



World Soybean Research Conference
Durban, South Africa
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WHO WE ARE



- We represent and market the U.S. soy family internationally on behalf of U.S. Soybean growers.
- We are a dynamic partnership of key stakeholders from throughout the U.S. soy family -- the ASA (American Soybean Association) and United Soybean Board (USB)
- Founding members ASA and the USB play key roles
 - ASA develops domestic policy positions and lobbies on behalf of U.S. growers and soy family and is the Cooperator with US-FAS (US Foreign Agricultural Service)
 - USB determines checkoff investment strategy and oversees implementation of national/state programs

FUNDING



We receive funding from a variety of sources, including:

- Soy producer checkoff dollars invested by USB and various state soybean boards
- ASA's investment of cost-share funding provided by the USDA's Foreign Agricultural Service
- Industry dollars and in-kind investments in projects and activities





PRESENCE

ST. LOUIS
AMERICAS

EUROPE/CIS/
TURKEY

NORTH ASIA

MIDDLE EAST/NORTH AFRICA/
ASIA SUBCONTINENT

SOUTHEAST ASIA

**107 TEAM MEMBERS
IN 80 COUNTRIES**

U.S. SOY for a growing world

OUR CHARGE



USSEC's Vision

- U.S. Soy for a Growing World

USSEC's Mission

- Maximize the use of U.S. soy internationally by meeting the needs of our stakeholders and global customers

OUR CHARGE



USSEC's Strategic Goals

1. Increase the volume of U.S. soybean and product exports to 2.2 billion bushels by 2015 from current 2011 benchmark levels (~1.9 billion bushels)
2. Enhance the reputation of the United States as a reliable, sustainable and consistent supplier of quality soybean products
3. Continually improve USSEC as a world class marketing organization

U.S. SOY FOR A GROWING WORLD



- 55-60% of U.S. soybean crops were exported either as soybeans or soybean products from 2009 - 2012
- Experts project exports to grow to over 2/3 by 2020
- Customers choose to do business with the U.S. soy industry because they receive a total quality experience ...

Quality, high performing soy products delivered by the most reliable and consistent soy supply chain in the world

WHAT WE DO



- We **advocate** U.S. positions on topics on current hot-button topics
- We **communicate** the total quality experience of U.S. soy
- We **educate** customers of U.S. soy in modern production practices to improve efficiencies
- We **evaluate** the effectiveness of our own programs
- We **organize** research to prove benefits of U.S. product

CONNECT PROFESSIONALS



USSEC CONNECTS



HUMAN UTILIZATION



- USSEC provides market intelligence to the soy food industry worldwide
- We reach out to market influencers and institutional and food processing buyers to promote food products
- We keep stakeholders informed about the “state of soy”
- We provide technical assistance to soybean processors and users, improving their profitability and efficiency

SOME USSEC HIGHLIGHTS FROM AROUND THE WORLD



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SOUTHEAST ASIA

AASHIRVAAD
ATTA with
MULTIGRAINS

Presenting Aashirvaad Atta with Multigrains.
Loaded with the goodness of wheat and five grains strong.
All with the great taste of Aashirvaad!



MIDDLE EAST/MAGHREB/INDIA



- India has among the highest rates of child malnourishment
- USSEC's Indian office has had ongoing investment into the development and market introduction of Soy Dal analogue - defatted soy flour, whole wheat flour and turmeric powder.
 - Soy fortified Dal provides twice as much protein per kilo at a quarter the price of traditional pulses.
- Multigrain wheat flour fortified with defatted soy flour
 - USSEC has been instrumental in assisting companies, such as ITC, who produces Aashirvaad Multi Grain atta (flour), in adapting their manufacturing processes to accommodate soy flour.

NORTH ASIA



- **Japanese National Natto Competition**
"Red River Valley U.S. Award"
- This week over 250 Natto samples will be evaluated by a Japanese Quality Review Board with the purpose of challenging the industry to improve processing technology and quality of Natto.
- USSEC's Japan office supported the "Red River Valley U.S. Award"

new



Southeast Asia

- Launched “Tempe for the World”
- Collaborated with several NGOs
- Working with 6000 – 8000 tempe producers
- Helping improve Indonesia’s soyfood production, food safety and sustainability.



