DEHY POTATO QUARTERLY

U.S. Dehydrated Potatoes: Sensible Solutions for Food Programming

Volume 5, Edition 1 Winter 2013

As part of the dehy quarterly newsletters, the USPB is featuring a four-part series on the potato that will cover: 1. seed and planting 2. growing, harvesting and storage 3. processing and 4. end uses. The four icons represent each part of the series, and for easy reference the current article's icon is in color. Readers can refer to previous articles by simply looking for the relevant icon on the newsletters. Last issue, we addressed US seed and the US certification program. In this issue, we continue with US seed planting techniques.




US Potato Planting: Getting the US Crop Off to a Good Start

In the United States, potatoes are grown across the country, with regional micro-climates supporting a wide range of potato varieties. Fields for fall production are planted each spring, and harvested in the fall. With optimal climate, soil, modern equipment and cultivation technologies, growers in the United States harvest an average of 20 million metric tons of potatoes each year.

To attain the most profitable yields of high quality potatoes, US growers begin with several advantages—among them the US' high quality certified seed and hundreds of potato varieties from which to choose. The many potato varieties developed in the US mean producers can satisfy most consumer needs and end-uses. It also means that a variety can be found to suit many environmental conditions.

Participants in one of the USPB's PVO workshops learn about potato planting first hand from potato grower James Hoff.

When planting seed potatoes, US producers bring a mix of experience and science to the task, employing the latest in technology and research to grow a better quality crop. Universities, industry organizations, and the USDA continue to develop and share the latest ideas on how to achieve this.

One of the factors that can affect production is the physiological age of the tubers when planted. Growers in the US will hold their seed at 4^0C for 6-7 months, ensuring that the seed is at the optimum physiological age to provide high yields.

Soil preparation is another key factor. While potatoes grow well in a wide variety of soils, the ideal soil for growing potatoes is deep, loose and well-drained. Prior to planting a field, the soil is analyzed to determine its fertility and the amount of nitrogen, phosphorus, and other essential plant nutrients it contains. Potatoes are typically grown in a crop rotation, meaning they are planted only once every three or four years on the same land. Crop rotation enhances the soil's fertility, conserves

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This newsletter is published by the United States Potato Board (USPB), a non-profit organization founded by U.S. potato growers in 1971, which represents the U.S.'s 4,000 potato growers.

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Upcoming Holidays & Events

January

1/1	New Year's Day
1/2	Founders' Day (HAITI)
1/3	Revolution Day (BURKINA FASO)
1/4	Martyrs' Day (DRC)
1/6	Epiphany (CHRISTIAN)
1/7	Ethiopian Christmas (ETHIOPIA)
1/9	Victory Day Holiday (CAMBODIA)
	Peace Agreement Day (SOUTH SUDAN)
1/11	Human Trafficking Awareness
1/12	Public Holiday-Anniversary of 2010 Earthquake (HAITI)
	Magal de Touba (SENEGAL)
	Zanzibar Revolutionary Day (TANZANIA)
1/16	Public Holiday-Presidential Inauguration (LIBERIA)
1/16-17	Heroes' Day (DRC)
1/20	Timket (Epiphany) (ETHIOPIA)
	Heroes' Day (GUINEA-BISSAU)
	Armed Forces Day (MALI)
1/21	Martin Luther King Birthday (US)
1/21-29	Tet Holiday (VIETNAM)
1/24	Mawlid Un Nabi (MUSLIM)
1/26	NRM Liberation Day (UGANDA)

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UNITED STATES Potato BOARD

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moisture, reduces weeds, increases organic matter, and reduces crop loss from insects and disease.

Soil temperature and environmental conditions are also monitored. It is important to plant seed in conditions where it can start growing right away. Optimal conditions have been reached when the soil is about 7^0C and is not too hot or too wet. In many of the potato-growing areas of the US, this is typically about two weeks before the last killing frost of the spring.

US producers generally cut seed potatoes into pieces before planting, in contrast to some other countries, where growers prefer to plant whole seed. This is based on US research, which shows that cutting seed stimulates the growth of sprouts on the tuber, enhancing yields. It also helps to make the size of the seed pieces more uniform, resulting in a more uniform stand in the field.

To plant the cut seed, US producers rely on mechanical harvesters, loading seed pieces onto potato planting machines. Plant spacing is determined based on the potato variety. Once fields are planted, producers continue to monitor their fields daily, relying on experience, certified agronomists and highly developed technology to ensure nutrient and moisture levels are ideal.

Participants visit a seed cutting operation during the USPB Dehydrated Potato Workshop.

DID YOU KNOW?

The USPB hosts a workshop for international and US PVO staff members each year to learn about US dehydrated potatoes.

