Specialty Pasta Processing
A Business Case for the
Great Falls Montana Region

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The Great Falls Development Authority (GFDA) is a public/private economic development partnership serving the 13 county Golden Triangle region of north-central Montana. Our mission is to grow and diversify the Great Falls regional economy and support the creation of higher wage jobs. We are a private-sector driven, award-winning professional economic development team that prides itself on providing excellent service to support long-term business success. We were the first economic development organization in the Rocky Mountain region to earn accreditation from the International Economic Development Council.

In Addition to World-Renowned Agricultural Production, we offer a range of support for agricultural and food processors, including workforce recruitment and training grants, land and equipment grants, access to low cost capital, low cost utilities, competitive shovel-ready rail-served manufacturing sites, abundance of spring and municipal water, the 6th best tax climate in the nation, and more! We are experts at structuring packages focused on long-term client success.

The Purpose of This Business Case is to document the competitive advantages our region offers for niches in agricultural and food processing operations. We have developed business cases for a variety of other agricultural and food processing niches which may be of interest to you.

We look forward to learning about your company and how we may be able to find a great location for your start-up or expansion.

Executive Summary

This document outlines the justification for the start-up and operation of a specialty pasta production facility in the Great Falls Region. The opportunity that exists for converting commodities into specialty pasta products in Montana is significant. The opportunity is due to three factors: the rapidly increasing demand for specialty pastas, the reliable availability of durum wheat, specialty grains, and pulses in Montana, and access to plentiful land, energy, and human resources in the Great Falls Region.

- The Region is the site of abundant small grain and pulse crop production that would enable a specialty pasta production operation to gain an economic advantage by procuring ingredients directly from Montana-based grain and pulse crop producers.

- The Region has one of the lowest combined costs of industrial energy in the nation, including one of the lowest electrical rates for industrial use in grain growing areas in North America. This significantly reduces production energy costs for potential businesses. The Region also boasts natural gas infrastructure with low natural gas rates for industrial use, which is necessary for pasta drying purposes.

- The Region has plentiful labor resources that can be coupled with the state of Montana-sponsored workforce training financial incentives.

- The Region has two impressive, shovel-ready industrial parks with the required infrastructure to support specialty pasta production facilities.

- The Region is traversed by the I-15 Interstate Corridor that interconnects with major U.S. and Canadian highway systems for efficient transport of goods by truck throughout North America.

- The Region is serviced by dozens of Montana-based and out-of-state trucking firms for efficient and cost effective transport of goods by truck.

- The Region is serviced by the Burlington Northern Santa Fe Railway with a rail network that provides efficient inbound and outbound transport of goods.

- Companies in the Region excel in the production of Intermediate Industrial Products for the manufacturing of food and beverages.

Montana is the leading state in the nation for the planting and harvesting of peas and lentils and is number two in the production of durum wheat.[1] In addition to peas, lentils, and durum wheat, Crops grown and harvested in large quantities in Montana include wheat, durum wheat,

oats, rye, barley, peas, lentils, chickpeas, millet and a variety of other specialty grains and pulses. Montana harvested 18,755,000 bushels of durum wheat on 605,000 acres, 7,975,000 hundredweight of dry peas on 550,000 acres, 183,000 hundredweight of lentils on 222,000 acres, 305,000 hundredweight of chickpeas on 41,300 acres, and 44,200,000 bushels of barley on 850,000 acres in 2015.[2] Over 57% of chickpeas planted and harvested in Montana took place in the Great Falls Region and the majority (73%) of barley planted and harvested in Montana occurred within the Great Falls Region.
The Great Falls Region is defined as the 13 county region surrounding Great Falls and includes Cascade, Teton, Pondera, Toole, Glacier, Choteau, Fergus, Liberty, Hill, Judith Basin, Lewis and Clark, Meager, and Blaine counties.

Agriculture is the number one industry for the Treasure State of Montana. According to the USDA National Agricultural Statistics Service, Montana's agriculture industry in 2015 employed over 9.8 million acres to bring in over $2.25 billion in crop revenue to the state.[3] Agricultural producers and processors in Montana have demonstrated the ability to efficiently grow and process agricultural commodities for shipment to customers throughout the world. The Great Falls Region is also an agricultural processing hub that excels in the conversion of Montana-grown commodities into intermediate products for food and feed industries.

Specialty pasta production addresses many of the fastest growing nutritional trends within the North American food marketplace. One of the primary ingredient trends to enhance nutrition is the use of pulses to increase the amount of protein and iron present in foods. The United Nations has declared 2016 to be "The International Year of Pulses."[4] Pulses, such as peas, lentils, and chickpeas, are highly nutritious and foster sustainable agriculture. Pulses have been formulated into a wide range of new products including specialty pastas.

Specialty pastas are pasta products that vary from typical mainstream, traditional pasta products. Traditional pasta products are produced primarily from durum wheat and are extruded into a wide range of conventional shapes such as spaghetti, penne, rotini, and noodles. Specialty pasta products can be classified as those that have non-traditional ingredients and/or non-traditional configurations. Even though the majority of pasta products sold and consumed in the North American marketplace are traditional pasta products, the fastest growing category of pasta products is specialty pasta. Specialty pastas have experienced increased sales by addressing the demand for health and nutrition by consumers.[5]

The collection of food and animal feed component manufacturers in the Great Falls Region has been very successful in supplying food and feed value chains with efficient production and shipment of a wide variety of intermediate products. Prime examples of bulk, intermediate products produced in the Great Falls Region are conditioned grains, barley malt, oilseeds, and pulses, as well as milled flours, durum semolina, traditional pasta products, vegetable oils, and honey. The Region is also home to a large scale egg production operation.

Companies that operate food and animal feed manufacturing operations in the Great Falls Region include:

Malteurop	Pasta Montana	General Mills
Cenex Harvest States	Grain Craft	JM Grain
Great Northern Growers	Montana Milling	Montana Specialty Mills
Montana Advanced Biofuels	Montana Eggs LLC	Columbia Grain
Timeless Seeds	Giant Springs Water	Smoot Honey
Cereal Food Processors		

Table 1: Great Falls Region Agri-processing Companies
Source: Great Falls Development Authority

General Mills, Inc. operates a large capacity mill that is engaged in wheat and durum milling in Great Falls, MT. The operation has a daily milling capacity to produce 12,000 hundredweight of wheat flour and 3,000 hundredweight of durum semolina.[6] In general, 42 pounds of flour or semolina and 18 pounds of mill feed are produced from each 60 pounds (one bushel) of grain.[7] General Mills, Inc. has a daily milling capacity that could require up to 28,570 bushels of wheat and 7,140 bushels of durum. General Mills, Inc. can, therefore, grind 10 million bushels of spring and winter wheat annually and can grind 2.5 million bushels of durum wheat annually.

Pasta Montana, Great Falls, MT, is located in close proximity to General Mills, Inc. where Pasta Montana utilizes the mill to produce semolina for the production of pasta products. Pasta Montana produces over 50 million pounds of pasta products annually. Pasta Montana manufacturers pasta products from durum semolina and extrudes dough into over seventy shapes. The company has the capability of packaging dry pasta into a wide variety of packaging configurations tailored to their customers' needs. Pasta Montana delivers pasta products across the United States and into Asia.

Three additional milling operations are located in Great Falls Region: Montana Milling and Grain Craft in Great Falls, and Montana Flour and Grains in Fort Benton. Montana Milling produces flour and bakery mixes from a wide variety of grains and pulses, producing both organic and conventional flour and bakery mix products. Grain Craft operates a milling operation with the capacity of 5,400 hundredweight of flour per day. Grain Craft is the third largest milling company in the U.S. and is the largest privately owned milling company. Montana Flour and Grain has a daily flour milling capacity of 480 hundredweight per day. The company specializes in supply Kamut® brand wheat and flour along with a variety of other organic flour from a variety of grains.

The Great Falls Region's electrical costs are among the nation's lowest industrial electrical costs.[8] The City of Great Falls has the lowest industrial natural gas cost in Montana and that cost is lower than nearly all industrial sites in the nation. With lower energy and human resources operating costs, and operating within substantial wheat and pulse crop acreage, a specialty pasta manufacturing operation in the Great Falls Region would have significant input cost advantages to competition. A specialty pasta production facility in the Great Falls Region would have the opportunity to become the lowest cost producer of specialty pasta products in North America.

Pasta in America

The Public Broadcasting System reported that early Spanish settlers first brought pasta to the Americas. Pasta was popularized by Thomas Jefferson when he brought "macaroni' to the United States after consuming pasta during an extended stay in Paris from 1784 to 1789. Typically, pasta refers to a wide variety of extruded noodle shapes produced from unleavened dough made from durum wheat flour. Today, the definition of dried pasta has been expanded to include products made from a variety of grains and seeds and other ingredients including eggs. This business case is focused upon nontraditional pasta or alternative pasta production opportunities in the Great Falls Region.

The National Pasta Association noted that the average American eats 20 pounds of pasta per year making pasta the 6th most common food consumed annually. Pasta is one of the most economical foods available with an average grocery store price of $1.45 per pound. When dry pasta is cooked it takes up 1.4 times its weight in water, which reduces the price of pasta to $0.60 per pound. Americans eat more pasta than any other country at 6 billion pounds of pasta per year, which is 24% of the world's pasta consumption. American pasta manufacturers produce 4.4 billion pounds of pasta annually, which makes American pasta manufacturers second to only Italian pasta manufacturers in volume.[9]

Table 2 below shows the growth in retail pasta sales from 2007 to 2016 in billions of dollars. A nearly equivalent amount of pasta sales are sold through institutional food service operations and restaurants.[10]

Year	Dry Pasta	Chilled/Fresh Pasta	Canned/ Preserved Pasta
2007	2,270	210	110
2008	2,790	230	100
2009	2,940	250	90
2010	2,870	260	90
2011	2,840	270	90
2012	2,930	280	90
2013	3,020	300	90
2014	3,120	310	90
2015	3,220	320	90
2016	3,320	340	100

Table 2: Retail Market Size of Pasta Varieties in the U.S. (in $ Millions)

Pasta production in the U.S. has undergone consolidation to where most of the 4.4 billion pounds of pasta manufactured is produced by six companies.

- A. Zerega's Sons, Inc., Fair Lawn, NJ
- Treehouse Foods, Inc., Oakbrook, IL (American Italian Pasta Company)

- Post Holdings, Inc., St. Louis, MO (Dakota Growers Pasta Company)
- Ebro Foods, Winchester, VA (New World Pasta Company)
- Philadelphia Macaroni Company, Philadelphia, PA
- Pasta Montana, Great Falls, MT.

Specialty Pasta

Even though most of the nation's smaller pasta manufacturers have either been absorbed by larger companies or have ceased to conduct business, a number of specialty pasta manufacturers have emerged. Specialty pasta manufacturers include:

- Harvest Innovations, Indianola, IA (gluten free pasta)
- De Boles Pasta, Boulder, CO (nutritional/whole grain/gluten free pasta)
- MXO Global, Mont-Royal, QC, Canada (gluten free lentil pasta)
- Eden Foods, Clinton, MI (Kamut® pasta)
- Purity Foods, Inc., Hudson, MI (spelt pasta)
- Mrs. Leeper's Pasta, Bloomfield, NJ (organic/gluten free pasta)
- Banza LLC, Detroit, MI (chickpea pasta)
- Pappardeli's, Denver, CO (nutritional/gluten free pasta)
- Explore Cuisine, Red Bank, NJ (black bean pasta)
- Sunrise Creative Gourmet, St. Paul, MN (gluten free pasta)
- Aldente, Inc., Whitmore Lake, WI (reduced carbohydrate pasta).