Jl. Raya Cilendek No 27 Bogor, West Java Province, INDONESIA



U.S. SOY for a growing world

AMERICAS



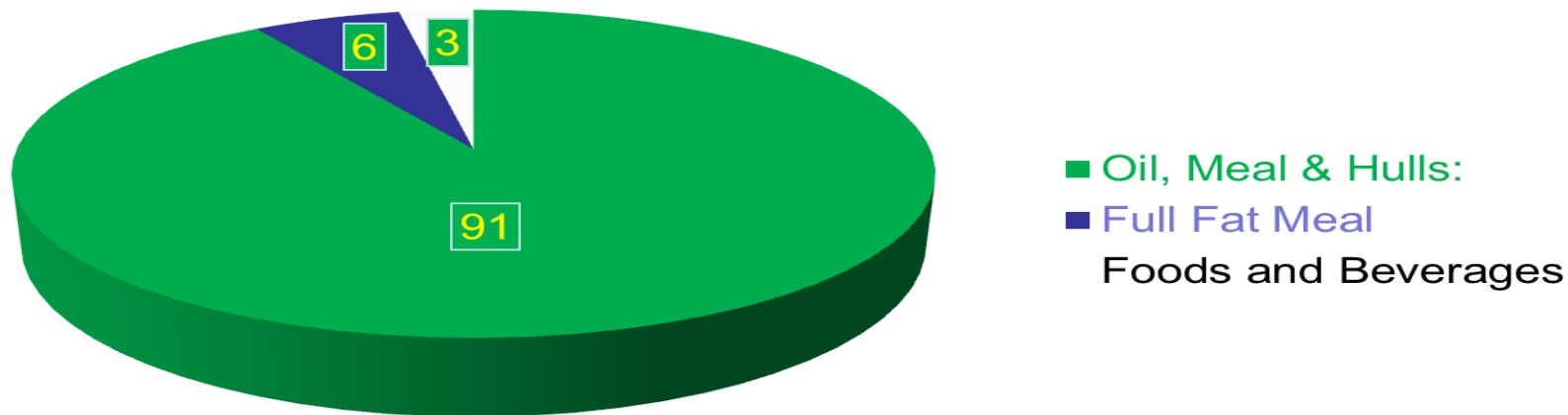
Processing soy foods and soy beverages in oil extraction plants.

**Options for new processing soy foods
Latin America Experiences.**

PROCESSING OF SOYBEAN IN LATIN AMERICA

Meals and oil are the main soybean products in the world and LATAM
Soybean processing plants can be upgraded for diversified soy products

%



Crushing Soybean Extraction Plants produce:
Meal 74 %, Oil 18% Hulls 7% from soybeans

FROM OIL AND MEAL BUSINESS TO NEW SOYBEAN PRODUCTS

Meal and Oil

- High volume Market
- Commodity market for meal
- Commodity market for crude oil
- Similar Product characteristics
- Marketing strategy based on high volume of sales, logistics and time delivery
- price per tons

New Soy Foods & Beverages

- Small, food categories
- Some flours are commodities
- Most branded products
- Brand differentiation
- Marketing strategy based on promotion, advertising of good flavor and healthy attributes.
- Price per package

