

PROTEIN

Consumer Trends, Delivery and Sustainability

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Campbell Soup Company

Transformation of protein



PROTEIN!

Kellogg's Special K - more than a flake or a puff - a wonderfully delicious new way to get your protein

When living mother's' stored body tissue begins breaking, the protein stored in the Special K cereals, that's becoming clear. Special K is a high-protein cereal, that's what makes it so special. Right here in this advertisement it says that Special K was invented by a certain scientist named Dr. Kellogg, who was in a search for the best flour - for a most nutritious protein cereal called "Special".

Nothing but the finest that Special K will give you, but more high quality protein than any other leading cereal - that or milk.

All this protein a lot to eat. Research shows Special K cereal is easy for your body to be digested. It may take time for your body to be built to what they have the world's finest protein they need. Special K is delicious, too.

Look for the package with the big "K" on the front and of the protein cereal.

Kellogg's is a leading cereal.

ALLERGEN INFORMATION: Kellogg's Special K cereal contains wheat and whole grain flour. May contain traces of soy, egg and milk.

The food developer for the right the special and the convenience of Special K will work to give you the best, a delicious cereal to produce the best quality, nutrition and healthy living.

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Mr. Breakfast

Special K Cereal |
MrBreakfast.com

1959 Special K Cereal Advertisement

GOOD SOURCE OF PROTEIN
for those CALORIES

19g WOURISHING CALORIES
WHOLE GRAIN
FIBRE
GLUTEN FREE
FULLY ADDED

Special K Protein
Satisfies Hunger

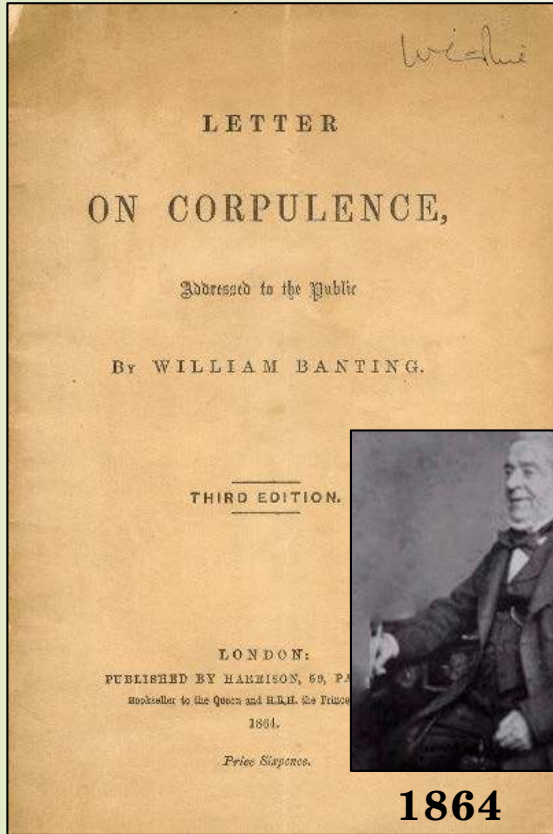
Cinnamon Brown Sugar Crunch
Naturally & Artificially Flavored
Wheat, Soy & Pea Cereal