Specialty pasta products are those that are not traditionally produced from wheat-based semolina or flour. The following charts and figures demonstrate specialty pasta product characterizations and the national and global growth rates of specialty pasta products,

Specialty Pasta Type	Ingredient Choices
Whole grain pasta	wheat, corn, spelt, Kamut®, rice
Whole pulse pasta	peas, lentils, black beans
Organic pasta	wheat, corn, rice, peas, lentils, black beans
High Protein pasta	fortified with soy, lentils, chickpeas, flaxseed
Nutrition pasta	flaxseed, fiber, vitamins, minerals
Gluten free pasta	wheat free, barley free, rye free
Reduced carbohydrate pasta	fiber, resistant starch
Combined attributes pasta	Any of the above

Table 3: Specialty Pasta Types

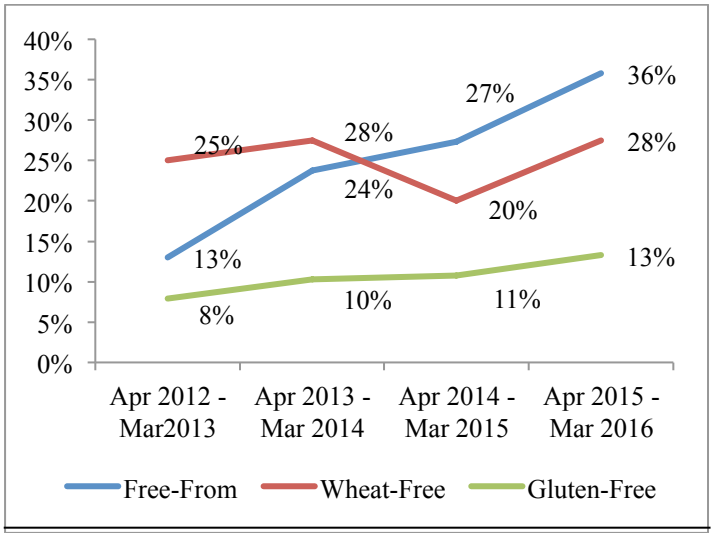

Figure 1: Global New Product Launches of Pasta, Rice, and Noodles
Source: Mintel GNPD

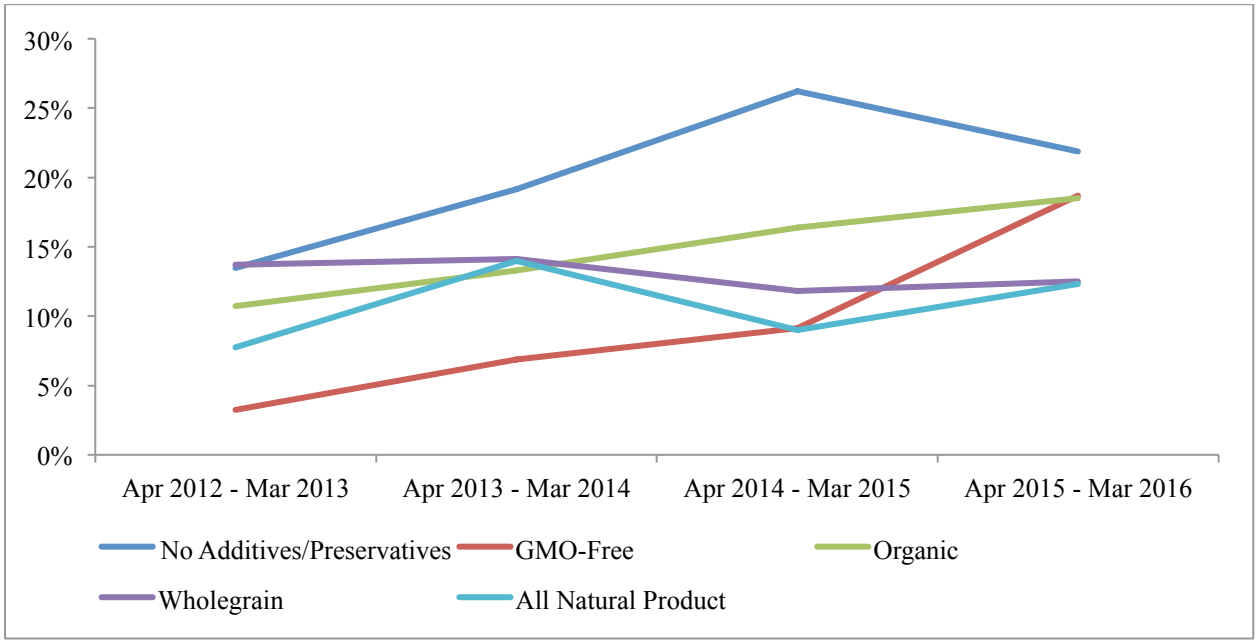

Figure 2: North America New Product Launches of Pasta, rice, and Noodles
Source Mintel GNPD

Most of the ingredient choices listed in Table 4 can be economically sourced in Montana. A summary of major crops grown in quantity in Montana are shown in Table 4 with percentages grown in the Great Falls Region.[11] The Great Falls Region is defined as the 13 county region surrounding Great Falls and includes Cascade, Teton, Pondera, Toole, Glacier, Choteau, Fergus, Liberty, Hill, Judith Basin, Lewis and Clark, Meager, and Blaine counties.

Commodity	Acres Harvested	Annual Yield	% Grown in Great Falls Region
Spring Wheat	2,440,000	75,640,000 bushels	35%
Winter Wheat	2,220,000	91,020,000 bushels	70%
Durum	605,000	18,755,000 bushels	15%
Barley	850,000	44,200,000 bushels	73%
Peas	550,000	7,975,000 cwt	29%
Lentils	222,000	2,442,000 cwt	9%
Chickpeas	31,200	305,000 cwt	57%
Oats	22,000	1,166,000 bushels	29%
Flax	30,000	450,000 bushels	9%

Table 4: Major Crops Grown in Montana (2015)

Specialty Foods

Specialty Foods Growth and Trends

The Specialty Food Association stated that 59% of Americans purchased gourmet specialty foods in 2014. Retail sales of specialty foods exceeded $70 billion in that year, which was up 18.8% over the previous two-year period.[12] The Food Marketing Institute reported that one third of American adults are engaged in special dietary regimens. The Institute noted that 76% of American households prepare meat alternatives, with 61% serving products with beans, lentils, or legumes.[13]

Many consumers are purchasing specialty foods to avoid food allergies. The U.S. Department of Human Services lists milk, peanuts, tree nuts, wheat, soy, eggs, fish and crustacean shellfish as major allergens. Avoidance of foods containing allergens, chemical additives, preservatives, and high fructose corn syrup was the second fastest growing food consumption behavior according to Euromonitor in 2014. The fastest growing food consumption behavior was the switch to high fiber/whole grain products.[14]

The top trend in culinary side dishes for 2015 is non-wheat pasta and noodles followed by side dishes made from ancient grains, as reported by the National Restaurant Association.[15] Sprouted grain-based food products are also gaining in popularity. In 2014, it was reported that 73% of adults and 86% of Millennials consume organic foods and beverages.[16] The International Food Information Council in 2014 reported that 87% of American adults believe that protein-containing foods build muscle, 66% believe that protein foods aid in weight loss, and 64% believe that protein foods provide energy throughout the day.[17]

Gluten Free Pasta

Technavio completed a study of the U.S. gluten free foods market and concluded that the annual sales growth from 2016 through 2020 will be 10% annually.[18] The global market for gluten free foods was estimated to be $4.63 billion in 2015 and is projected to grow to $7.59 billion in 2020, a 10.4% projected annual growth rate.[19] The gluten free pasta and rice global market is estimated to be 5% of the overall gluten free marketplace.[20] The North American market is estimated to be 45% of the global gluten free pasta and rice market. Gluten free pasta and rice products sales volume in North America is estimated to be $104 million in 2015 and projected to increase to $170 million in 2020.

Whole Grains/Ancient Grains/Organic Pasta

Consumers are moving from consuming refined grain flour products to whole grain flour products. According to the Oldways Whole Grain Council, two thirds of Americans are eating at least half of their grains consumption in the form of whole grains.[21] A Health Focus International 2015 report noted that 71% of survey respondents stated that whole grains are a preferred source of nutrition in food products.

Fiber in foods was of particular interest by those respondents as well.[22] SPINS Trendwatch reported that sales of ancient grain products rose quickly in 2014, where Kamut® brand khorasan wheat products posted a yearly sales gain of 686% with other ancient grains, such as spelt, teff, and faro posting significant increases as well.[23]

Organic foods broke sales records in 2014 with an annual 11.3% increase in sales to $39.1 billion by 2015 according to the Organic Trade Association.[24] Organic foods now have a 5% market share of all foods sold in America. According to Mintel, although the definition of natural is vague, highlighting simple messages such as ‘all-natural’, ‘organic’ and ‘GMO-free’ on specialty pasta packages will remain key when it comes to aligning with the demand for less processed and safer products.[25]

Figure 3 illustrates the growth rate annually in new product launches for organic pasta, rice and noodles from April 2012 to the present. Figure 4 shows that organic new product launches were most prevalent for side dishes including pasta for 2015 and 2016. Figure 5 shows that pasta is the side dish most consumed in the North American marketplace.

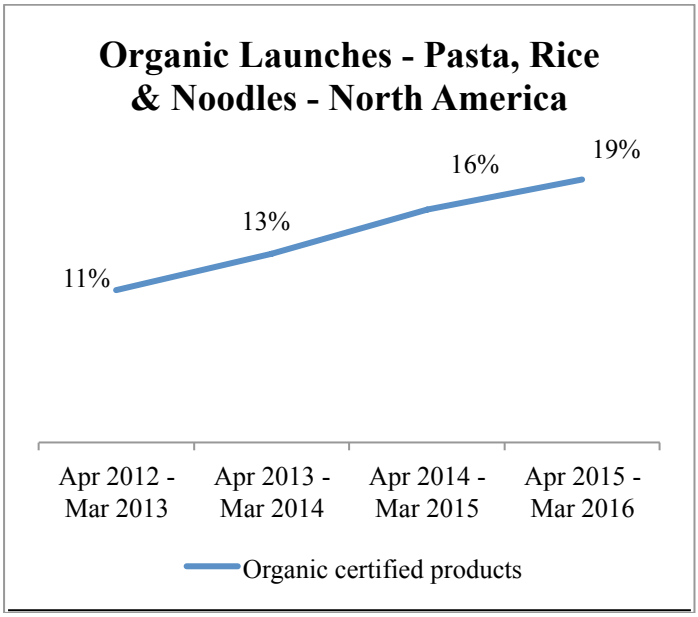

Figure 3: North American New Product Launches–Organic Pasta, Rice & Noodles
Source: Mintel GNPD