FROM OIL AND MEAL PRODUCTION TO NEW SOYBEAN PRODUCTS

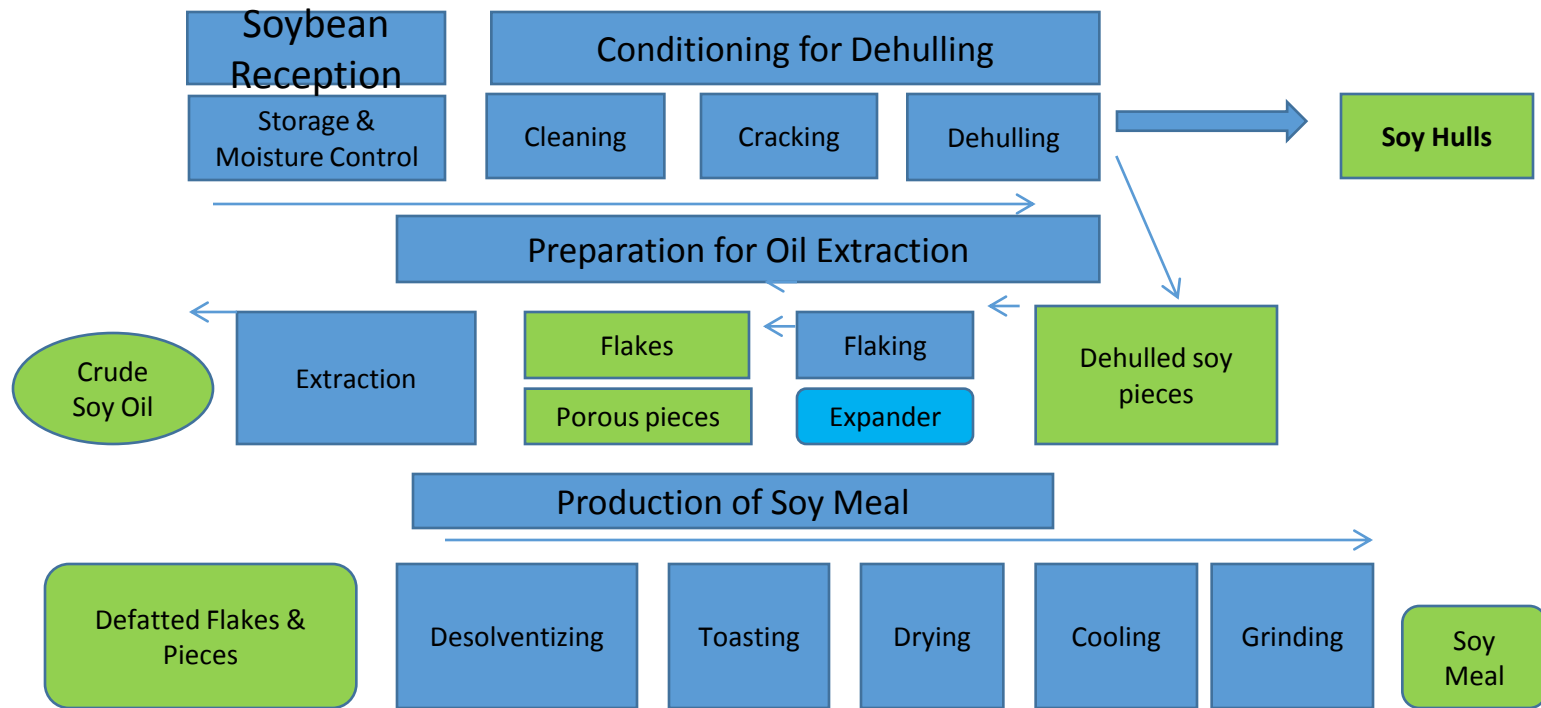
Assets of Meal and Oil Plants

- Plant Assets:
- Management/Production Staff
- Storage, warehouse, steam,
- Electricity, Workshops
- Computer production control
- Transportation, distribution
- Laboratories
- Processing equipment
- Packaging lines for meal & oil