11g PROTEIN

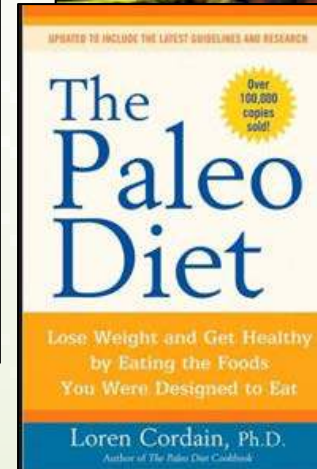
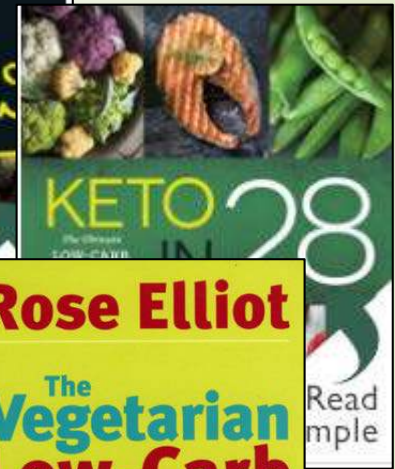
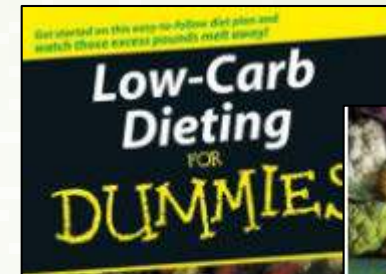
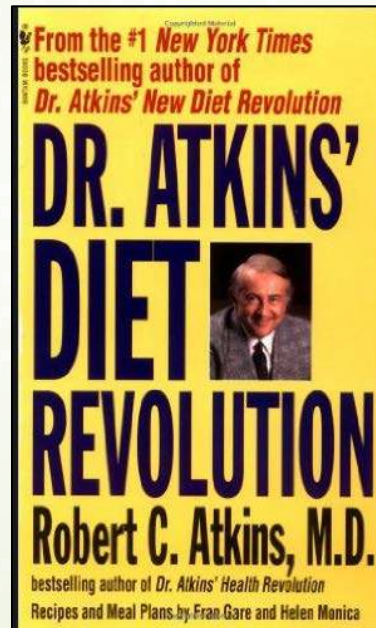
Walmart

Kellogg's Special K Fruit & Yogurt Cereal, 19.1 oz

Protein and the low-carbohydrate diet



- No starch, sugar, beer or potatoes
- Only meat, fish, vegetables and wine



Current consumer trends

10 Key Trends in Food, Nutrition & Health 2017

Published by
NewNutrition
Business



6

- Wide range of sources used to define enduring trends in the marketplace
- **PROTEIN**: Number 6
- Natural sources preferred
- An ingredient that's also a benefit
 - Health Halo – range of beliefs from providing energy, recovery, to firmer body, weight loss and healthier skin and hair

Protein trends overlaps with other trends

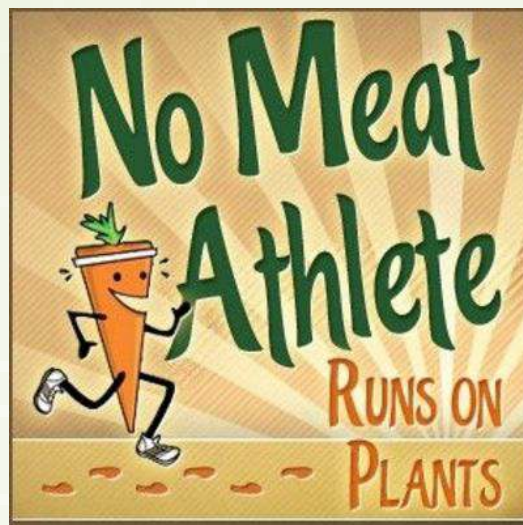
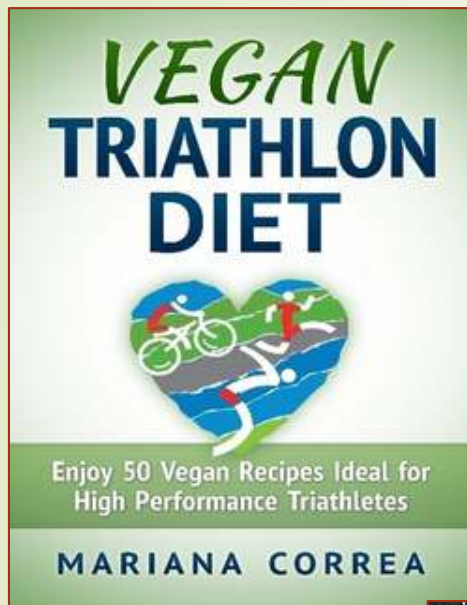
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➔ Not sufficient to focus on one trend in isolation