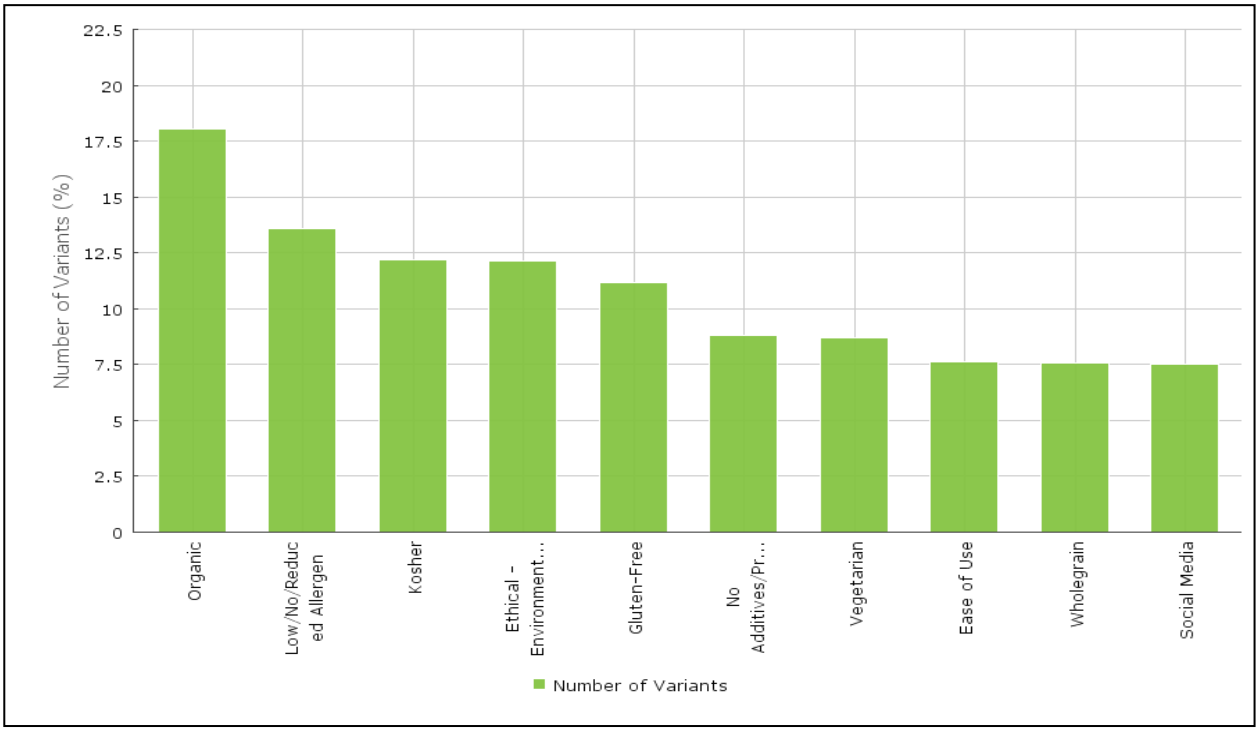

Figure 4: Types of New Product Launches in 2015/2016 for Side Dishes Including Pasta
Source: Mintel GNPD

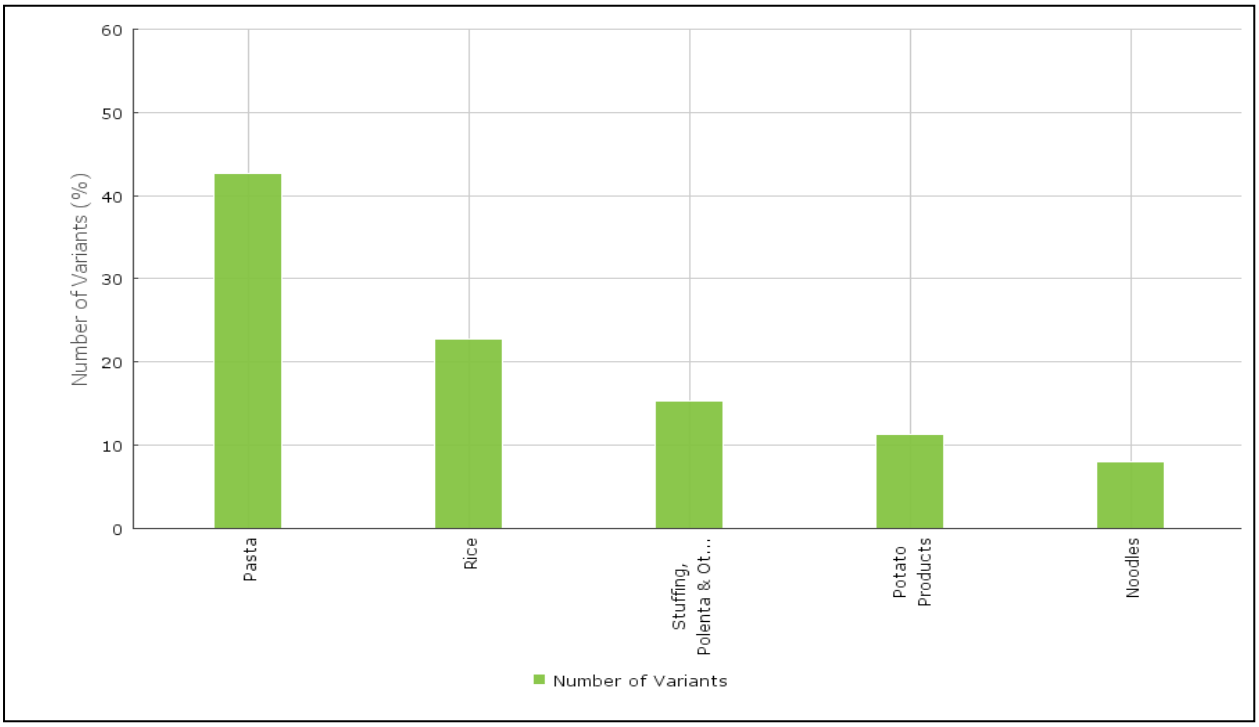

Figure 5: Types of Side Dishes in the North American Market by Percentages Source: Mintel GNPD

Production of Specialty Pasta Products

The commercial processing steps in the production of specialty pasta are nearly identical to the production of traditional pasta. Figure 6 shows a simplified flow chart illustrating the production of specialty pasta dough.

Naturally, the process for the production of specialty pasta is much more complicated regarding recipe formulation, equipment, processing procedures, drying procedures, and the use of proper food safety procedures. Fortunately, pasta production technology has evolved into a reliable, efficient methodology of food production. A number of pasta equipment manufacturers and qualified consulting associates are members of the National Pasta Association.[26] Those Association members could provide abundant technical assistance in the design, construction, and operation of a specialty pasta manufacturing operation in the Great Falls Region.

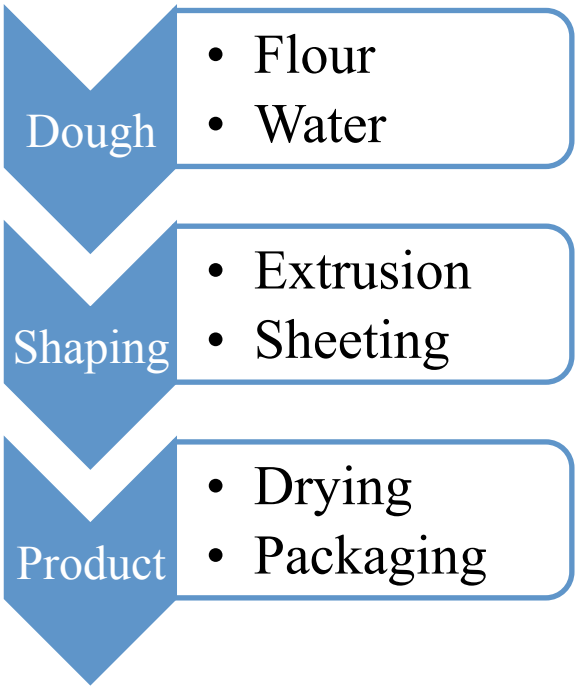

Figure 6: Specialty Pasta Production Steps

Grain and Pulse Resources in the Great Falls Region

Commodities that are most applicable for the production of specialty pasta in the Great Falls Region are durum wheat, lentils, peas, and chickpeas. Other commodities that can be used in combination with primary specialty pasta commodities are flaxseed, dry edible beans, spelt, and Kamut® wheat. The availability of durum wheat, lentils, peas, and chickpeas from the Great Falls Region has been growing steadily over the last decade and that availability is projected to remain strong. Durum wheat is being used as the baseline ingredient in a wide range of specialty pasta products.

Durum Wheat Production Resources in the Great Falls Region

Durum wheat is the grain commodity utilized for the production of semolina for traditional pasta production. Traditional pasta is produced using two ingredients: semolina and water. Semolina is the endosperm portion of durum wheat and is milled into granular form. The Great Falls Region harvested 2,740,000 bushels of durum wheat in 2015. Durum wheat produced in the Region represents 15% of the 18,755,000 bushels harvested in Montana in 2015. Montana harvested a record amount of durum wheat in 2015.

Figure 7 shows durum wheat production in the United States in 2015. Montana is the second largest durum producer state behind North Dakota but ahead of Arizona and California.

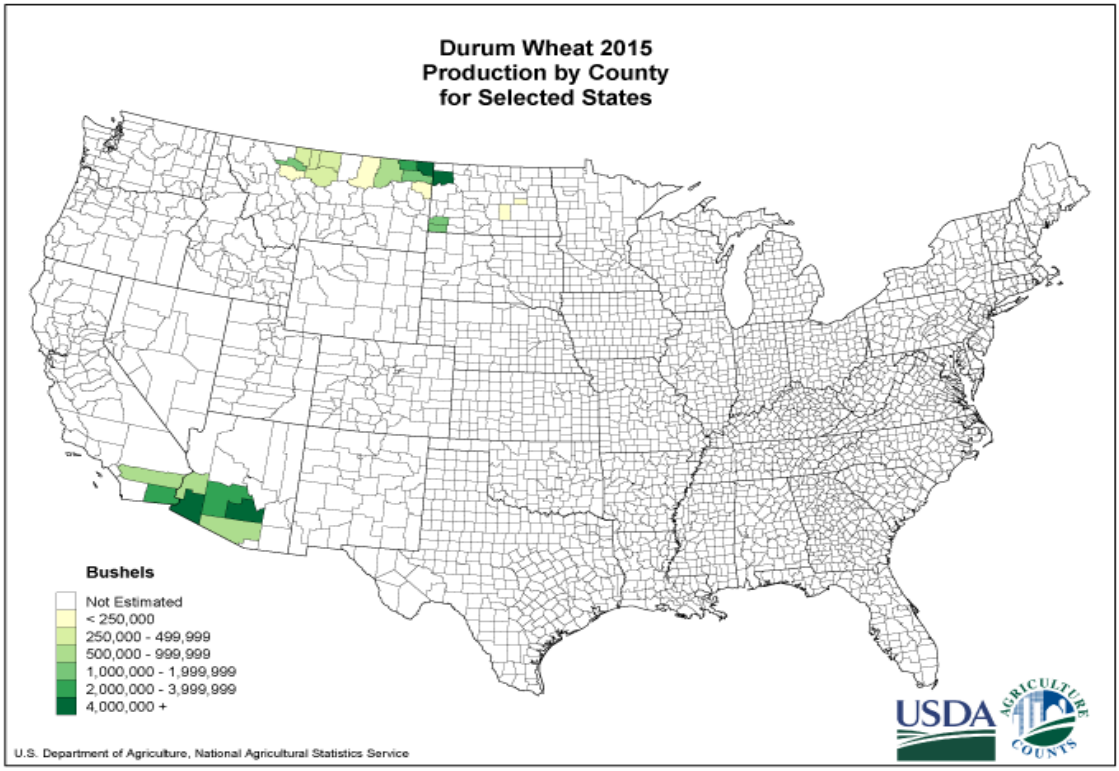

Figure 7: Durum Wheat Production in the U.S. in 2015
Source: USDA, NASS

Pulse Crop Production Resources in the Great Falls Region

In 1998, fewer than 66,000 acres in Montana were planted with pulse crops. In 2015, more than 880,000 acres in Montana were planted with chickpeas, lentils, and dry peas.[27] Montana is now the nation's number one producer of lentils and dry peas and ranks third among chickpea producing states. Pulse crop production has been replacing fallow land in Montana at an increasing pace over the last fifteen years. Chickpeas, lentils, and dry peas grow well in Montana's cool and semi-arid climate. The Montana Department of Agriculture has predicted that Montana's pulse crop acreage could increase to more than 1.2 million acres by 2025.[28]

In 2015, the Great Falls 13 County Region produced 67% of Montana's chickpea production on 37,225 acres and yielded 55,837,500 pounds of chickpeas. The Great Falls Region produced 16% of Montana's lentil production on 35,603 acres and yielded 40,943,500 pounds of lentils. The Region produced 33% of Montana's dry pea production on 196,711 acres and yielded 324,573,200 pounds of dry peas. (Figure 8 and Table 5) Overall, the Great Falls 13 County Region produced over 31% of Montana's total pulse crop production in 2015. Pulse crop acreage in Montana increased from 701,780 acres in 2014 to 879,347 acres in 2015, which amounted to a 25% jump over 2014 acreage.

