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FEDERAL FACILITIES COUNCIL

# Panel 3: Technology Transfer and Development

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United States Department of Agriculture

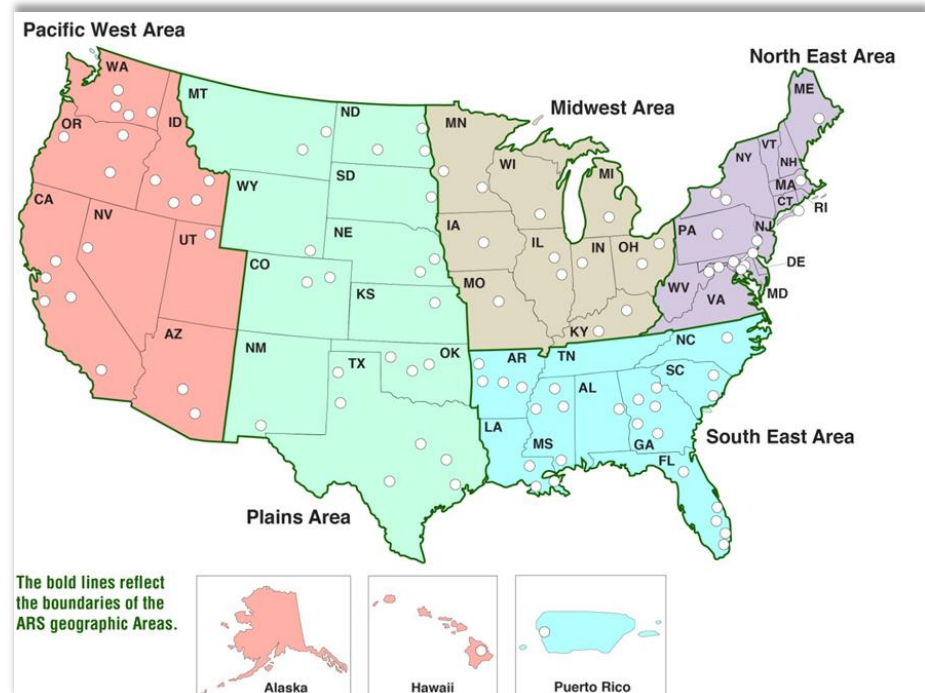
**Agricultural Research Service**

# Licensing Success Stories: the USDA Example

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ARS-USDA  
NSTC TT Panel  
2017 Federal Facility Workshop

# ARS Profile

- 690 research projects, 17 National Programs
- 2,000 scientists & post docs
- 6,000 support employees
- 90 locations throughout US
- ~\$1.1 billion annual budget



# Technology

**Treatment for fresh-cut fruit & vegetables  
that maintain their natural flavor, texture, &  
color for up to 21 days**



**1995** USDA & Mantrose-Haeuser co-develop and co-patent treatment technology under a CRADA





**1999** Patent US 5,939,117: “Methods for preserving fresh fruit and product thereof”

Mantrose-Haeuser exclusively licenses technology & develops NatureSeal<sup>R</sup>


**2004** NatureSeal<sup>R</sup> is used in McDonald's Apple Dippers<sup>TM</sup>

**2015:** McDonald's served 250 million packages of sliced apples, more than 10% of all fresh sliced apples sold in the US

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**packages of apple slices served with kids meals since 2004.**



McDonald's USA restaurants only

# Technology

**Method for vaccinating chickens through  
the injection of eggs**



- 1984** Patent US 4,458,630: “Disease control in avian species by embryonal vaccination”
- 1986** Exclusive license to Embrex  
Embrex awarded USDA-SBIR Phase I
- 1987** Embrex-ARS CRADA signed  
Embrex awarded USDA-SBIR Phase II
- 1992** Embrex introduces commercial produce called ‘Inovojet’ based upon SBIR-CRADA results
- 2006** Pfizer Animal Health acquires Embrex for ~\$155M



**2015:** Inovojet used by nearly all U.S. hatcheries & ~15 billion eggs vaccinated worldwide annually



# Technology

**Gluten & allergy free rice flour for cooking**



- 1984** Patent US 6,224,921: “Rice flour based low oil uptake frying batters”
- 2006** Howard Community College – Technology Assessment Program identifies a new value position- gluten free.
- 2007** CrispTek exclusively licenses technology & develops Choice Batter
- 2009** Choice Batter first sales