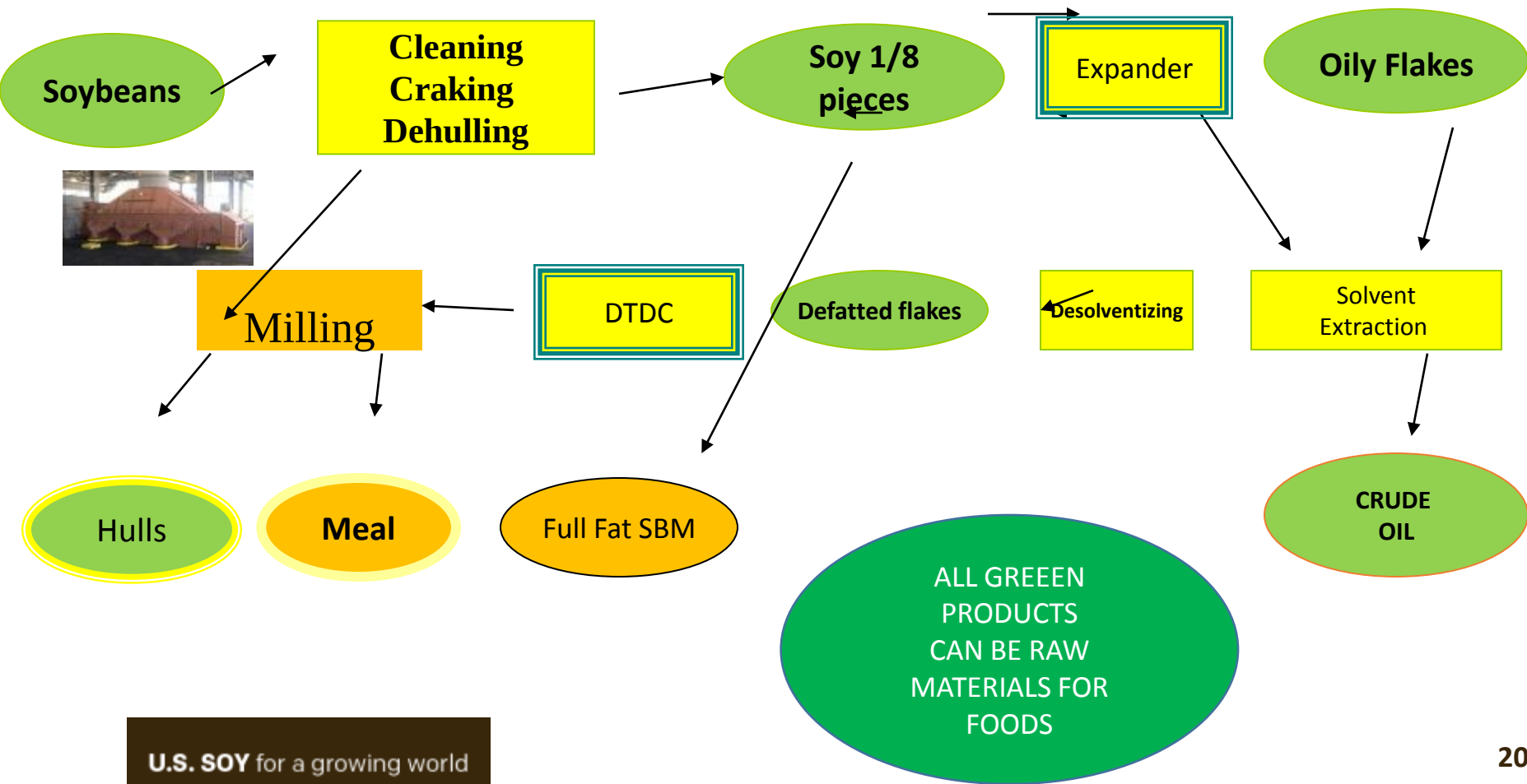
Needs for New Soy Products

- Plant needs:
- =
- =
- =
- =
- =
- More microbiology staff
- Few Equipment additions
- New packaging lines