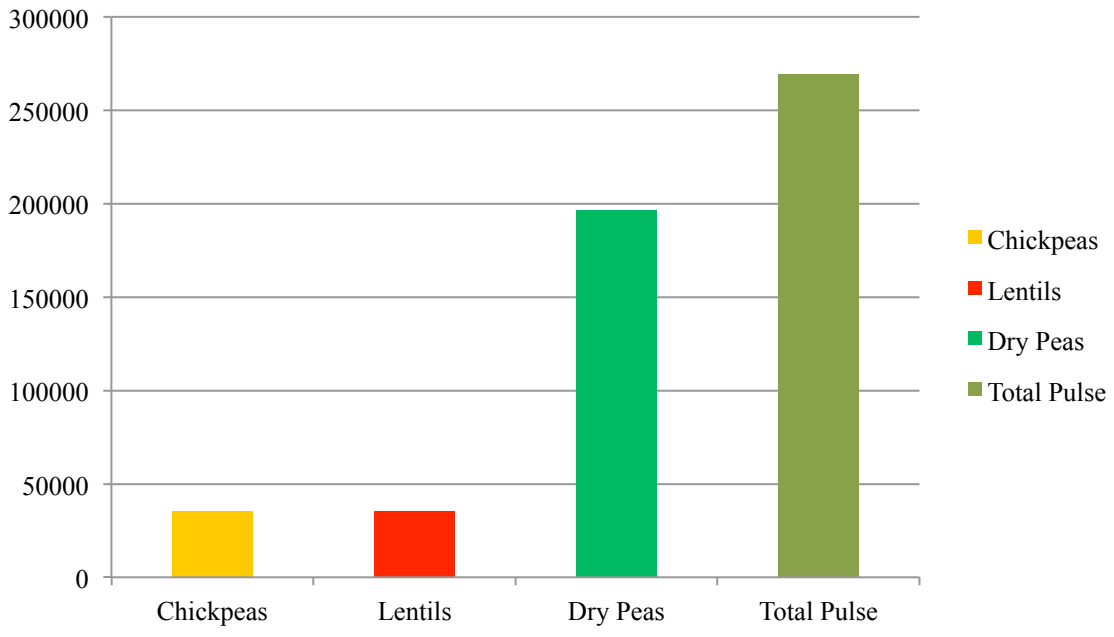

Figure 8: Pulse Crop Acreage in the 13-County Great Falls Region in 2015
Source: Montana FSA USDA

Great Falls Region 2015 Pulse Crop Production by Acreage				
13 County Region	**Chickpea Acreage**	**Lentil Acreage**	**Dry Pea Acreage**	**County Acreage**
Blaine	625	1,978	16,178	18,781
Cascade	107	530	7,379	8,016
Chouteau	8,860	1,159	19,216	29,235
Fergus	1,576	2,054	3,244	6,874
Glacier	2,548	7,932	29,450	39,930
Hill	7,981	5,240	33,878	47,099
Judith Basin	-	228	3,517	3,745
Lewis and Clark	-	-	500	500
Liberty	1,495	9,417	27,353	38,265
Meager	-	-	2,153	2,153
Pondera	1,120	2,196	7,723	11,039
Teton	10,668	1,165	9,260	21,093
Toole	2,245	3,704	36,860	42,809
13 County Acreage	**37,225**	**35,603**	**196,711**	**269,539**
Montana State Acreage	55,294	221,938	602,115	879,347
13 County/MT Acre %	67%	16%	33%	31%
Great Falls Region 2015 Pulse Crop Production by CWT				
13 County CWT	**558,375**	**409,435**	**3,245,732**	**4,213,541**
Montana State CWT	829,410	2,552,287	9,934,898	13,316,595
13 County/MT CWT %	67%	16%	33%	32%

Table 5: Great Falls Region Pulse Crop Acreage and Production for 2015
Source: Montana FSA USDA

Chickpea Production in the Great Falls Region

A number of specialty pasta products have been formulated with chickpeas as the sole or primary ingredient. As a primary ingredient, chickpeas are used in food formulations to provide protein and fiber nutrition in addition to being gluten free and non-allergenic. The Great Falls Region has dramatically increased chickpea production over the last three years. The Great Falls Region has increased chickpea production from 4,898 acres in 2013 to 37,225 acres in 2015, a 660% increase over production in 2013.

Figure 9 shows the significant rise in chickpea acreage in the Region and Figure 10 shows the Region's corresponding increase in the overall percentage of chickpea production in Montana from 2013 through 2015. Chickpea production in the Great Falls Region exceeded 55 million pounds in 2015.

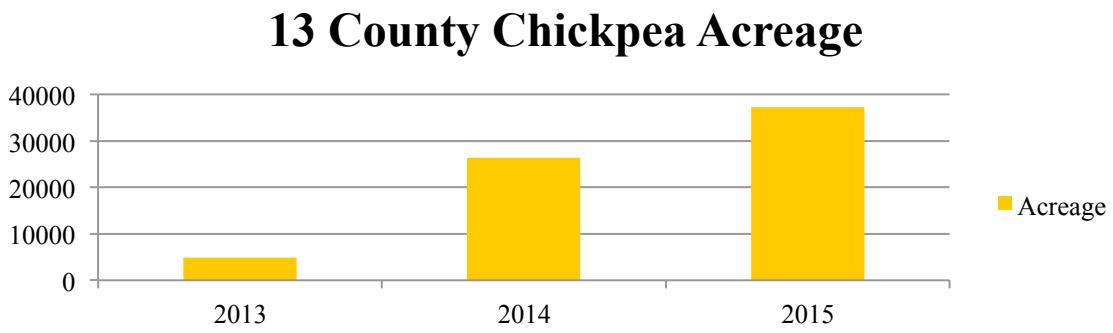

Figure 9: Great Falls 13 County Chickpea Acreage Increase – 2013 through 2015
Source: Montana FSA USDA

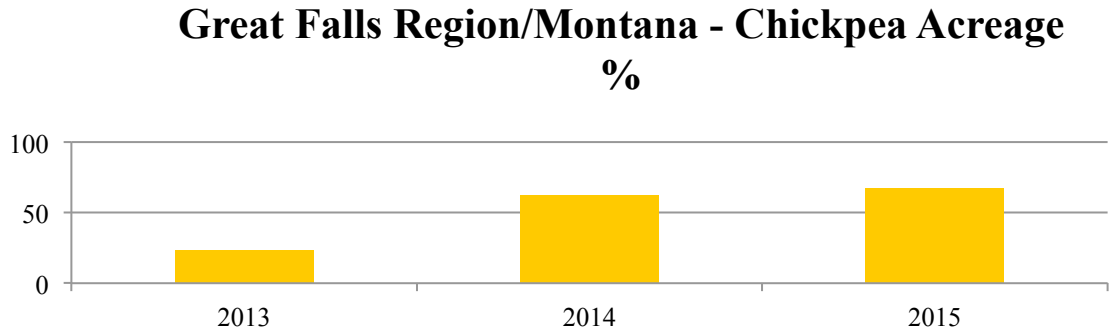

Figure 10: Great Falls Region/Montana Chickpea Acreage % - 2013 through 2015
Source: Montana FSA USDA

In 2015, 67% of all chickpea acres harvested in Montana were in the Great Falls Region as shown in Figure 11. The widespread distribution of chickpea acres in the Great Falls Region is shown in Figure 12.

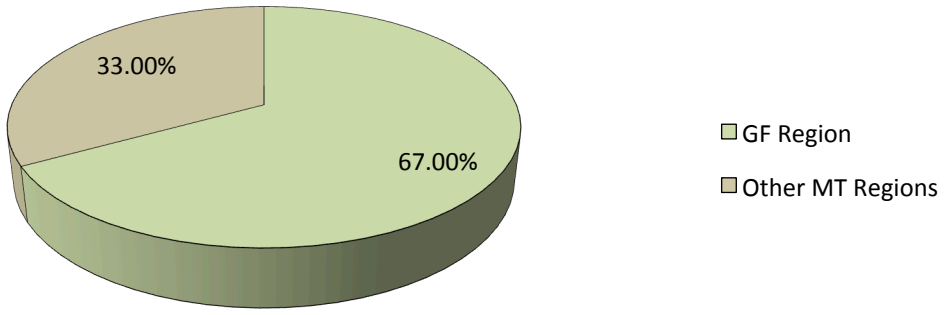

Figure 11: 67% of Montana Chickpea Acres Harvested in Great Falls Region Trade Area
Source: Montana FSA USDA

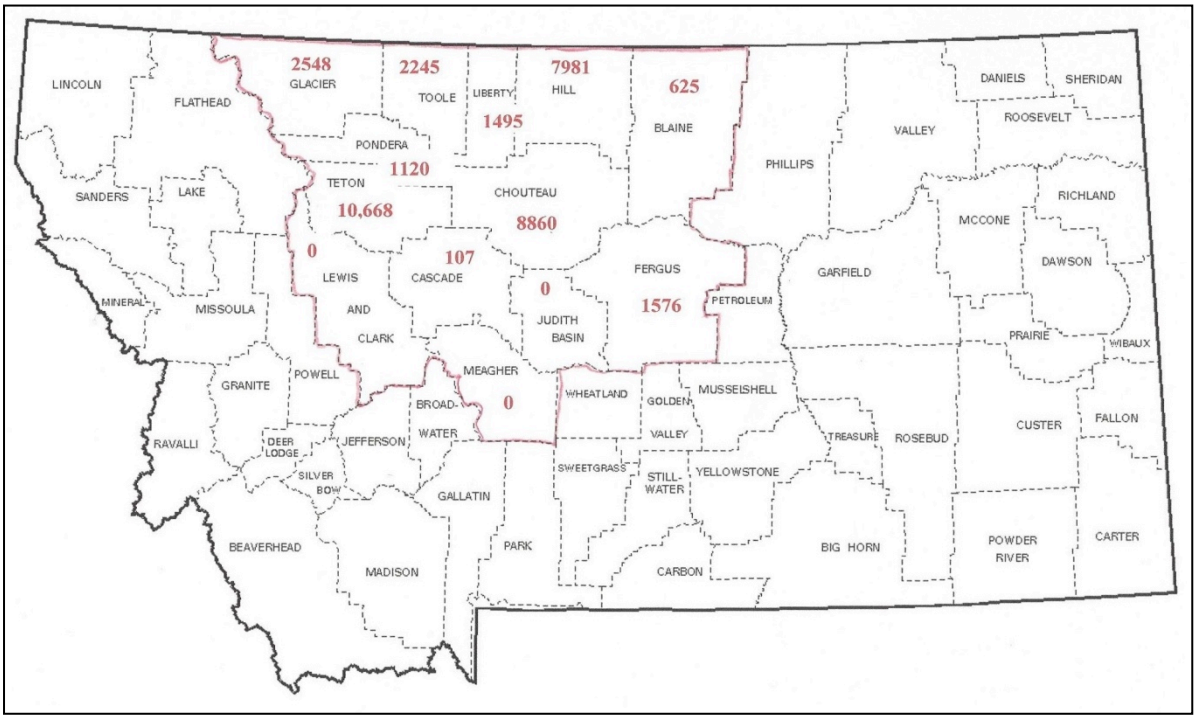

Figure 12: Great Falls Region 2015 Chickpea Acreage by County – 37,225 Acres
Source: Montana FSA USDA

Lentil Production in the Great Falls Region

Specialty pasta products are increasingly being manufactured using lentils as the sole or primary ingredient due to lentil's reputation for high nutrient value. Lentils are used in food formulations to provide protein and fiber nutritional benefits in addition to being gluten free and non-allergenic The Great Falls Region has increased lentil production from 21,062 in 2013 to 35,603 acres in 2015, a 69% increase over production in 2013.