# 2012: \$4.7M sales and 95 jobs in 4 states (MD, IA, IL, TX)



**Frying & Baking Mix**

**Nutrition Facts**  
Serving Size 1 Tbsp Dry Mix (10g)  
Servings Per Container about 51\*

Amount Per Serving		% Daily Value*
<b>Calories 35</b>	<b>Calories from Fat 0</b>	
Total Fat 0g		0%
Saturated Fat 0g		0%
Trans Fat 0g		0%
Cholesterol 0mg		0%
Sodium 115mg		8%
Total Carbohydrate 8g		3%
Dietary Fiber 0g		0%
Sugars 1g		
Protein 1g		
Vitamin A 0%	Vitamin C 0%	
Calcium 0%	Iron 0%	

\*Percent Daily Values are based on a diet of other people's secrets. Your daily values may vary depending on your eating habits.

**INGREDIENTS:** RICE FLOUR, SALT, LEAVENING (SODIUM BICARBONATE, SODIUM ACID PYROPHOSPHATE), SPIRIT, CREAM POWDER, GARLIC POWDER, PAPRIKA, CELERY SEEDS, JAMITHAN GUM.

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**Chocolate Chip Cookie Mix**

**Nutrition Facts**  
Serving Size 1 Tbsp package (25g, about 2 Teaspoons)  
Servings Per Container 10

Amount Per Serving		% Daily Value*
<b>Calories 90</b>	<b>Calories from Fat 30</b>	11%
Total Fat 2 1/2g		5%
Saturated Fat 1g		2%
Trans Fat 0g		0%
Cholesterol 0mg		0%
Sodium 35mg		4%
Total Carbohydrate 15g		6%
Dietary Fiber 1g		4%
Sugars 11g		
Protein 1g		
Vitamin A 0%	Iron 0%	
Vitamin C 0%	Calcium 2%	

\*Percent Daily Values are based on a diet of other people's secrets. Your daily values may vary depending on your eating habits.

**INGREDIENTS:** RICE FLOUR, ORGANIC CHOCOLATE ORGANIC CANE SUGAR, ORGANIC COCOA LIQUOR, ORGANIC COCOA BUTTER, ORGANIC VANILLA, SUGAR, BROWN FLOUR, SALT, TAPIOCA STARCH, BAKING POWDER, SODIUM ACID PYROPHOSPHATE, SODIUM BICARBONATE, CORN STARCH, MONOGLYCEROL PHOSPHATE, XANTHAN GUM.

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**Double Chocolate Brownie Mix**

**Nutrition Facts**  
Serving Size 1 1/8 package (25g, about 2 Teaspoons)  
Servings Per Container 10

Amount Per Serving		% Daily Value*
<b>Calories 100</b>	<b>Calories from Fat 16</b>	14%
Total Fat 2 1/2g		5%
Saturated Fat 1g		2%
Trans Fat 0g		0%
Cholesterol 0mg		0%
Sodium 150mg		6%
Total Carbohydrate 21g		7%
Dietary Fiber 1g		4%
Sugars 12g		
Protein 1g		
Vitamin A 0%	Iron 0%	
Vitamin C 0%	Calcium 4%	

\*Percent Daily Values are based on a diet of other people's secrets. Your daily values may vary depending on your eating habits.

**INGREDIENTS:** RICE FLOUR, SUGAR, ORGANIC COCOA LIQUOR, ORGANIC COCOA BUTTER, ORGANIC VANILLA, BROWN SUGAR, COCOA POWDER, PAPRIKA, STARCH, BAKING POWDER, SODIUM ACID PYROPHOSPHATE, SODIUM BICARBONATE, CORN STARCH, MONOGLYCEROL PHOSPHATE, XANTHAN GUM.

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**Lemon Poppyseed Muffin Mix**

**Nutrition Facts**  
Serving Size 1 1/4 package (28g, about 3 Teaspoons)  
Servings Per Container 14

Amount Per Serving		% Daily Value*
<b>Calories 120</b>	<b>Calories from Fat 0</b>	14%
Total Fat 0g		0%
Saturated Fat 0g		0%
Trans Fat 0g		0%
Cholesterol 0mg		0%
Sodium 105mg		4%
Total Carbohydrate 30g		10%
Dietary Fiber 1g		4%
Sugars 12g		
Protein 1g		
Vitamin A 0%	Iron 0%	
Vitamin C 25%	Calcium 0%	

\*Percent Daily Values are based on a diet of other people's secrets. Your daily values may vary depending on your eating habits.