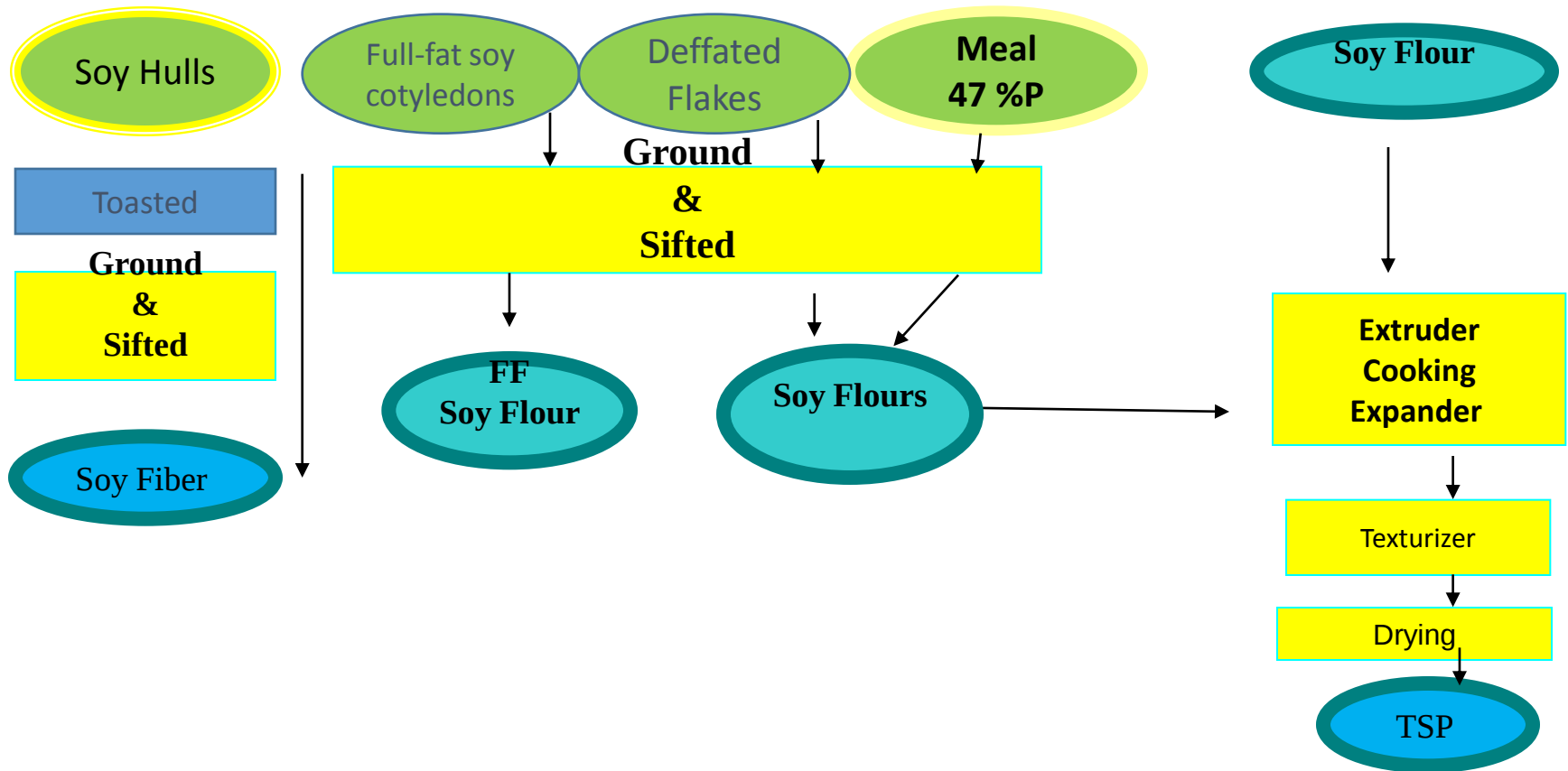
PROCESSING OPERATIONS IN EXTRACTION PLANTS