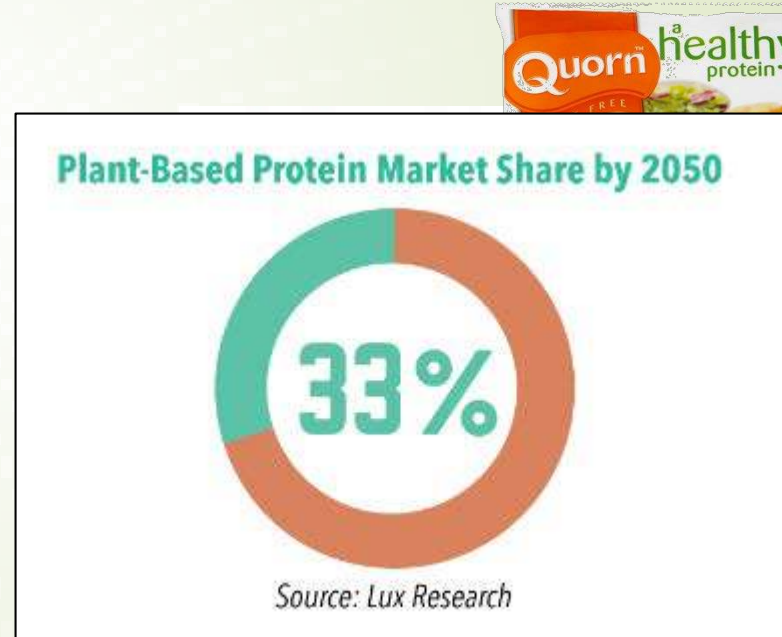
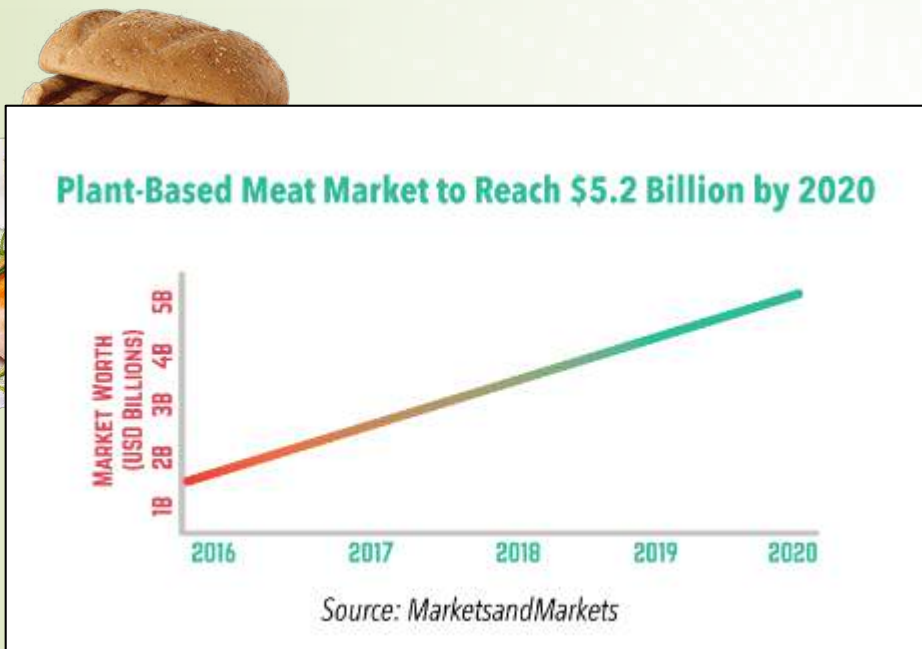


The vegetarian athlete



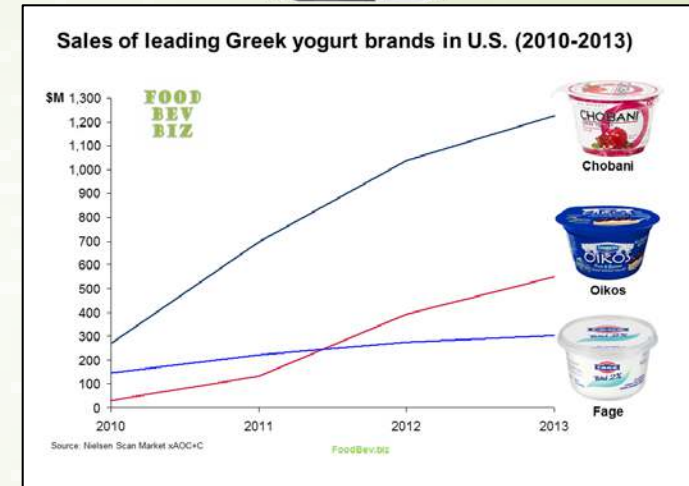
Consumer trends – Meats

- Desire for natural sources of protein from dairy, meat and fish is still strong
 - Meat consumption ↑ 5% in 2015 (U.S.)
 - Vegetable protein also increasing but meat predominates