**INGREDIENTS:** RICE FLOUR, SUGAR, POTATO STARCH, BAKING POWDER (SODIUM ACID PYROPHOSPHATE, SODIUM BICARBONATE), CORN STARCH, MONOGLYCEROL PHOSPHATE, XANTHAN GUM, LEMON OIL, LEMON JUICE, SALT.

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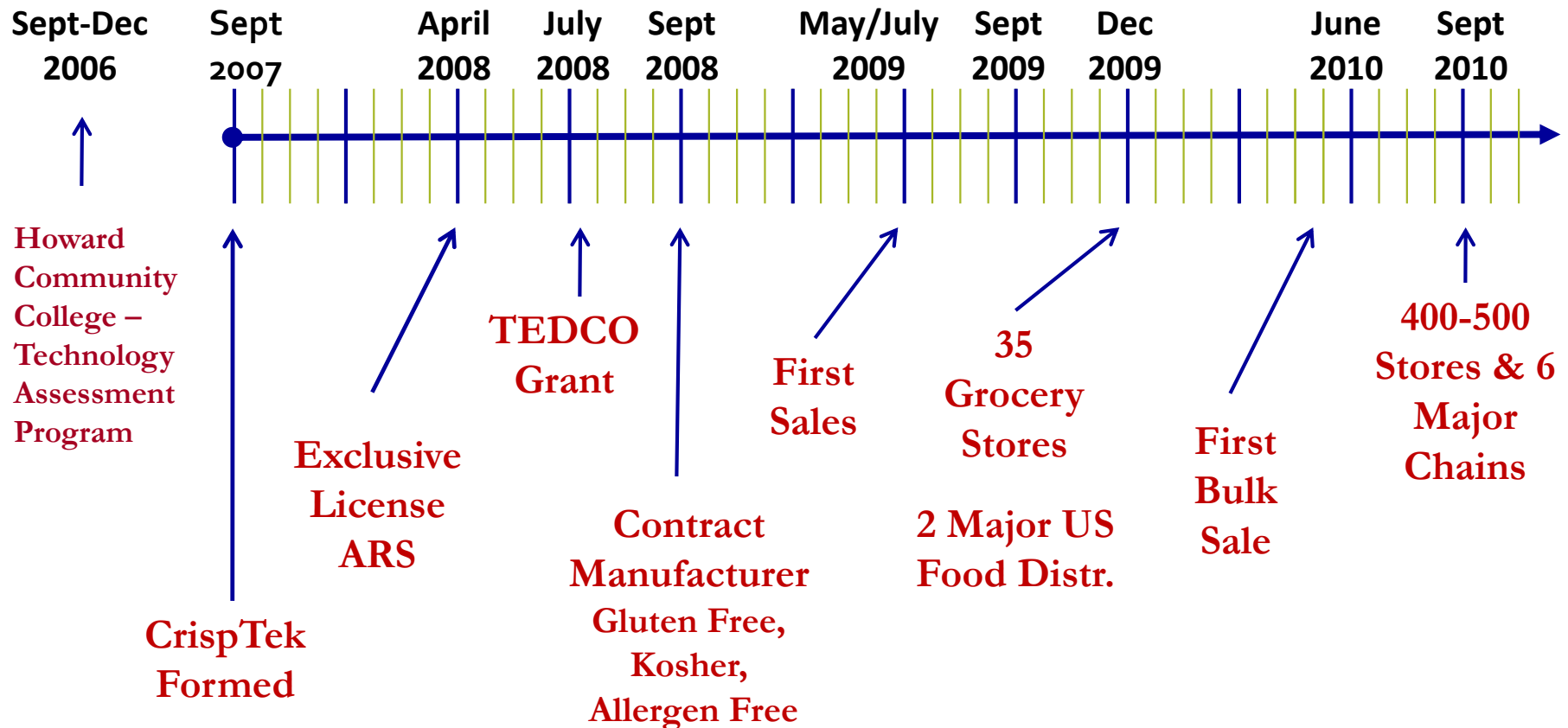


products are blended and packaged in a facility free of gluten and the eight common allergens that include:



Egg, Dairy, Peanuts, Tree Nuts, Fish, Shellfish, Wheat, and Soy. Our Choice Batter products are also free of MSG, Cholesterol, Artificial Colors, Flavors and Preservatives.\*

**2012: \$4.7M sales, 95 jobs in 4 states  
(MD, IA, IL, TX)**



# Thank you for your kind attention...

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