www.pea-lentil.com) website under the *Growers* tab.

### 2012 Report for Montana Statewide Spring Pulse Variety Evaluations

Prepared by  
Johnna Heser, Yesuf Mohammed and Chengci Chen



Montana State University  
Montana Agricultural Experiment Stations

For more information, visit our Annual Reports section at:  
<http://ag.montana.edu/carc/>





*Dr. Julie Pasche*

## **Plant Pathologist Joins NDSU Team**

Dr. Julie Pasche joined the Department of Plant Pathology at North Dakota State University (NDSU) in July 2012 as an assistant professor with research responsibilities for diseases of pulse crops. Dr. Pasche is a native of Minnesota and received a B.S. in microbiology and biotechnology, as well as a M.S. and Ph.D. in plant pathology, all from NDSU. As an undergraduate student, Dr. Pasche competed for the Bison in volleyball and track and field. She was a two-time all-American volleyball player, still holds many NDSU volleyball records and was inducted into the Bison Athletic Hall of Fame in 2010.

After obtaining her bachelor's degree, Dr. Pasche joined the Department of Plant Pathology as a technician in the potato pathology laboratory of Dr. Neil Gudmestad, University Distinguished Professor. She eventually rose to position of lab manager for Dr. Gudmestad, who served as Dr. Pasche's major advisor for both of her graduate degrees. Dr. Pasche's work in potato pathology focused on the management of foliar and soil-borne diseases of potato, including those caused by bacterial, viral, fungal and oomycete pathogens.

Her Ph.D. research focused specifically on two fungal diseases (black dot and Verticillium wilt) and has important implications for detection of pathogens, diagnosis of diseases, improving efforts to breed for disease resistance and for understanding how disease develops. Dr. Pasche also has many years of direct experience with fungicides, including field trials for fungicide efficacy and studies related to the development of fungicide resistance in pathogens of potato.

Dr. Pasche plans to continue her work with pathogen detection focusing on utilizing molecular methods to facilitate breeding efforts, pathogen detection and identification. She believes breeding for resistance to plant pathogens is an integral part of any plant disease management strategy and therefore, collaboration between pathologists and breeders is critical for successful development and integration of new cultivars into production systems of any crop. Dr. Pasche will take an active role with breeders in the development of genetic resistance to plant pathogens of economic importance to North Dakota. Additionally, she is looking forward to learning more about the disease problems important to North Dakota pulse growers. Dr. Pasche feels that serving the citizens of North Dakota is paramount to the land grant university. In her role as the Pulse Crop Pathologist, she will work to identify and understand the needs of producers in the state and work towards finding both short- and long-term solutions for their plant disease problems. All of this will involve partnership with pulse crop growers and the Northern Pulse Growers Association.

### **North Dakota Dry Pea & Lentil Council**

- Cal Hoff, Richardton - Chair
- Kevin Haas, Jamestown - Vice Chair
- James Haux, McClusky
- Jeff Knox, Ray
- Richard Mickelson, Rolla
- Doug Goehring, Bismarck
- Charles Carvel, Bismarck
- Shannon Berndt, Bismarck



*update*

**North Dakota**

## Washington Dry Pea & Lentil Commission

Randy Duncan, Tekoa - Chair  
 Scot Cocking, Farmington - Vice Chair  
 Dan Bruce, Farmington  
 Lee Druffel, Colton  
 Aaron Flansburg, Palouse  
 Dan McKinley, Dayton  
 Wes Suksdorf, Fairfield  
 Don Potts, Spokane (WSDA Rep.)  
 Tim McGreevy, Moscow (CEO)



