

## SOYA BASED DAL (Dal Analogue)

Presented by :

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# Dal Analogue

- Made from defatted soy flour and wheat/corn/rice
- Contains about 50 percent soy
- More than 30% protein
  - 30% more than traditional dals
- Easy to cook
- Perfect vehicle for micronutrient fortification
- Locally available raw materials
- Economical and Healthier



# Potential for Dal (Lentil) Analogue

- Indian Pulses Situation
  - Stagnant Pulses production
    - Less than 0.7% CAGR in 50 years
  - Enormous gap in demand-supply
    - Gap to continue
  - Drastic decline in per capita availability
    - 27.3kg/year in '58-59
    - 16 kg/year in '89-90
    - 12.7kg/year in '2006-07
    - 13.9 kg/year in 2007-08\*



# Indian Pulses Situation

- Increased imports
  - 500 Thousand MT (TMT) in '89-90
  - 2500 TMT in 2007-08
  - 4500 TMT in 2010-11
- Increased prices
  - About 70% increase in the last ten years
  - Continue to increase



# Opportunities

- Feeding programs
  - In Mid-Day meal programs
    - More than 15 cr (150 mil) school children
    - Two largest agencies are using Dal Analogue
      - Akshaya Patra (ISKCON)
      - Naandi Foundation
    - Enormous potential
      - GAIN has evaluated MN fortified dal analogue
      - Being introduced in Rajasthan
  - ICDS Program
    - More than 12cr (120mil) children (0-6 years)
    - A.P. is already making progress
    - Trails in more states



# Opportunities – Cont.

- Retail market
  - Private labels
  - Soy food manufacturers
  - Public distribution
- Corporate Kitchens
- Defense establishments
- Exports
  - India export pulses to other south Asian markets
  - Pulses are more expensive than Indian market



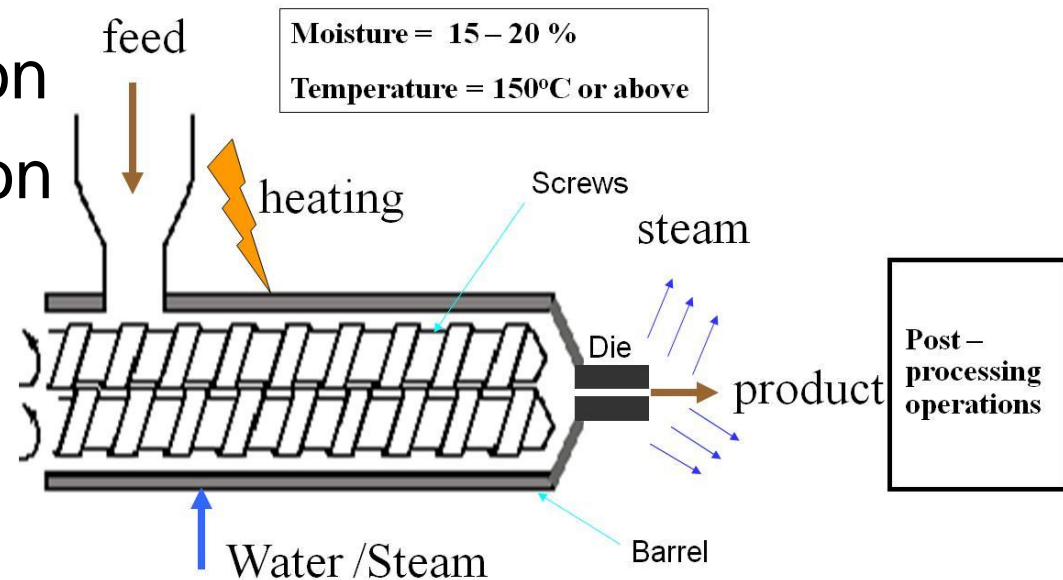
# Potential

- Mid day meal – 3,00,000 MT
  - 150 million beneficiaries
  - 30% target @ 20gm/day
- ICDS programs – 2,60,000 MT
  - 120 million beneficiaries
  - 30% target @ 20gm/day
- Public distribution – 2,00,000 MT
  - 4 million food cards
  - 5kg/month/card
- Retail market
- Functional food
- Imports – 20,00,000 MT
  - 50% current imports



# Functions of an extruder

- Cooking
  - starch gelatinization
  - protein denaturation
- Shaping/ Forming
- Expansion
- Shearing
- Texture alteration
- Mixing and unitizing various ingredients
- Pasteurization and sterilization
- Dehydration





# CAPACITY & COST

- Minimum viable plant capacity should be 2-3 MT / Hr.
- Project Cost - Estimated to be Rs. 25 Cr. to Rs. 28 Cr.
- ROI – 25%
- Break Even – 3<sup>rd</sup> Yr.



# **Thank You**

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