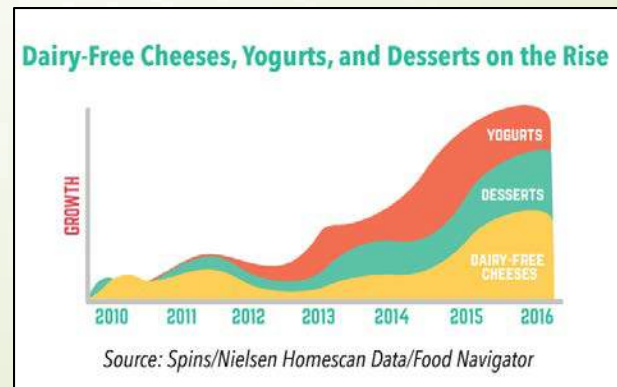
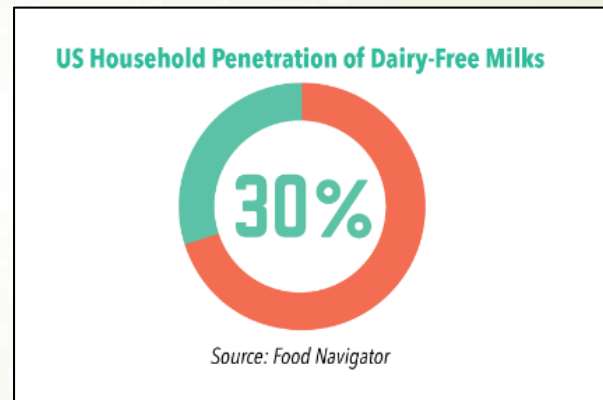
Consumer trends – Snacks

- Strong growth in jerky, yogurts and cheese snacks
 - Eg. P3 (Kraft Foods) ↑ 60% to \$101M in 2016
- Added protein to foods (cereal, bread and snack bars) more accepted in the U.S. than other countries
- Snack legumes – plant-based and protein trends



Consumer trends – Dairy & Alternatives

- Dairy sources predominate
- Younger consumers concerned with digestive problems avoiding dairy