## Washington Financial Report

FY = July 1-June 30

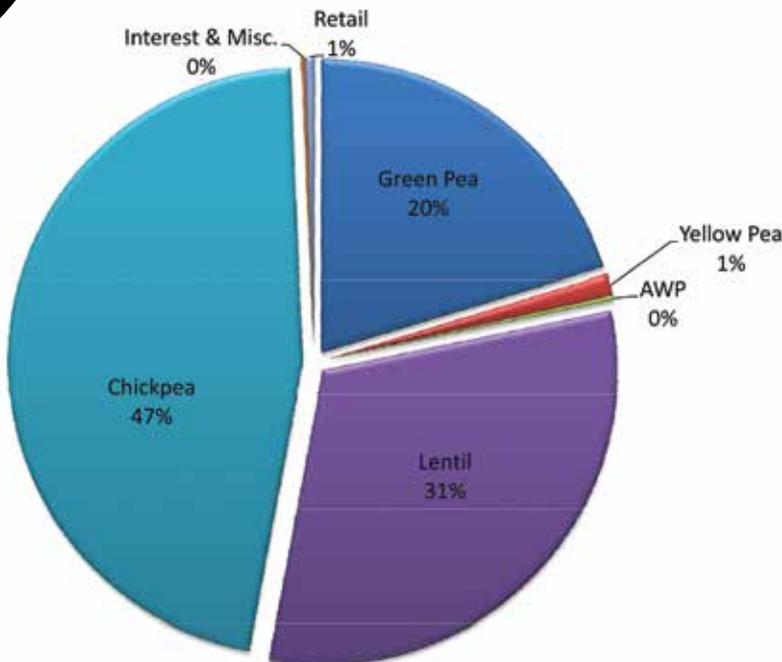
### FY 2011-12 Income

Green Pea	\$	172,750
Yellow Pea	\$	10,139
AWP	\$	2,048
Lentil	\$	265,605
Chickpea	\$	394,684
Interest & Misc.	\$	1,776
Retail	\$	4,223
<b>Total Income</b>	<b>\$</b>	<b>851,225</b>
Cost of Retail	\$	829
<b>Total Income</b>	<b>\$</b>	<b>850,396</b>

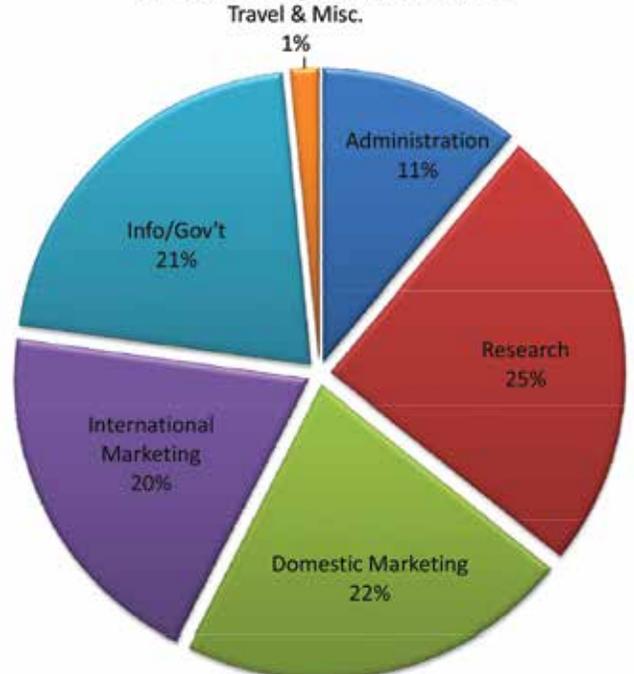
### FY 2011-12 Expenses

Administration	\$	47,938
Research	\$	107,282
Domestic Marketing	\$	94,277
International Marketing	\$	85,684
Info/Gov't	\$	92,377
Travel & Misc.	\$	6,754
<b>Total Expenses</b>	<b>\$</b>	<b>434,312</b>
<b>Net Income</b>	<b>\$</b>	<b>416,084</b>

FY 2011-12 Income: \$850,396



FY 2011-12 Expenses: \$434,312





# Armenian Lentil

## Apricot Soup

*Serves 8*

### **Ingredients:**

3 tablespoons olive oil  
1 large onion, finely chopped  
2 large cloves garlic, minced  
1/3 cup dried apricots, chopped  
1 1/2 cups USA red lentils, rinsed  
5 cups vegetable broth  
3 medium plum tomatoes, peeled, seeded & chopped  
1 tablespoon ground cumin, or to taste  
1/2 teaspoon dried thyme  
salt & freshly ground pepper, to taste  
1/4 teaspoon fresh lemon juice, or to taste  
Fresh parsley, chopped for garnish