US Seed Potatoes Bringing Strong Yields in Burkina Faso Trials

A second round of seed potato trials in Burkina Faso this past year brought local farmers one step closer to the development of a more sustainable potato agriculture. Not only did the seed trials last year confirm excellent performance for US varieties in the country's climate, but importers have started discussions for commercial purchases of US seed.

Initiated two years ago, the Burkina Faso trials are a USPB joint project conducted with Africare. The project promotes small-scale potato production in Burkina Faso to strengthen food security in the region. To identify which varieties might work in the country's climate, the USPB tested seven varieties during two years of trial-farm demonstrations. The implementation of these trials was preceded by USPB training for farmers to improve knowledge of optimum seed planting and growing techniques and varieties. Trials confirmed that US seed potato varieties yielded an average 31-35 tons/ha, compared with Burkina Faso's national average of 25 tons/ha.

USPB-Africare's seed potato trials in Burkina Faso have set the stage to expand the country's potato production.

IPHD Agriculture Project Supports Transition and Sustainability

Like growers in Burkina Faso, local farmers in the Republic of Congo, also referred to as Congo-Brazzaville, are also expanding their knowledge of US seed potato opportunities—thanks to a program by the International Partnership for Human Development (IPHD) that combines school feeding with agricultural support. One of the most unique parts of the program is the tremendous support provided by the country's Ministry of Education.

Not only is the government matching the FFE school feeding program with plans in place to transition to complete government support, but it has granted IPHD land to develop agriculture, with the goal of replacing the school food basket with locally-produced foods over time. Potatoes are among the crops being grown on the land.

"There is great potential for potatoes in the Congo," commented IPHD's Rachel Onuska after an evaluation of the market. IPHD hopes to get potato agriculture off the ground while the FFE distributions offer an opportunity to increase the familiarity, value, and consumption of potatoes.

While there is much to do, IPHD Country Director Cristian Balan concurred, "We will be working to put all the pieces together to make a success of the program and of potatoes in Congo."

Madame Kama, Minister of Education, Republic of the Congo (Brazzaville), discussed the government's commitment to sustainability during an IPHD training session.

The USPB was able to provide assistance and training with the agricultural aspect of the program as well, supporting a technical seed potato consultant to travel to the Congo this past June to provide guidance in potato planting. The consultant found that the initial shipment of seed potatoes to the Congo experienced difficulties due to improper storage and handling during transit. The consultant was able to trouble-shoot and provide guidelines to aid with future shipments.

Dehy Training Enhances School Feeding in the Republic of Congo (Brazzaville)

The USPB recently partnered with the International Partnership for Human Development (IPHD) to conduct in-country product training in the Republic of Congo (Brazzaville) on the usage of the US dehydrated potatoes in a Food for Education (FFE) program. On-site training is one of many services offered by USPB to help PVOs extend their resources and get the most out of US dehy potatoes.

The IPHD project involves direct support of schools through the USDA's FFE, as well as Government of Congo (Brazzaville) support for additional schools at equivalent levels. The IPHD plan allows for the transition from USDA-funded FFE to GOC-funded school feeding, and includes agricultural elements to support sustainability **(see IPHD Agriculture Project Supports Transition and Sustainability on page 2).**

For the school feeding, IPHD is distributing a food basket that includes rice, beans, dehydrated potato flakes, sugar, tomato paste, and iodized salt. While potatoes have been grown and consumed in Congo in the past, potatoes may be less common in some parts of the country. To make sure that beneficiaries were able to completely integrate dehydrated potatoes into their local food culture, the USPB and IPHD conducted education for trainers who could in turn provide training for school personnel on the use of potato flakes with the rest of the food basket. Training included information on potato agriculture, potato nutrition, recipes, and the integration of dehydrated potatoes into the food basket to complement the nutritional value.

Basic recipes were developed to offer dehy-based dishes twice per week, including a mashed potato dish with bean sauce and sweetened dehy porridge with rice. Several beignet recipes were developed, such as basic beignets that could be served with bean sauce and beignets combined with mashed beans or sugar from the school feeding food basket.

Prior to initiating training, USPB developed training materials in collaboration with IPHD, which were translated into French. The training itself included interactive discussion and opportunities to demonstrate the newly gained knowledge about dehydrated potato flakes, including proper storage and handling, preparation, and nutrition. Teams were formed and participants were able to practice training, followed by constructive critique.

During a hands-on kitchen activity, participants were provided with recipes and tables to determine the weight of each of the food basket items for numbers of students, ranging from one to 500. Trainers were asked to calculate the volume amounts required to produce a meal for three or five students. Each team produced meals; taste tests were completed by all participants to trouble-shoot and discuss other recipe options. Evaluations of the training showed that the participants were pleased with their new knowledge and excited about spreading the word to assure that the dehydrated potato flakes will be optimally stored and used in the school feeding programs.