Formulation challenges for protein

➤ Snacks, bars, bakery

➤ Water binding – hydration of the protein

- Water binding of fiber
- Hardening over time

➤ Flavor – whey cleanest flavor – often used in bars

- bread – blend of protein – wheat, whey and soy
- add gluten

➤ Beverages

➤ Can be gritty and astringent

➤ Viscosity can mask

➤ Heat stability can be problematic

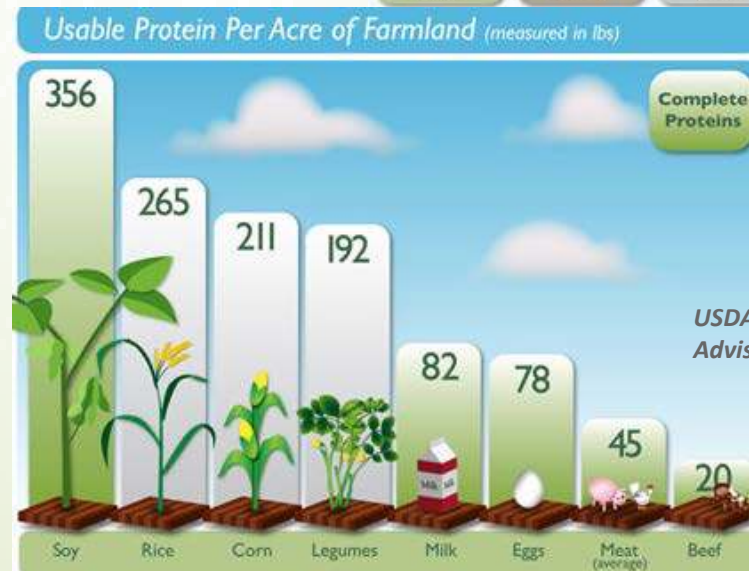
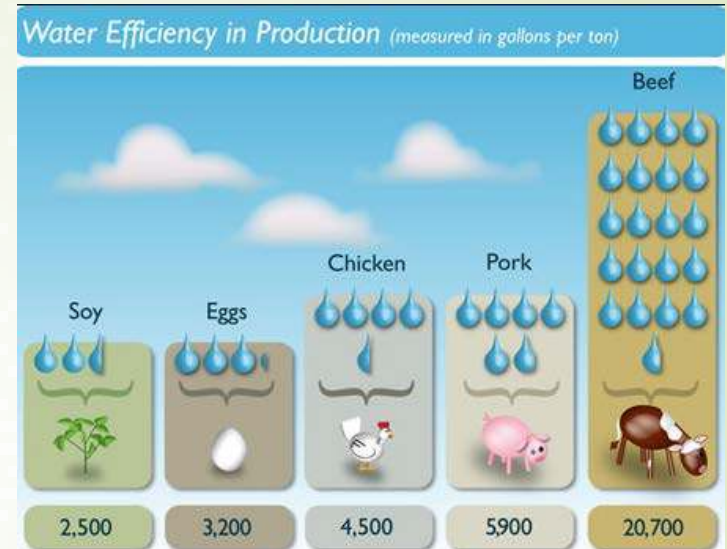
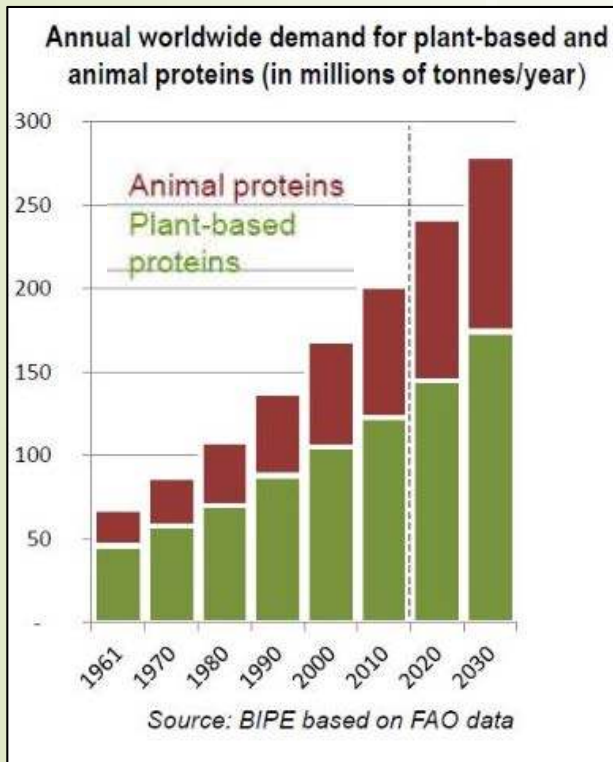
➤ Higher-dose, more off notes