*Dish up a bowl of this delicious soup on a chilly winter evening.*

### **Directions:**

1. In a large soup pot, heat the olive oil over medium heat. Add onion, garlic and dried apricots. Cook until the onion is soft, stirring occasionally.
2. Add the lentils and broth. Bring to a boil. Reduce heat, cover and simmer for 30 minutes, or until the lentils are very soft.
3. Stir in the tomatoes, cumin, thyme, salt and pepper. Simmer, covered, another 10 minutes.
4. Remove half of the soup and puree it in a blender or food processor.
5. Return the puree to the soup pot.
6. Add lemon juice, and stir 2-3 minutes.
7. Adjust seasonings to taste, garnish with parsley and serve.

# Congress Extends 2008 Farm Bill

Tim McGreevy, USADPLC CEO

The farm community spent the last two years working with Congress to pass a five-year farm bill. On New Year's day 2013, Congress decided to punt the passage of a five year farm bill into 2013. Disappointing, frustrating and unacceptable are the words that come to mind to describe the last six months of the farm bill debate. Congress decided to extend the current 2008 Farm Bill until September 30, 2013. House and Senate members have nine months to pass a new farm bill.

Will the 2013 Farm Bill look different than the 2012 Farm Bill approved by the full Senate and the House Ag Committee?

We believe there is a pretty good chance that the House and Senate Farm Bills will look pretty similar to what was passed in 2012. What is unknown is the level of cuts the Ag Committees will be asked to absorb as Congress continues to debate deficit reduction.

As Congress prepares to formulate a new farm bill in 2013 it is important to look at what they passed in 2012.

## 2012 Farm Bill Legislative History

The USADPLC and the APA were successful in working to include the following provisions in the Senate and House Ag Committee versions of the 2012 Farm Bill.

### *Pulse Health Initiative*

The Senate bill included a provision in the research title that established the Pulse Health Initiative. The language in the Senate bill authorized up to \$125 million dollars over five years to achieve the goals of the PHI.

The House Ag Committee bill indirectly included language in their bill that would support pulse crop research through existing USDA research grants. The language was not as good as the Senate language but the pulse crop research was mentioned in both bills.

### *School Pulse Food Pilot Program*

The Senate passed an amendment on the floor adding the School Pulse Food program to the Senate Ag Committee bill. The legislation authorized up to \$10 million dollars to introduce pulse foods into school feeding programs over five years.

The House Education & Workforce Committee has jurisdiction over school feeding programs in the House. We met with House Educ./Workforce Cmte. members in mid September and received a positive response to our pilot program.

### *Commodity Title*

Under both the Senate and House Agriculture Committee bills, farm support for traditional program crops was restructured by eliminating direct payments, the existing counter-cyclical price program, and the Average

Crop Revenue Election (ACRE) program. Authority was continued for marketing assistance loans at the same level as the 2008 farm bill.

The House revenue option (Price Loss Coverage/Revenue Loss Coverage (PLC/RLC) is different than the Senate Average Revenue Coverage (ARC) program. The House RLC makes payments to producers for each planted program crop when actual countywide crop revenue is below 85% of historical revenue (i.e., the producer absorbs the first 15% of the shortfall). In contrast, for ARC, the revenue guarantee is set at 89% of historical revenue (i.e., the producer absorbs the first 11% of the shortfall) at either the county or farm level (to cover more localized losses). In both cases, the government then pays for the next 10% of the loss. Any remaining losses are backstopped by crop insurance if purchased by the producer.