Figure 13 shows the increase in lentil acreage in the Region and Figure 14 shows the Region's corresponding increase in the overall percentage of lentil production in Montana from 2013 through 2015. Lentil production in the Great Falls Region exceeded 40 million pounds in 2015.

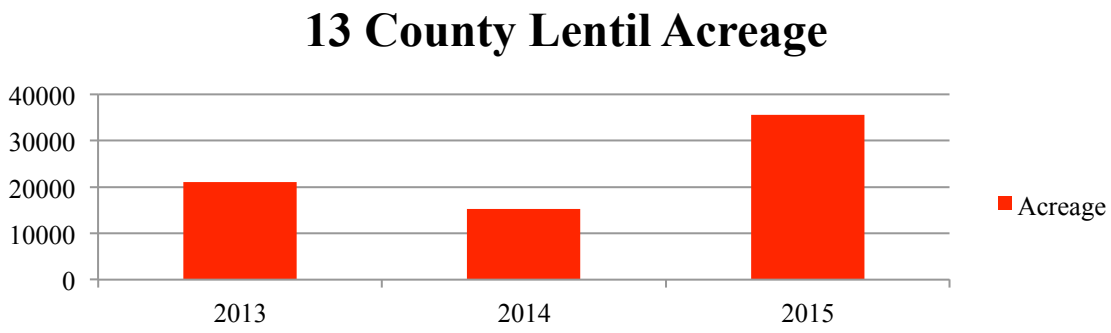

Figure 13: Great Falls 13 County Lentil Acreage Increase – 2013 through 2015
Source: Montana FSA USDA

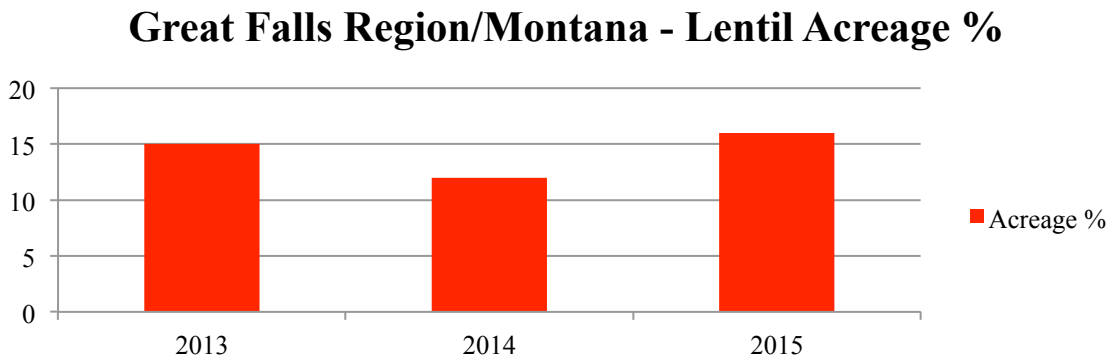

Figure 14: Great Falls Region/Montana Lentil Acreage % - 2013 through 2015
Source: Montana FSA USDA

In 2015, 16% of all lentil acres harvested in Montana were in the Great Falls 13 County Region as shown in Figure 15. The widespread distribution of lentil acres in the Great Falls Region is shown in Figure 16.

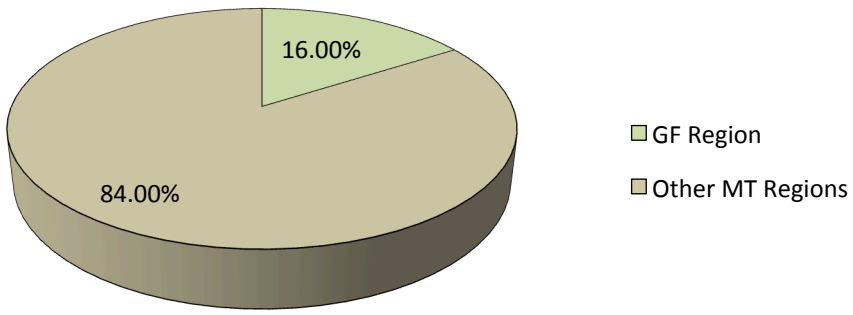

Figure 8: 14% of Montana Lentil Acres Harvested in Great Falls Region Trade Area
Source: Montana FSA USDA

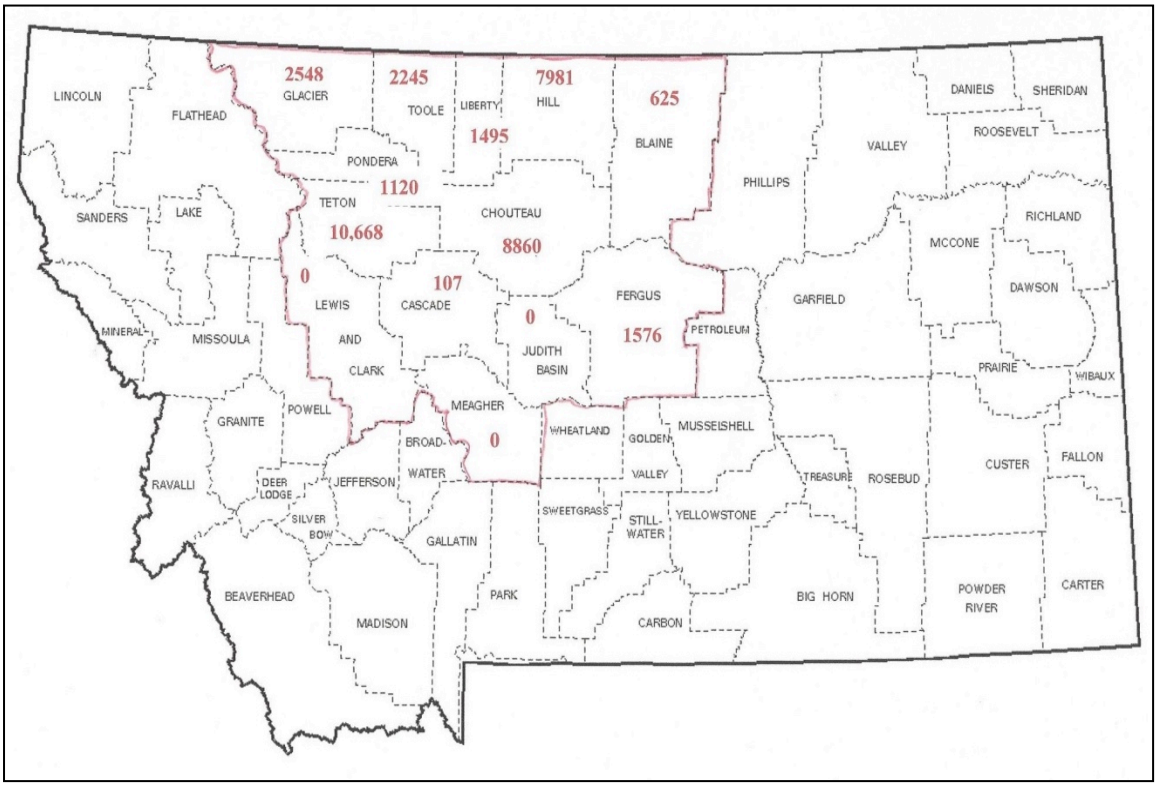

Figure 16: Great Falls Region 2015 Lentil Acreage by County – 35,603 Acres
Source: Montana FSA USDA

Dry Pea Production in the Great Falls Region

Pulse crop specialty pasta products are being formulated using dry peas as an ingredient due to peas' considerable protein, fiber, and resistant starch content. Dry peas are favored for use in food formulations to provide abundant nutrition also in addition to being gluten free and non-allergenic The Great Falls Region has increased dry pea production from 169,638 in 2013 to 196,711 acres in 2015, a 16% increase over production in 2013.

Figure 17 shows the increase in dry pea acreage in the Region and Figure 18 shows the Region's corresponding increase in the overall percentage of lentil production in Montana from 2013 through 2015. Dry pea production in the Great Falls Region exceeded 324 million pounds in 2015.

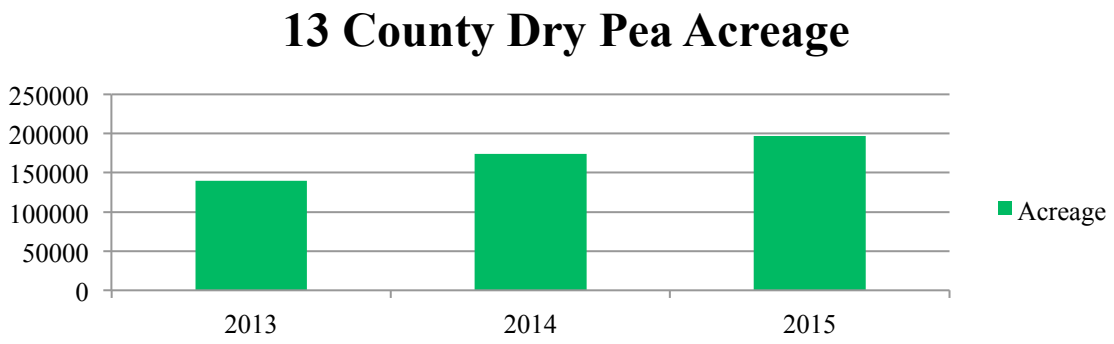

Figure 17: Great Falls 13 County Dry Pea Acreage Increase – 2013 through 2015
Source: Montana FSA USDA

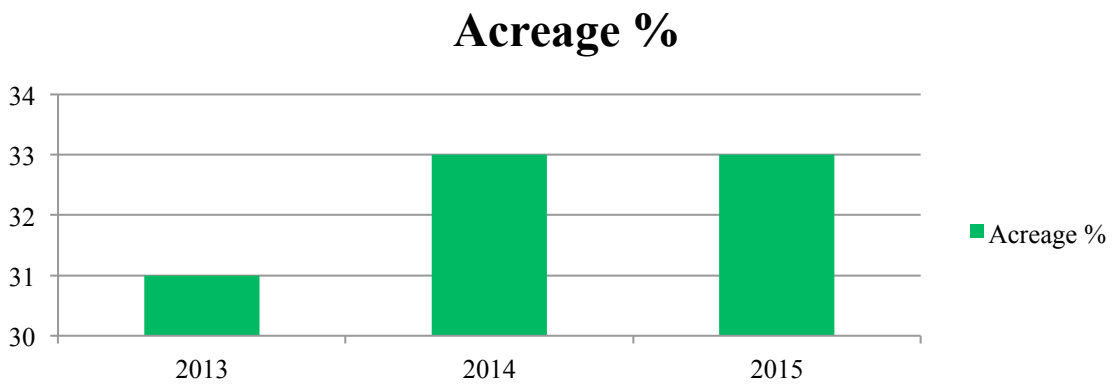

Figure 18: Great Falls Region/Montana Lentil Acreage % - 2013 through 2015
Source: Montana FSA USDA

In 2015, 33% of all dry pea acres harvested in Montana were in the Great Falls Region as shown in Figure 19. The widespread distribution of dry pea acres in the Great Falls Region is shown in Figure 20.