For more information on training and other services provided by the US Potato Board, contact T.K. Kuwahara, International Marketing Manager, Dehydrated Potaotes at 303-873-2316 or teresak@uspotatoes.com.

DID YOU KNOW?

Potatoes produce more calories per liter of water than any other major crop, an incredible 5.6 calories per liter, compared to 3.8 calories for maize and 2.0 calories for rice.

USPB training for IPHD's Congo program is helping to optimize usage of the US dehydrated potatoes in their school feeding program.

Upcoming Holidays & Events

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February

2/3	Heroes' Day (MOZAMBIQUE)
2/4-5	Eid-e-Milad-un Nabi (MUSLIM)
2/5	Kashmir Day (PAKISTAN)
2/7	Meaka Bochea Day (CAMBODIA)
2/11	Youth Day (CAMEROON)
	Armed Forces Day (LIBERIA)
2/12	Red Hand Day (UN)
2/13	Ash Wednesday (CHRISTIAN)
2/15	Post African Cup of Nations Recovery (COTE D'IVOIRE)
2/18	President's Day (US)
2/20-21	Carnival (HAITI)
2/21	Shahid Dibosh (BANGLADESH)

March

3/2	Adwa Victory Day (ETHIOPIA)
3/6	Independence Day (GHANA)
3/8	International Women's Day
3/12	Youth Day (ZAMBIA)
3/14	National Decoration Day (LIBERIA)
3/15	Joseph Jenkins Roberts' Birthday (LIBERIA)
3/17	Sheikh Mujibur Rahman's Birthday (BANGLADESH)
3/22	World Water Day (UN)
3/24	World Tuberculosis Day (WHO)
	Palm Sunday (CHRISTIAN)
3/26	Independence Day (BANGLADESH)
	Martyrs' Day/Democracy Day (MALI)
3/26-31	Passover (JEWISH))
3/29	Good Friday (CHRISTIAN)
	Martyrs' Day (MADAGASCAR)
	Barthelemy Boganda Day (CAR)
3/31	Easter Sunday (CHRISTIAN)

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Sneak Peek...coming in the next edition of *Dehy Potato Quarterly*

SERIES: LIFECYCLE OF A US POTATO FROM SEED TO CONSUMER CONTINUES

COUNTERPART INTERNATIONAL PROGRAMS FORTIFIED DEHY GRANULES IN CAMEROON FFE

FIELD RECIPE: DEHY BARLEY MEDLEY

US POTATO BOARD RESOURCES

Potato consumer website featuring nutrition information, recipes, and more
www.potatogoodness.com

US Potato Board marketing resources featuring partnering and other services provided by the U.S. Potato Board for international food programming
www.potatoesusa.com

Find us on Facebook:
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COOKING CREATIVELY WITH DEHY — FIELD RECIPE

POTATO POCKETS

This dish offers a nutrient-dense solid food for feeding that includes a filling of any protein and vegetable sources available to the school. It takes full advantage of the seasonal school garden choices to improve dietary diversity.

MEASURE	WEIGHT	INGREDIENT
2 cups	440 g	Hot water
½ cup	100 g	Dehydrated potato granules*
½ cup	70 g	Wheat flour
1 whole	50 g	Egg
½ cup	110 g	Lentils, cooked
½ cup	100 g	Oil (for frying)
½ cup	112 g	Meat (beef, sliced)
½ cup	100 g	Red pepper
½ cup	100 g	Corn/Maize
2 cloves	5 g	Garlic, chopped
1 tsp	5 g	Salt
1 tsp	4 g	Black pepper, ground
1 tsp	4 g	Curry powder

*Granules may be substituted with 1-1/2 cups (90g) of dehydrated potato flakes.

1. Mix hot water, dehydrated potato granules, wheat flour, egg, and lentils together and shape into a thick roll and set aside.
2. Stir fry beef, red peppers, corn, and garlic in oil. Add salt, pepper, and curry powder and empty into a bowl.
3. Flatten entire potato mixture on a hard surface, and place beef mixture over potato mixture.
4. Close together, using the potato mixture to form a "pocket" or "shell" around the beef mixture.
5. Fry potato pocket on both sides until golden brown.
6. Slice into pieces and serve hot.

VARIATIONS: These dehy potato pockets can be made with or without the legumes (if not available). They can be stuffed with any combination of meats, legumes, millet, vegetables, or any savory foods available.

Serves 8
Serving Size: 3/4 cup
Equipment needed: Bowl, spoon, frying pan, spatula

Nutrition: (per serving)

Calories 168.41	Vitamin C (mg) 23	Potassium (mg) 578
Protein (g) 0.35	Folate (mg) 0.022	Zinc (mg) 0.83
Vitamin A (IU) 325	Iron (mg) 2.02	