The House Bill offers producers the option of choosing between a target price program or a county triggered revenue program (RLC) with the support tied to current year

## 2012 Farm Bill Proposals

House Ag Committee Reference Target Prices vs. Senate 5-Year Olympic Avg.				
Crop	2008 Farm Bill Target Prices	2012 Senate & House Mkt. Loan Rates	2012 House Ref. Target Prices	2012 5-yr. Oly. Avg. 2007-11 Senate ARC
Wheat (bu)	4.17	2.94	5.5	6.32
Barley (bu)	2.63	1.95	4.95	4.68
Corn (bu)	2.63	1.95	3.7	4.48
Soybean (bu)	6	5	8.4	10.46
Rice (cwt)	10.5	6.5	14	13.8
Peanuts (ton)	495	355	535	448
Canola (cwt)	12.68	10.09	20.15	18.77
Dry Peas (cwt)	8.32	5.4	11	12.09
Lentils (cwt)	12.81	11.28	19.97	26.47
S. Chickpeas (cwt)	10.36	7.43	19.04	21.27
L. Chickpeas (cwt)	12.81	11.28	21.54	31.3

production on any covered commodity up to the aggregate total of existing base acres on a farm. In other words, a 1000 acre farm with 333.33 base acres each of corn, soybeans, and wheat could conceivably plant 1000 acres of minor oilseeds (or barley, corn, wheat, pulse crops, etc.) and receive the RLC coverage.

The USADPLC has opposed the reference target price proposal because of its potential, during periods of low prices, to skew planted acreage between crops. Peanuts, rice, barley and canola all received reference target prices above their five-year Olympic averages. Pulse crop target prices in the House were better than expected but still below their five-year Olympic average prices from 2007-2011. In the case of lentils and large chickpeas the reference target price is well below pricing of the past five years.

#### *MAP/FMD*

The Market Access Program and the Foreign Market Development Programs were authorized at \$200 and \$34.5 million dollars respectively in both the Senate and House versions of the farm bill.

## **2008 Farm Bill Extension**

*Direct Payments:* The farm bill extension maintains direct payments for 2013. Senate and House versions of the 2012 Farm Bill eliminated direct payments on program crops. The good news is that direct payments will be included in the new budget baseline and will be available for deficit reduction as well as any new Commodity Title I safety net that is developed to replace them in the 2013 Farm Bill.

*Marketing Loan/Counter Cyclical/ACRE:* Programs will be maintained until September 2013.

*Disaster Provision:* There is no mandatory funding for the SURE program. Funding for the SURE disaster program is discretionary and subject to the appropriation process under the extension.

*Authorized vs. Funded:* There are 37 USDA programs that lost their base funding under the extension including several conservation programs and research initiatives (Specialty Crop Research Initiative). The extension authorizes these programs to be funded through the appropriation process but does not fund the programs.

*MAP/FMD:* Funding for the Market Access Program and Foreign Market Development program will be authorized at existing levels of \$200 million and \$34.5 million respectively for this one-year period.

*Food Aid:* Funding will be authorized at existing levels.

## **Farm Bill Future**

Senate Agriculture Committee Chair Debbie Stabenow and House Agriculture Committee Chair Frank Lucas have pledged to begin work on the 2013 Farm Bill in February. Both agriculture committees will have new faces to educate, but the leadership of the committees remains the same. The USA Dry Pea & Lentil Council/American Pulse Association will continue to engage our elected leaders in the coming months to pass a five-year farm bill that provides a fair safety net to our producers, a strong crop insurance program, funding for the Pulse

Health Initiative and other research programs, the School Pulse Food Pilot program, MAP/FMD, conservation and food aid programming.

#### ***New Tax Provisions***

The American Taxpayer Relief Act of 2012 included the following tax related issues of interest to agriculture:

*Estate Taxes:* The Estate Tax is permanently set at 40% with a \$5 million exemption that is indexed to inflation. (The rate was 35% with a \$5 million exemption for 2012.)

*Tax Rates:* Tax rates for families earning above \$450,000 (\$400,000 for individuals) increase

permanently to 39.5% (up from 35%). All tax rates for incomes below \$400,000 are permanently set at present levels.