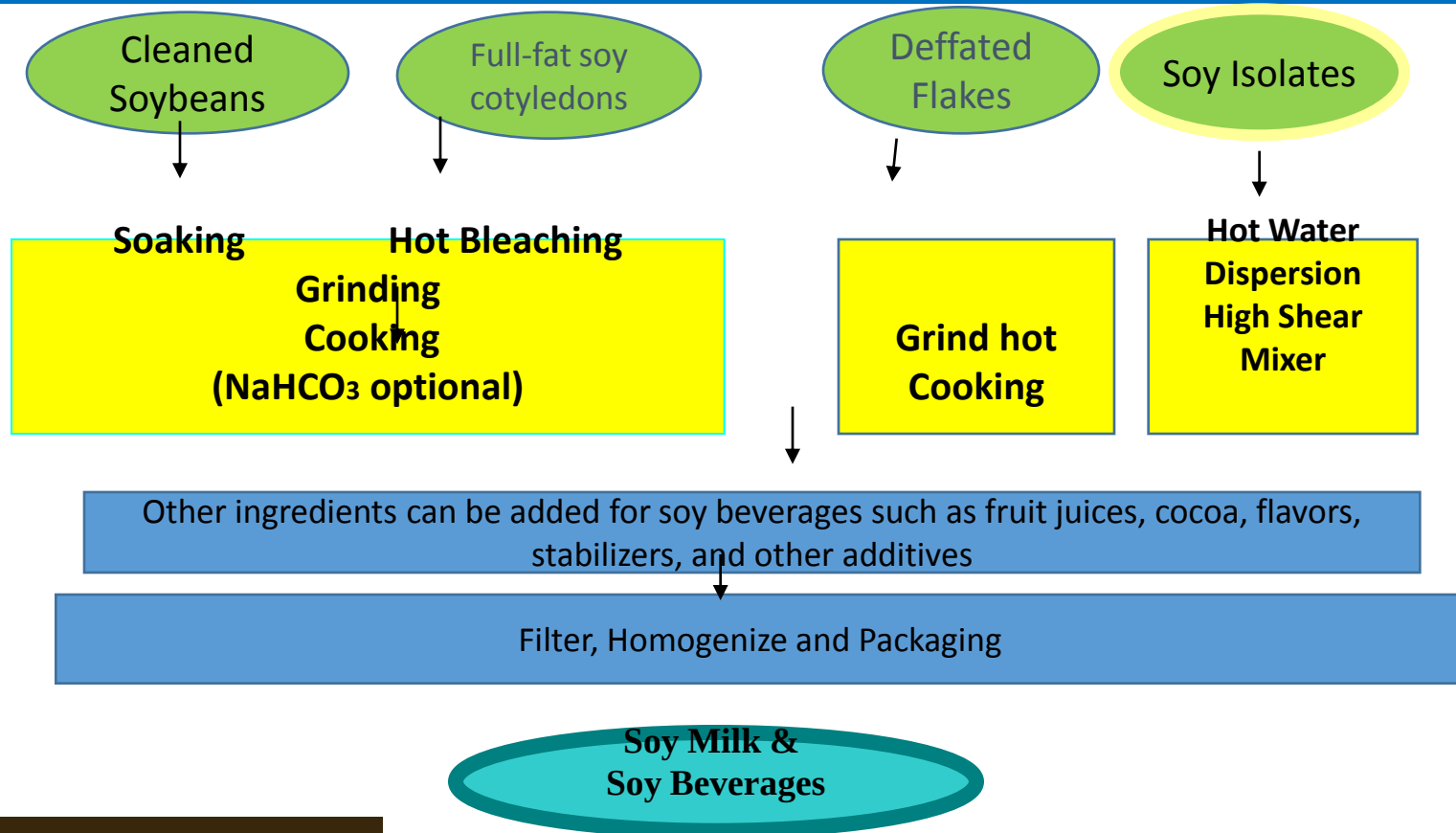
Basic Processing Operations for Soybean Meal and Crude Oil



Processing Soy Fiber, Soy Flour and TSP



Processing Soy Milk and Beverages



Soybean Oil Products Made in Latin America

Crude Oil
Degummed Oil
Refined, Deodorized Oil
Partially Hydrogenated Oil
SBO Shortenings
SBO Liquid Fats
Blends SBO with other oils