- Higher whey content – cardboard note (aldehydes); foaming

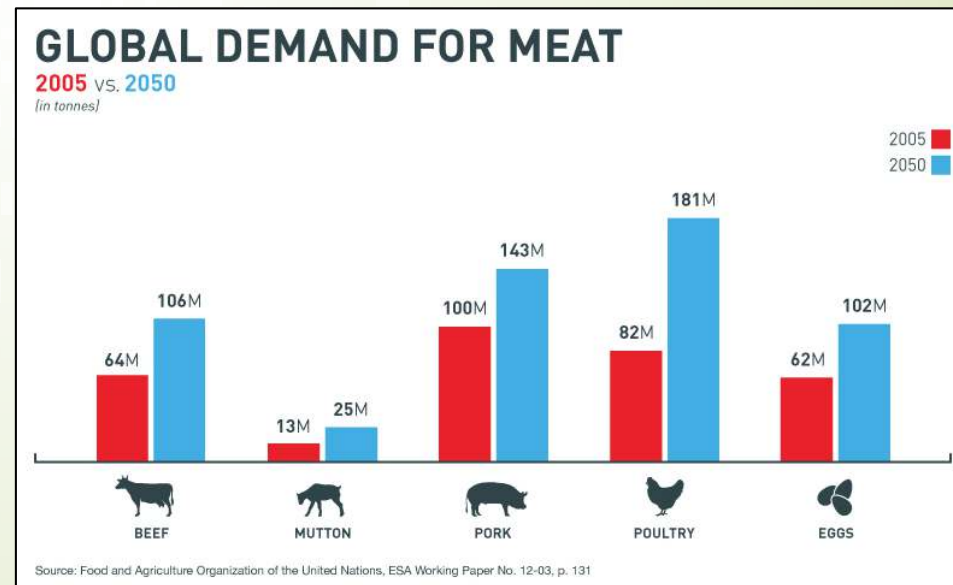
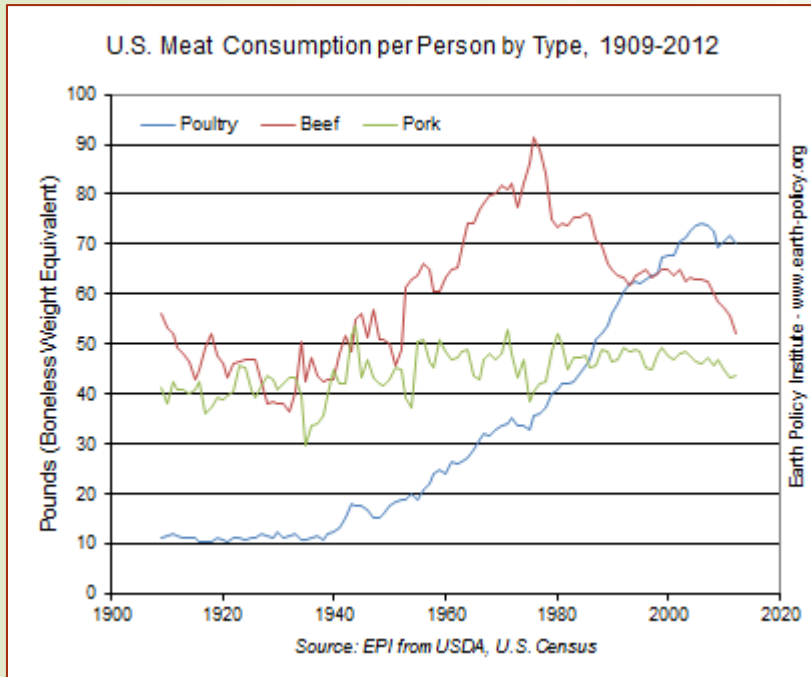


Sustainability

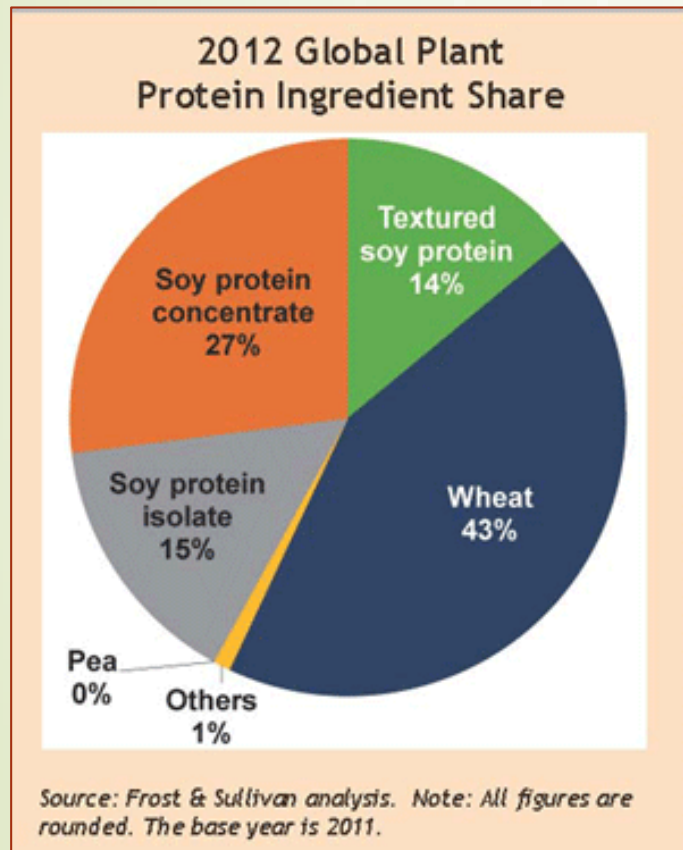
- Protein sources for sustaining human populations – animal vs plant



Animal sources – poultry vs beef




Plant sources – soy predominates




- Soy and wheat top the global market
- Future growth from diversified sources?