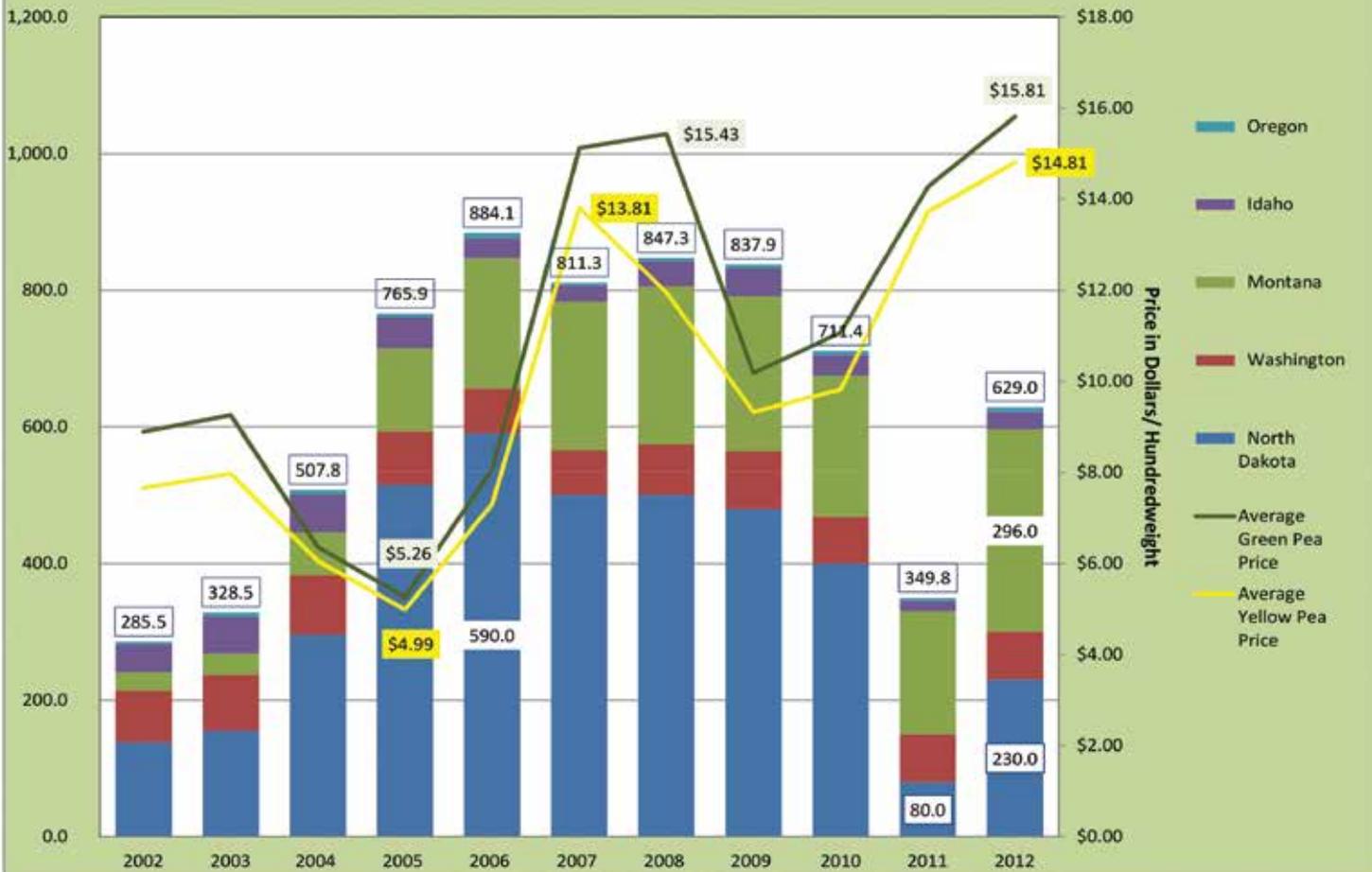
*Payroll tax:* The legislation ends the payroll-tax cut authored by President Obama and Congress in 2010. The employee portion of the Social Security tax will increase from 4.2% to 6.2% in 2013.