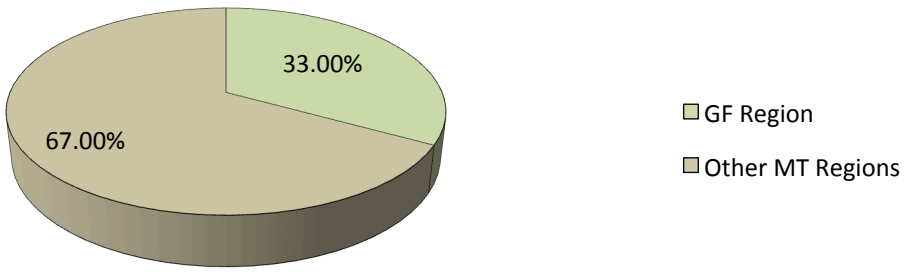

Figure 19: 33% of Montana Dry Pea Acres Harvested in Great Falls Region Trade Area

Source: Montana FSA USDA

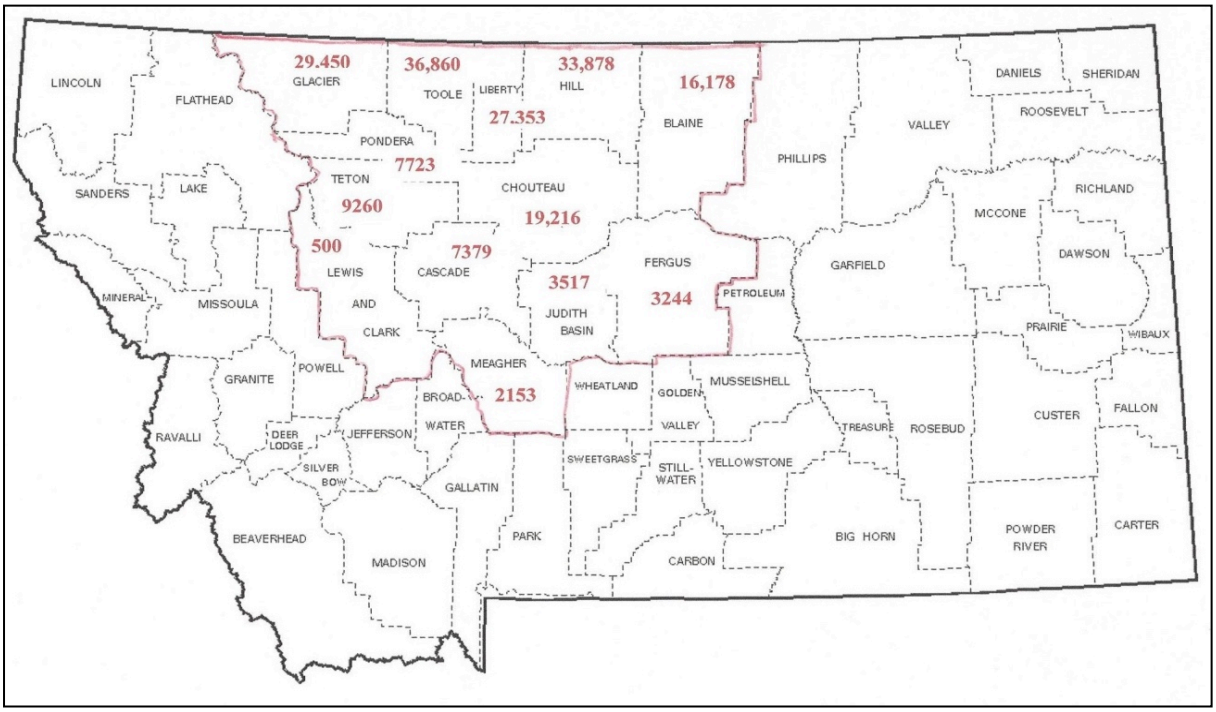

Figure 20: Great Falls Region 2015 Dry Pea Acreage by County – 196,711 Acres
Source: Montana FSA USDA

The percentage of pulse crop acres harvested in the Great Falls Region is projected by the Montana Department of Agriculture to increase as Montana farmers embrace the economic opportunity that includes placing pulse crops into their wheat crop rotation. Montana State University recently studied the economic impact produced by the introduction of dry pea production crop rotation into traditional wheat production in Montana. Net farm returns were calculated for four rotation scenarios. Dry pea–wheat rotation consistently had the greatest net returns among six historical systems studied. The study concluded that dry pea–wheat systems can reduce net return uncertainties for Montana wheat farmers.[29]

The thirteen county Great Falls Region had harvested 89,400 acres of durum wheat in 2015, which accounted for 15% of durum wheat acres harvested in Montana. The Great Falls Region harvested 269,538 acres of pulse crops, which, comparably, was three times greater than the Region's durum wheat acreage. (Figure 21) Farmers in the thirteen county Region are forecasted to become more aware and more receptive of the potential for higher on-farm net returns from pulse crop production and farmers are projected to increasingly adopt the practice of raising pulse crops in their spring, winter, and durum wheat rotations. Pulse production in the Great Falls Region is projected to continue to increase as part of the economically and environmentally superior practice of rotating pulse crop production with wheat production.

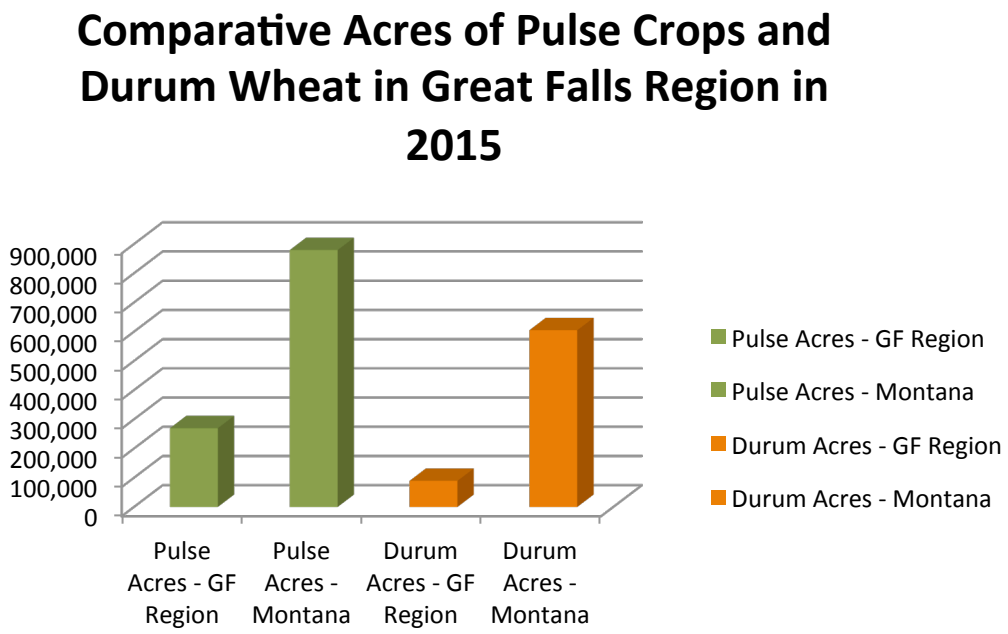

Figure 21: Dry pea and Durum Acres Harvested in the GF Region and Other MT Regions
Source: Montana FSA USDA

The Great Falls Region contributes toward Montana being the leading state in the production of dry pulse crops, a statistic earned by the production of over 558,375 hundredweight of chickpeas, 409,435 hundredweights of lentils, and 3,245,732 hundredweight of dry peas in 2015. Montana has been producing 48% of the nation's pulse crop production. As an example, the state not only leads in production, but has shown consistent growth in dry pea production over the past six years compared to total U.S. dry pea production as shown in Figure 22.

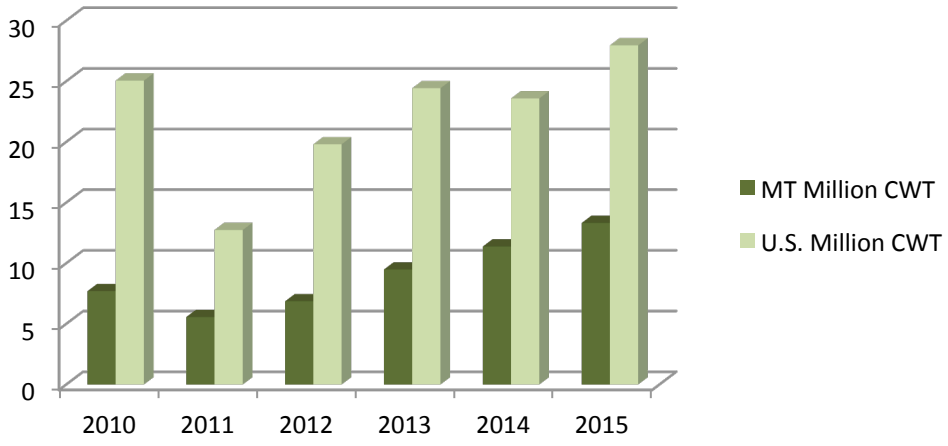

Figure 22: Montana and U.S. Dry pea Production: 2010 – 2015

Source: USDA, NASS, 2010-2015 Data

The availability of durum wheat and pulse crops is not in question in the Great Falls Region due to the widespread and historic durum wheat and pulse crop growing region within Montana and the prairie provinces of Canada. In addition to abundant and increasing durum wheat and pulse crop production in the Great Falls Region, durum wheat and pulse crop production in Canada has also been increasing over the last decade.

Pulse production in Canada in 2015 exceeded 119 million hundredweight.[30] Durum wheat production in Canada in 2015 exceeded 4.7 million metric tons.[31] Durum wheat and pulse crop production in Canada adjacent to Montana is concentrated primarily in the provinces of Saskatchewan, and Alberta with Saskatchewan with pulse crop and durum wheat production in those provinces contributing over 60% of Canada's output.[32]

Proximity to Raw Materials

The Great Falls Region has a near ideal environment for prairie grasslands and their related cousins, small grains. As in other semiarid prairie grassland regions of the world, the raising of small grains and pulse crops has and will continue to dominate agricultural production in the Great Falls Region. The Great Falls Region's agricultural crop profile is dominated by wheat, barley, and pulse crops. The most rapidly increasing crop category in the Region is pulse crops, namely, peas, lentils, and chickpeas.

Specifically, the Great Falls Region has the competitive advantage of a combination of geographic features, climactic conditions, topsoil composition, and water resources to make the Region a major intensive supplier of small grains and pulses. Montana, and specifically the Great Falls Region, produces excellent quality malting quality barley, wheat and pulses. Farmers in the Great Falls Region have the resources and knowledge base to consistently produce high quality and high quantities of sprouting grains in particular. The Great Falls Region has the advantage of raising a wide variety of consistently high quality small grain commodities and pulse crops in addition to traditional wheat and barley crops.