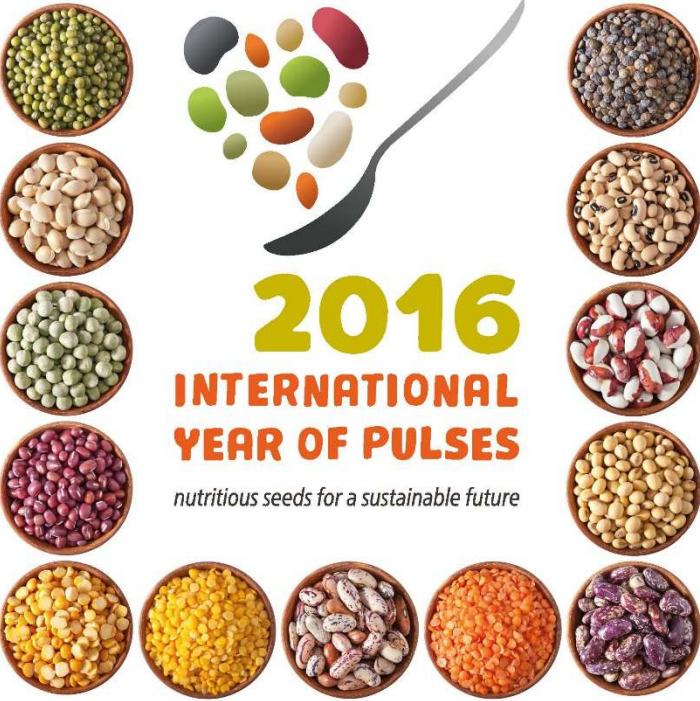
Pulses – a sustainable solution?




Food and Agriculture Organization of the United Nations

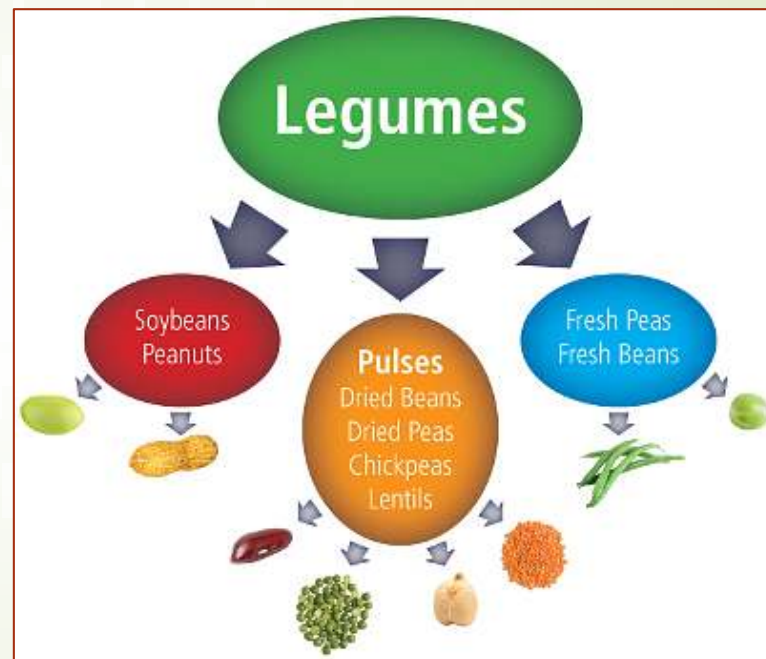


2016
INTERNATIONAL YEAR OF PULSES
nutritious seeds for a sustainable future



 **#IYP2016**
fao.org/pulses-2016

SI07 09/14 BC2009/1/12.15



Pulse s – a sta p l e i n t r a d i t i o n a l c u i s i n e s

- A sta p l e i n h u m a n n u t r i t i o n f o r t h o u s a n d s o f y e a r s
 - e s p e c i a l l y i n I n d i a , P a k i s t a n , t h e M e d i t e r r a n e a n a r e a a n d t h e N e a r E a s t



- P r o v i d e a n a f f o r d a b l e s o u r c e o f p r o t e i n , e s s e n t i a l m i c r o n u t r i e n t s a n d B v i t a m i n s
 - T h e p r o t e i n c o n t e n t i s e n h a n c e d w h e n p u l s e s a r e p a i r e d w i t h g r a i n s (c o m p l e m e n t a r y p r o t e i n) .