*Bonus depreciation:* The law grants a one-year extension of the 50% bonus depreciation allowance. This provision allows business owners to write off the entire cost of major purchases in the year they are made rather than

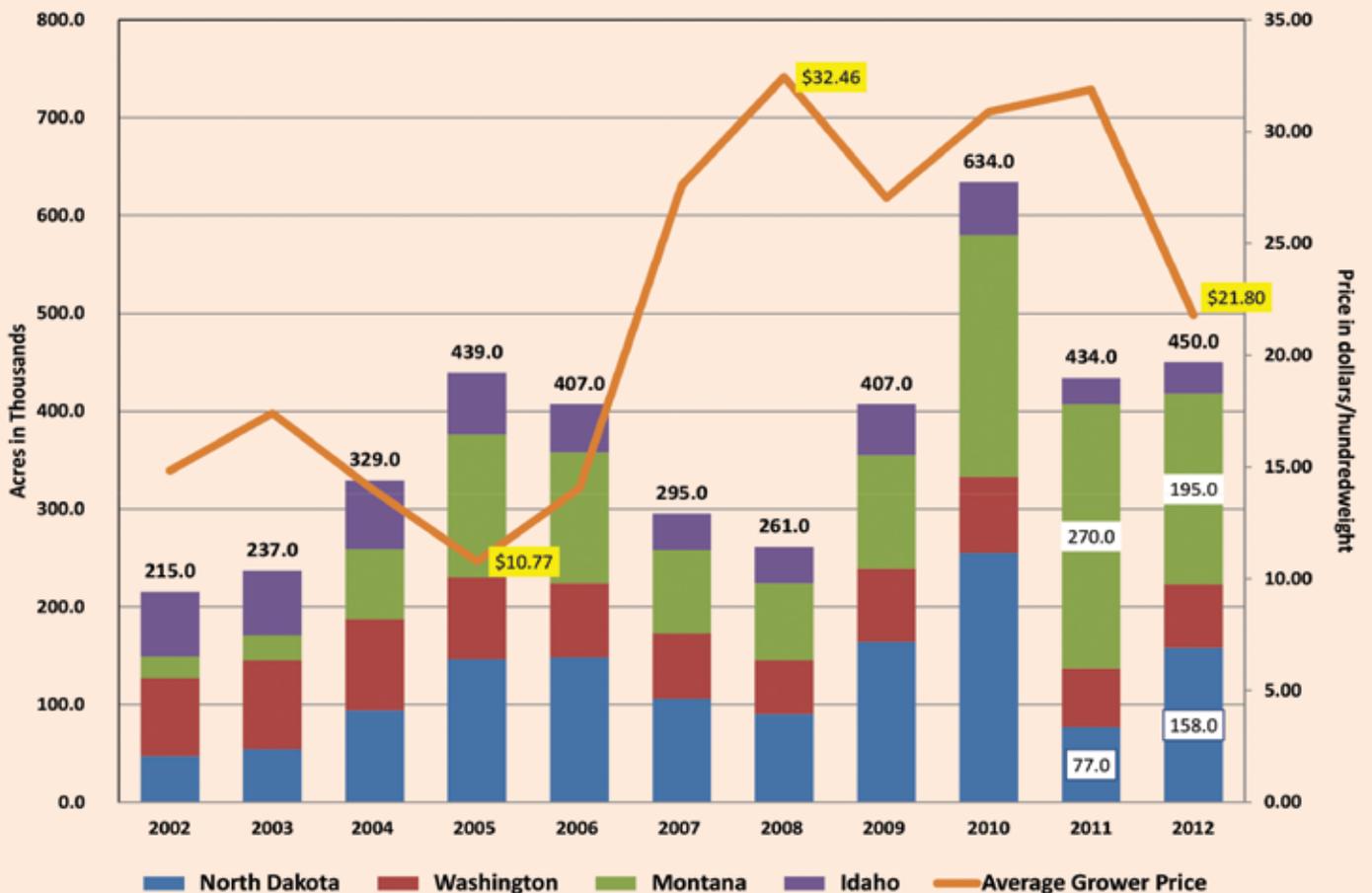
depreciate those expenses over time.