Within the Great Falls Region lies the Pondera County Canal and Reservoir District located in Pondera County. The District has been privately owned for 105 years and has 400 shareholders. The Company owns 30,000 acre feet of reservoir storage and 500 miles of canals. One of the primary commodities produced in the Reservoir District is barley. The barley grown in the District is among the finest quality barley grown anywhere in the world.

The competitive advantages of prodigious small grain and pulse production in the Great Falls Region point toward engaging in agri-processing economic development efforts with two categories of business development. The first category includes large scale, conventional commodity processing involving significant capital investment in plant and equipment. The

second category discussed in this business case includes smaller scale, niche oriented processing, namely specialty pasta production.

A great example of large scale utilization of commodities is malting of barley in the Great Falls Region, which is dominated by the 200,000 ton per year malt processing facility, Malteurop. Large scale commodity processing of wheat in the Great Falls Region is dominated by three flour mills including General Mills, Montana Milling, and Cereal Food Processors, all located in Great Falls. All three mills could function as primary suppliers of flour ingredients for a Great Falls Region-based specialty pasta manufacturer. Smaller scale grain processing, namely, specialty pasta processing is feasible in the Great Falls Region due to abundant, high quality grain and pulse supply, a willing labor force, low cost energy, and a fast growing specialty pasta industry in the U.S..

One large benefit derived from operating a specialty pasta production facility within grain production areas is that a specialty pasta production company can contract and purchase its grains and pulses directly from regional farmers and from local elevators. By receiving grains and pulses directly from regional farmers, a specialty pasta manufacturing company can capture receiving, cleaning, and conditioning margins that can amount to greater than 10% of annual raw material costs. By locating a specialty pasta production operation in the Great Falls Region, a specialty pasta production company would be operating in very close proximity to raw materials and thereby driving down the company's highest volume direct cost

Currently, many specialty pasta manufacturing companies are located outside grain and pulse growing regions. An analysis of major competitors that market specialty pasta shows concentrations of operations are located in Colorado, New Jersey, Quebec, Michigan, Wisconsin, and Minnesota. In general, specialty pasta manufacturers are located in higher population states.

Smaller, regional specialty pasta manufacturers can be found in the prairie provinces of Canada and a few U.S. plains states. By establishing specialty pasta manufacturing operations in the Great Falls Region, specialty pasta manufacturing companies would be operating in close proximity to raw materials, using cost effective energy and labor, and would thereby drive down direct costs to become a low cost producer.

The grain and pulse crop millers in the Great Falls Region work with their customers to employ direct contracting procurement activities with Montana-based grain and pulse crop growers. Food manufacturers in the Region have also established long term relationships with grain and pulse crop growers in order to ensure reliability of supply and quality. Direct procurement programs provide enhanced control of the product quality from the farmer's seed through to packaged specialty pasta products. Specialty pasta producers have a variety of procurement options to secure grain and pulse crops of specified quality, at reasonable costs.

Specialty pasta producers have the option of purchasing from procurement sites in the Great Falls Region. Regional grain elevators that receive, clean, condition, and store grains and pulse crops are the primary procurement sites for crops grown in the Great Falls Region. Specialty pasta manufacturers can purchase commodities from regional grain elevators on the spot market or can contract with regional grain elevators for future deliveries. Also, specialty pasta manufacturers can rely upon their flour suppliers to cost effectively procure ingredients for their operations.

Specialty Pasta Production Value Chain

The specialty pasta value chain has a number of distribution options for a specialty pasta processing facility in the Great Falls Region. A specialty pasta processing facility could produce specialty for food ingredient use, food service operations, and for retail markets. Small scale specialty pasta manufacturers have the option of obtaining cash flow for their businesses by marketing and selling their products directly to consumers via the Internet and small venues such as farmers' markets. Sales growth enables specialty pasta manufacturers to achieve production quantities so that a specialty pasta processing facility can market and sell their products to food manufacturers, food service distributors, and retail distributors.

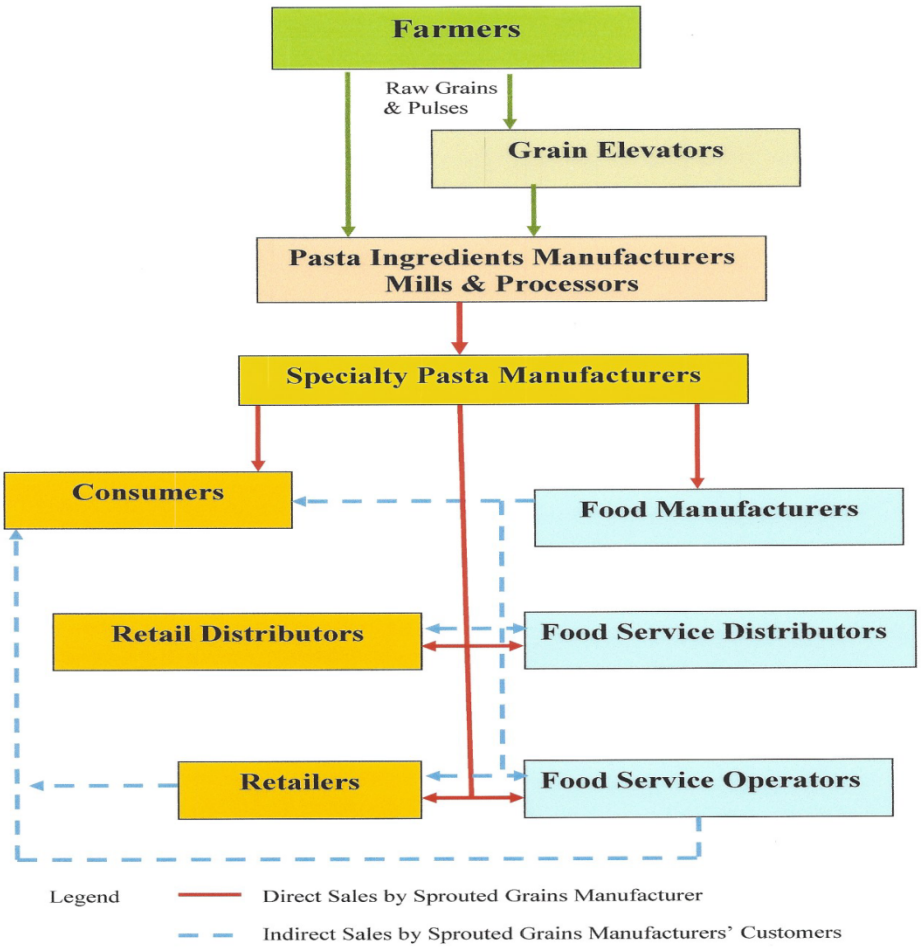

Figure 23 shows the value chain options available for specialty pastas manufacturer. Specialty pastas manufacturers can sell directly to a number of customers, namely, food manufacturers, food service distributors, retail distributors, food service operators, retailers, and consumers. All of the intermediate customers in the value chain, except for consumers, have the option of selling specialty pastas products to their customers downstream in the value chain. With projected rapid growth of specialty pasta products, a specialty pastas manufacturer can be selective

Figure 23: Specialty Pasta Manufacturing Value Chain

Financial Illustration – Specialty pasta Production

Shown below is a summary compilation of the financial performance of 41 pasta production facilities. The data was compiled by Bizminer.com from a combination of U.S. government and private organization information sources. The average annual sales revenue for the 41 representative pasta companies was ranged from $9.5 million to $11.9 million. The annual sales volume of the representative companies ranged from $5 million to $25 million.

Table 6 shows Income and Expenses in dollars for the 41 representative pasta manufacturing companies from 2010 through the second quarter of 2015. Table 7 shows Income and Expenses as percentages of revenue. Analysis of Table 7 shows annual after tax net profits percentage of revenue range from 7.3% to 9.9%. Discretionary annual owner earnings percentages of revenue range from 11.9% to 14.2%.

Table 8 shows the dollar based compilation balance sheet of the representative companies for years 2010 to 2015. Table 9 shows the percentage based compilation balance sheet of the representative companies for years 2010 to 2015. The balance sheet show very favorable current ratios of total current assets divided by total current liabilities. The total liabilities to total assets ratio is very favorable for the representative companies. Net worth to total liabilities ratio is favorable averaging 50%.

Figure 24 shows favorable percentage returns on EBITA (earnings before interest, taxes, and amortization), assets, net worth, and sales. Review of the financial data of 41 representative pasta manufacturers shows that the business of pasta manufacturing can be profitable and can provide favorable returns on equity. Additional financial data for representative pasta manufacturing companies can be obtained from Bizminer.com.[33]

Income and Expense- Profit and Loss $

	2010	2011	2012	2013	2014	2015q2
Business Revenue	11,082,208	11,631,936	11,901,230	10,659,324	9,925,468	9,540,645
Cost of Sales	6,748,824	7,088,763	7,170,427	6,613,045	6,391,049	6,139,156
Cost of Sales - Labor Portion	454,784	639,146	565,272	422,062	464,066	445,775
Gross Margin	4,333,384	4,543,173	4,730,803	4,046,279	3,534,419	3,401,489
Officers Comp.	209,610	280,479	310,581	217,233	253,114	238,058
Salary-Wages	634,263	664,868	742,750	652,977	539,934	510,829
Rent	274,852	277,188	165,826	225,734	240,781	226,262
Taxes Paid	153,747	185,923	197,786	191,181	185,875	175,921
Advertising	84,991	69,006	71,024	85,756	84,765	79,523
Benefits-Pensions	170,981	102,794	110,942	142,830	139,453	132,083
Repairs	49,121	77,019	32,655	63,463	40,628	37,841
Bad Debt	21,928	1,886	4,630	9,004	2,377	2,252
Sales, General, Admin & Misc.	760,808	1,037,554	1,201,960	905,716	748,265	721,007
EBITDA	1,973,083	1,846,456	1,892,649	1,552,385	1,299,227	1,277,713
Amortization Depreciation Depletion	323,490	415,593	137,414	265,093	208,386	194,483
Operating Expenses	2,683,791	3,112,310	2,975,568	2,758,987	2,443,578	2,318,259
Operating Income	1,649,593	1,430,863	1,755,235	1,287,292	1,090,841	1,083,230
Interest Income	1,870	0	6,741	1,656	1,152	1,105
Interest Expense	102,332	179,160	21,952	76,406	23,823	21,901
Other Income	41,777	37,748	48,396	45,018	27,371	26,271
Pre-Tax Net Profit	1,590,908	1,289,451	1,788,420	1,257,560	1,095,541	1,088,705
Income Tax	540,908	438,413	608,062	427,570	372,484	370,160
After Tax Net Profit	1,050,000	851,038	1,180,358	829,990	723,057	718,545
Discretionary Owner Earnings	1,583,100	1,547,110	1,628,353	1,312,316	1,184,557	1,151,086

Table 6: Compiled Income Statement in $ for 41 Pasta Manufacturers from 2010 to 2015
Source: Bizminer.com