Slow growth in global production of pulses

- ▶ 42 mt 1980 → 70 mt in 2013
- ▶ Per capita consumption declined
 - ▶ slow rise in recent years
- ▶ Developing countries – 80% as food
- ▶ Developed countries – 40% as food
- ▶ Acceleration in coming years?

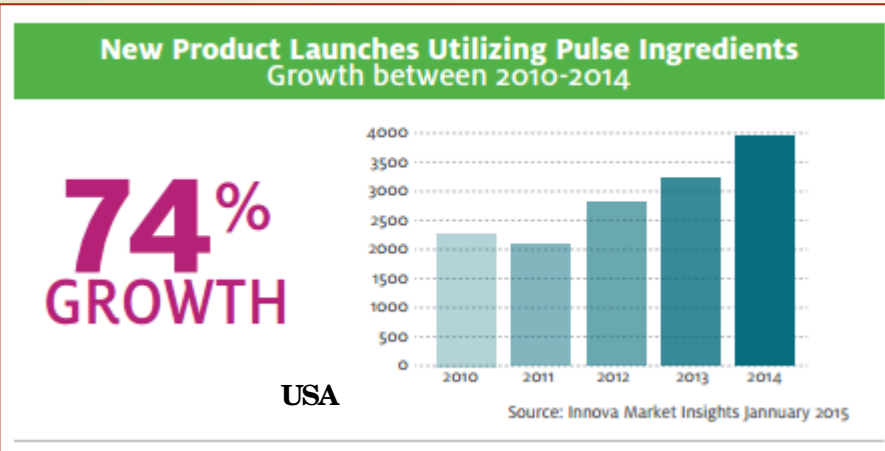
Pulse s are affordable and versatile



	Chickpeas (1 cup)	Ground Beef (80% lean) – ¼ lb
Cost*	\$ 0.46	\$1.44
Calories	269	287
Protein (g)	14.5	19.4
Fat (g)	4	22.6

*US average 2015

Pulse s in d e v e l o p e d m a r k e t s



HEALTH NEWS | Wed Jan 18, 2017 | 2:14pm EST

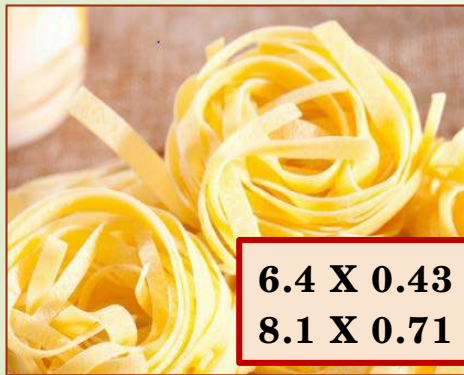
France's Roquette bets on pea protein with Canadian factory

SPECIAL EDITION: PROTEIN-RICH FOODS: THE NEXT GENERATION

US pea protein market 'ready to explode'

Grains + pulses to enhance protein content

- ➔ Incorporating pulses into cereal-based foods like bread and pasta improves the nutritional profile



Pulse Canada 

$$6.4 \times 0.43 = 2.75 \text{ g} = 5.6\% \text{ DV}$$

$$8.1 \times 0.71 = 5.75 \text{ g} = 11.5\% \text{ DV}$$

	Ile	Lys	Met	Trp
Legumes				
Grains				
Together				

Table 2	Traditional Pasta 100% DURUM Wheat Flour	Reformulated Pasta 25:75 Lentil/Durum Wheat Flour Blend
Protein Content of Pasta (%)	11.7	14.7
PDCAAS of Pasta	0.43	0.71
Reference Amount for Pasta (g)	55	55
Protein per Reference Amount (g)	6.4	8.1
Daily Value for Protein (g)	50	50
% DRV	5.6	11.5
Protein Claim Permitted	N/A	Good Source of Protein

$$\% \text{DRV} = \frac{\text{Protein in reference food amount (grams)} \times \text{PDCAAS}}{\text{Daily Value for Protein (grams)}}$$

% DRV 10.0 to 19.9% "Good Source of Protein"

% DRV >20.0% "Excellent Source of Protein"

Conclusion

- Protein is a strong market trend
- Increasing global demand for protein
- Sustainability a key element in meeting demand
- Future solutions
 - Globally sustainable agricultural efforts
 - Innovation targeted to local consumer demands