*Spending Cuts:* The legislation passed on New Year's Day postponed for two months the mandatory defense and domestic spending cuts (sequestration) passed over a year ago. If Congress fails to pass legislation to reduce spending by the end of February 2013 then a \$1.2 trillion cut (over 10 years) in defense (50%) and domestic programs (50%) will be implemented. Congress will also have to deal with the nation's debt limit about the same time.

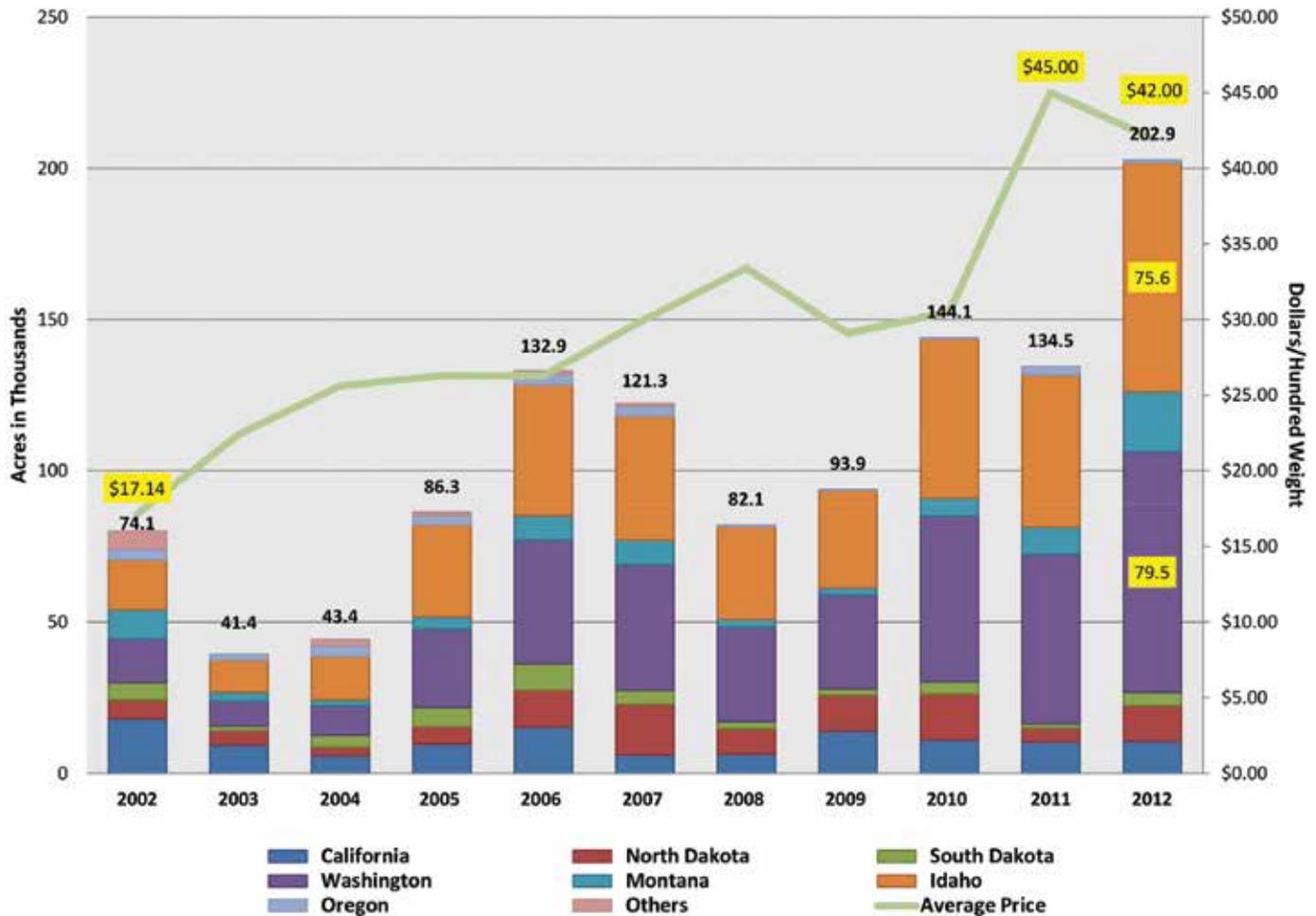
### US Dry Peas - Harvested Acres by State vs Price/CWT