Soybean oil foods:
Margarines
Mayonnaises
Shortenings & Fats
Salad Dressings



Soy raw materials used in Latin America

Soy Flour 50 % Protein,

Soy Flour 50 % Protein from White flakes

Soy Flour low and high PDI,

Isolates 90 % Protein,

Concentrates 70 - 74 % Protein

Soy protein hydrolyzed, purified and milled

Soy lecithin

Soy Food Products Made in Latin America



Main Categories of Soy Foods Made in the Region:

- Meat Type -TSP, Flavored TSP,
- Ready to eat soy meals, Soy Dinners



- Dairy Type - Soy beverages, flavored, organic, natural, with fruit juices, powders for beverages, Soy yogurt.
- Consumption of tofu growing in Mexico
- Bakery Type – Breads, cakes and cookies with soy proteins
- Snack Type - Toasted whole grains, grits, spiced and sweet

KEY OPERATIONS IN PROCESSING SOYBEANS

Conditioning is prepared differently for temperature and moisture conditions

Hot Dehulling is used to remove hulls to produce 47- 48 % Protein meal

Grinding and sanitation are needed for Soy Flour

Flash desolventizing – low temperature-fast time-
to produce white flakes for TSP & soy flour

Expanders are more widely used in Mexico CAM and SAM
Their use increase the capacity of oil extraction
Essential in the preparation of TSP and other soy products

TECHNOLOGY TO PRODUCE SOY PRODUCTS IN LATAM

- Meals.- Most of the SBM produce is Hi Pro 47.5 % P.
 - Using Expanders, Improved dehulling, Conditioning of grains.
 - understand the principles of SBM processing:
 - I.- Inactivate enzymes and anti-nutritional factors
 - II.-Do not overcook This affect digestibility of AA
 - III.-Protect the meal to avoid contamination and microbial spoilage
- Oils.- Solvent extraction, Caustic refining, AOCS spec
 - Using NaOH, also silicas, activated clays, modern deodorizers
 - Inactivate lipoxigenase and other enzymes. Conditioning
 - eliminate pro oxidant materials Fe, Cu, Mg, chlorophyll - Bleaching
 - allow time for caustic reaction / neutralization of FFA – Long – Mix
 - Protect the oil against light, heat, oxygen, metals, enzymes and moisture
- Fats.- Selective Hydrogenation, mixes of oils,
 - Variable curves of solids. interesterification for trans free fats, blends of oil fractions
 - Ready to use new varieties of soybeans –Low Linolenic – High Oleic

TECHNOLOGICAL PRINCIPLES TO PRODUCE SOY FOODS

Soy Flour

- Separate hulls completely.
- Inactivate enzymes.
- Keep high sanitation conditions

TSP

- *Use flour from white flakes for clear color*
- Inactivate anti – nutritional factors.
- Do not overcook

Soy Milk Beverages And Yogurt

- Inactivate enzymes
- Protect product from oxidant materials
- Cook properly. Adjust fat, protein and solids.
- Select food additives for texture, color and flavor

RECOMMENDATIONS TO PRODUCE SOY FOODS

- soybeans grade # 1 preferable for human soy foods
- When using soybeans # 2 separate foreign material and damaged kernels
- SS equipment first choice for human consumption
- Inactivate anti-nutritional factors and enzymes
- Do not overcook . It will affect digestibility, flavor, color and costs
- Protect against light, oxygen, microorganisms, metals, insects, rodents and moisture
- Establish enough shelf-life to ensure consumer satisfaction
- Soy foods are made by intelligent people
- For intelligent people that take care of their health and their money
- use proper sanitation and hygiene in the plant and storage facilities
- Use GMPs' principles even for feed products
- Processes are flexible. Understand the purpose of process.

CONCLUSIONS

- Soybean processing plants producing soy oil and meal can diversify the product lines with low investments
- Producers of soy foods can get soy ingredients from oil extraction plants
- Different soy ingredients can be used for soy foods depending on technological level and cost
- Improved sanitation and GMP's needed for soy foods
- New marketing strategies are needed to commercialize soy foods focused on consumers needs and acceptance



Questions ?



Thank you!

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