Income and Expense- Profit and Loss %

	2010	2011	2012	2013	2014	2015q2
Business Revenue	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of Sales	60.90%	60.94%	60.25%	62.04%	64.39%	64.35%
Cost of Sales - Labor Portion	4.10%	5.49%	4.75%	3.96%	4.68%	4.67%
Gross Margin	39.10%	39.06%	39.75%	37.96%	35.61%	35.65%
Officers Comp.	1.89%	2.41%	2.61%	2.04%	2.55%	2.50%
Salary-Wages	5.72%	5.72%	6.24%	6.13%	5.44%	5.35%
Rent	2.48%	2.38%	1.39%	2.12%	2.43%	2.37%
Taxes Paid	1.39%	1.60%	1.66%	1.79%	1.87%	1.84%
Advertising	0.77%	0.59%	0.60%	0.80%	0.85%	0.83%
Benefits-Pensions	1.54%	0.88%	0.93%	1.34%	1.41%	1.38%
Repairs	0.44%	0.66%	0.27%	0.60%	0.41%	0.40%
Bad Debt	0.20%	0.02%	0.04%	0.08%	0.02%	0.02%
Sales, General, Admin & Misc.	6.87%	8.92%	10.10%	8.50%	7.54%	7.56%
EBITDA	17.80%	15.88%	15.91%	14.56%	13.09%	13.40%
Amortization Depreciation Depletion	2.92%	3.57%	1.15%	2.49%	2.10%	2.04%
Operating Expenses	24.22%	26.75%	24.99%	25.89%	24.62%	24.29%
Operating Income	14.88%	12.31%	14.76%	12.07%	10.99%	11.36%
Interest Income	0.02%	0.00%	0.06%	0.02%	0.01%	0.01%
Interest Expense	0.92%	1.54%	0.18%	0.72%	0.24%	0.23%
Other Income	0.38%	0.32%	0.41%	0.42%	0.28%	0.28%
Pre-Tax Net Profit	14.36%	11.09%	15.05%	11.79%	11.04%	11.42%
Income Tax	4.88%	3.77%	5.11%	4.01%	3.75%	3.88%
After Tax Net Profit	9.48%	7.32%	9.94%	7.78%	7.29%	7.54%
Discretionary Owner Earnings	14.29%	13.30%	13.70%	12.31%	11.94%	12.08%

Table 7: Compiled Income Statement by % for 41 Pasta Manufacturers from 2010 to 2015
Source: Bizminer.com

Balance Sheet - dollar-based						
Assets	**2010**	**2011**	**2012**	**2013**	**2014**	**2015q2**
Cash	518,374	462,362	524,250	533,266	419,651	439,374
Receivables	679,393	605,030	673,118	697,609	684,410	718,073
Inventory	399,358	425,958	477,217	466,003	475,641	499,517
Other Current Assets	145,419	37,323	64,332	108,770	42,617	45,495
Total Current Assets	1,742,544	1,530,673	1,738,917	1,805,648	1,622,319	1,702,459
Gross Fixed Assets	2,898,744	2,885,178	3,152,481	3,301,983	2,249,993	2,377,800
Accum. Depreciation-Amortization-Depltn.	1,213,428	1,207,749	1,319,643	1,382,225	941,858	995,358
Net Fixed Assets	1,685,316	1,677,429	1,832,838	1,919,757	1,308,136	1,382,442
Other Non-Current Assets	499,445	866,965	781,966	726,530	932,280	977,453
Total Assets	3,927,305	4,075,067	4,353,721	4,451,935	3,862,735	4,062,354
Liabilities						
Accounts Payable	377,770	496,162	446,472	461,098	434,359	435,960
Loans/Notes Payable	133,610	165,221	157,137	156,840	172,303	174,765
Other Current Liabilities	147,150	299,567	223,611	266,754	225,896	229,701
Total Current Liabilities	658,529	960,950	827,220	884,693	832,558	840,426
Total Long Term Liabilities	998,684	1,176,485	1,201,757	1,221,762	1,110,712	1,153,468
Total Liabilities	1,657,214	2,137,435	2,028,977	2,106,454	1,943,270	1,993,894
Net Worth	2,270,091	1,937,632	2,324,744	2,345,481	1,919,465	2,068,460
Total Liabilities & Net Worth	3,927,305	4,075,067	4,353,721	4,451,935	3,862,735	4,062,354

Table 8: Compiled Balance Sheet in $ for 41 Pasta Manufacturers from 2010 to 2015
Source: Bizminer.com

Balance Sheet - percentage-based						
Assets	**2010**	**2011**	**2012**	**2013**	**2014**	**2015q2**
Cash	13.20%	11.35%	12.04%	11.98%	10.86%	10.82%
Receivables	17.30%	14.85%	15.46%	15.67%	17.72%	17.68%
Inventory	10.17%	10.45%	10.96%	10.47%	12.31%	12.30%
Other Current Assets	3.70%	0.92%	1.48%	2.44%	1.10%	1.12%
Total Current Assets	44.37%	37.56%	39.94%	40.56%	42.00%	41.91%
Gross Fixed Assets	73.81%	70.80%	72.41%	74.17%	58.25%	58.53%
Accum. Depreciation-Amortization-Depltn.	30.90%	29.64%	30.31%	31.05%	24.38%	24.50%
Net Fixed Assets	42.91%	41.16%	42.10%	43.12%	33.87%	34.03%
Other Non-Current Assets	12.72%	21.27%	17.96%	16.32%	24.14%	24.06%
Total Assets	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Liabilities						
Accounts Payable	9.62%	12.18%	10.25%	10.36%	11.24%	10.73%
Loans/Notes Payable	3.40%	4.05%	3.61%	3.52%	4.46%	4.30%
Other Current Liabilities	3.75%	7.35%	5.14%	5.99%	5.85%	5.65%
Total Current Liabilities	16.77%	23.58%	19.00%	19.87%	21.55%	20.69%
Total Long Term Liabilities	25.43%	28.87%	27.60%	27.44%	28.75%	28.39%
Total Liabilities	42.20%	52.45%	46.61%	47.32%	50.31%	49.08%
Net Worth	57.80%	47.55%	53.39%	52.68%	49.69%	50.92%
Total Liabilities & Net Worth	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table 9: Compiled Balance Sheet by % for 41 Pasta Manufacturers from 2010 to 2015

Source: Bizminer.com

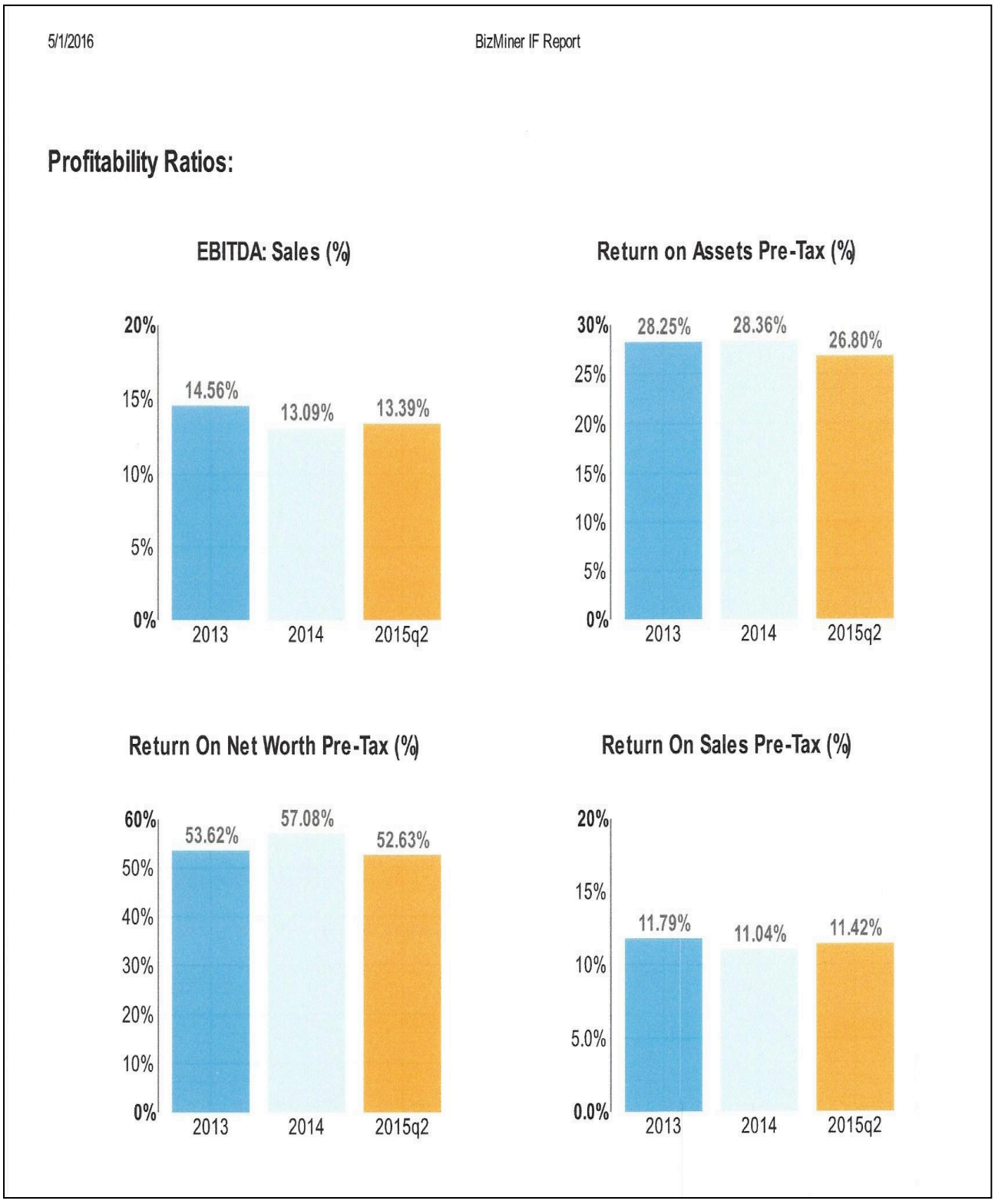

Figure 24: Compiled Profitability Radios by % for 41 Pasta Manufacturers from 2013 to 2015

Source: Bizminer.com

Summary

The Great Falls Region has significant competitive advantages for specialty pasta manufacturers that include close proximity and access to abundant, consistent, high quality grain and pulse crop commodities; access to a variety of cost effective energy sources that include electricity and natural gas; transportation networks in the form of single source service by the nation's second largest railroad, BNSF, and the I-15 Interstate Agri-Business Corridor; abundant water resources from ground and surface water options; and a willing and capable workforce. The Great Falls Region's industrial parks also feature industrial wastewater treatment, fiber optic connectivity, and attractive financial incentives.

Specialty pasta production operations in the Great Falls Region would have the opportunity to obtain high quality wheat, pulse crop, and unique commodities directly from agricultural producers. Grain and pulse crop procurement transportation costs in the Great Falls Region would be low relative to competitors located outside of grain/pulse crop-growing areas. On-farm storage of commodities throughout the Great Falls Region provide year-round access to wheat, and pulse crop commodity deliveries to specialty pasta production facilities.

Sales of specialty pasta products are far outpacing traditional pasta sales. Specialty pasta products have annual sales volume growth rates much greater than the overall retail grocery and food service marketplaces. Particularly, organic, gluten free, non-allergenic, high protein, high fiber, and combined nutrition specialty pasta products have significant sales growth rates. In general, traditional pasta manufacturers have large-scale facilities that do not lend themselves to the flexibility required to produce specialty pasta products. Pasta manufacturers, distributors, and retailers rely upon smaller, flexible manufacturers to supply the wide range of specialty pasta products that today's consumers are seeking.

The combination of cost effective energy; water; available industrial park properties; grain and pulse crop commodities; and skilled human resources all work together to provide a superior business environment for the establishment of profitable specialty pasta manufacturing operations in the Great Falls Region. The Region is ready to provide an optimum environment for specialty pasta manufacturing facilities.

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