### US Lentils--Harvested Acres by State vs Average Price/CWT



**US Chickpeas, All-Harvested Acres by State Vs Ave Price-Lg Chickpeas**



# Ten-Year Pulse Acreage & Price Charts

## Dry Peas

Dry pea acreage rebounded in 2012 to 629,000 acres. The USA Dry Pea & Lentil Council (USADPLC) estimated 283,050 acres of green peas and 345,950 acres of yellow peas.

In 2011, there was 349,800 acres of dry peas. North Dakota acreage took a hit when weather impeded field work in the spring. There was an estimated 157,410 acres of green peas and 192,390 acres of yellow peas last year.

Price jumped in 2012 as well thanks to the short crop in 2011. Prices on the chart reflect the entire year, but USDA's Bean Market News showed a range of \$16-21 for green peas and \$14.17-15 for yellow peas in December.

## Lentils

Lentil acreage held steady to slightly higher in 2012 at 450,000 harvested acres. The USADPLC estimated 135,000 acres of small lentils, 252,000 acres of medium lentils, 58,500 acres of large lentils and 4,500 acres of red lentils.

In 2011, there was 434,000 acres of lentils with estimates of 130,200 acres of smalls, 243,040 acres of mediums, 56,420 acres of larges and 4,340 acres of red lentils.

Canada has a large volume of low-quality lentil stocks, and price dipped to \$21.80 in 2012.

## Chickpeas

Chickpea acreage skyrocketed from 134,500 acres in 2011 to 202,900 acres in 2012. There were 135,200 acres of large kabuli chickpeas and 67,700 acres of small kabuli chickpeas.

In 2011 there were 98,000 acres of large kabulis and 36,500 acres of small kabulis.

Price has dipped slightly to \$42.00 from last year's highs, but demand is holding strong.

*Data from USDA-NASS*



# USA Dry Pea & Lentil Council

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Email: pulse@pea-lentil.com • Web: www.pea-lentil.com



# USA Dry Pea & Lentil Council

*national voice of the pulse industry since 1965*

#### International Market Development:

6 overseas offices promoting pulses & reducing trade barriers

#### Domestic Market Development:

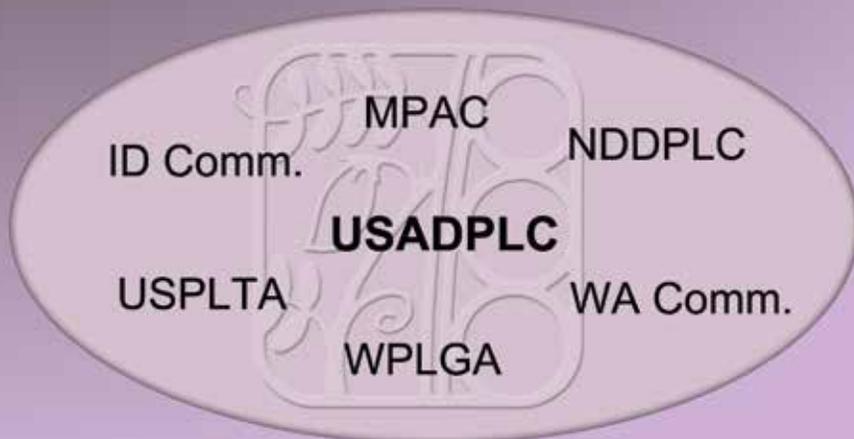
Expanding markets for pulse crops as whole  
products & value-added ingredients

#### Research:

National breeding program & germplasm development,  
Pulse Health Initiative, crop protection products

#### Government Affairs:

Farm program, crop insurance, regulations



***many members. one strong voice.***

*www.pea-lentil.com*

*www.cookingwithpulses.com*