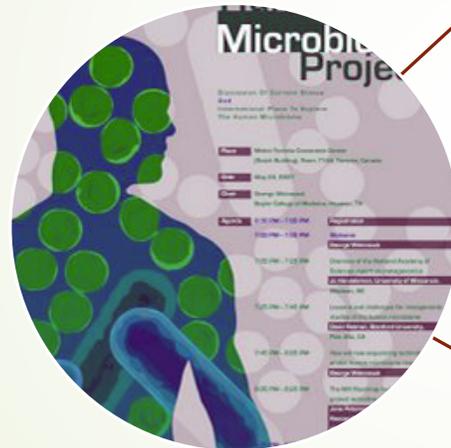


Human Probiotics—Future Trends

Striving to understand the relationship between human microflora and health



Science

- New discoveries
- New probiotic compositions

Regulation

- Product quality and claims
- Dose, potency, accuracy, health claims

Consumers

- Understanding and awareness
- Product demand

Infant Formula, Baby and Elder Foods

2

Existing technologies limitations

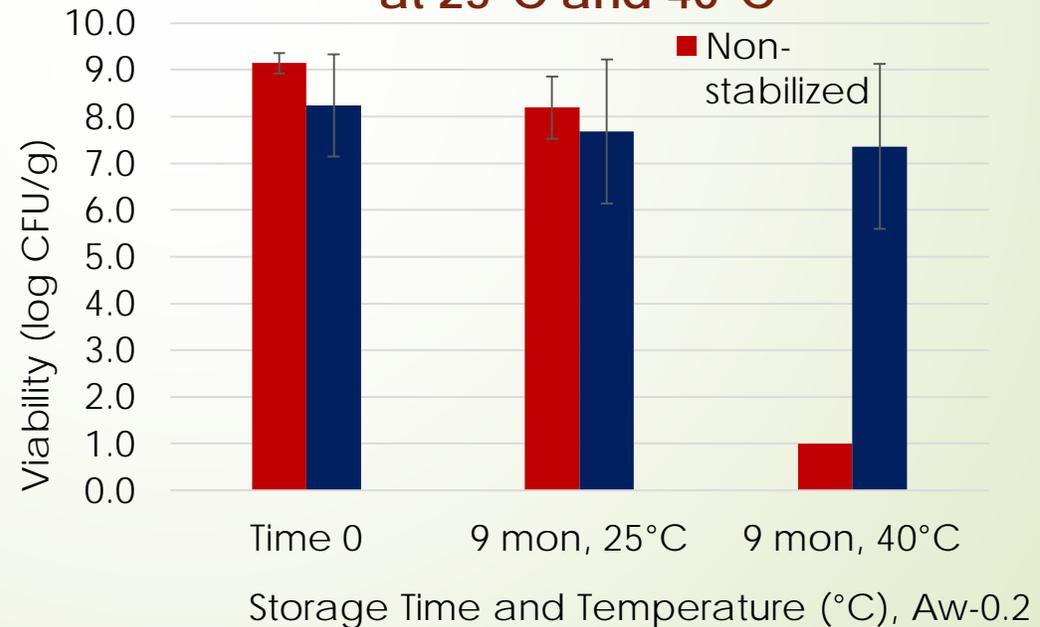
- Significant over-formulation is needed to ensure potency
- Vacuum tight packaging
- Low A_w (<0.15).
- Low to mild temperature (~25°C)



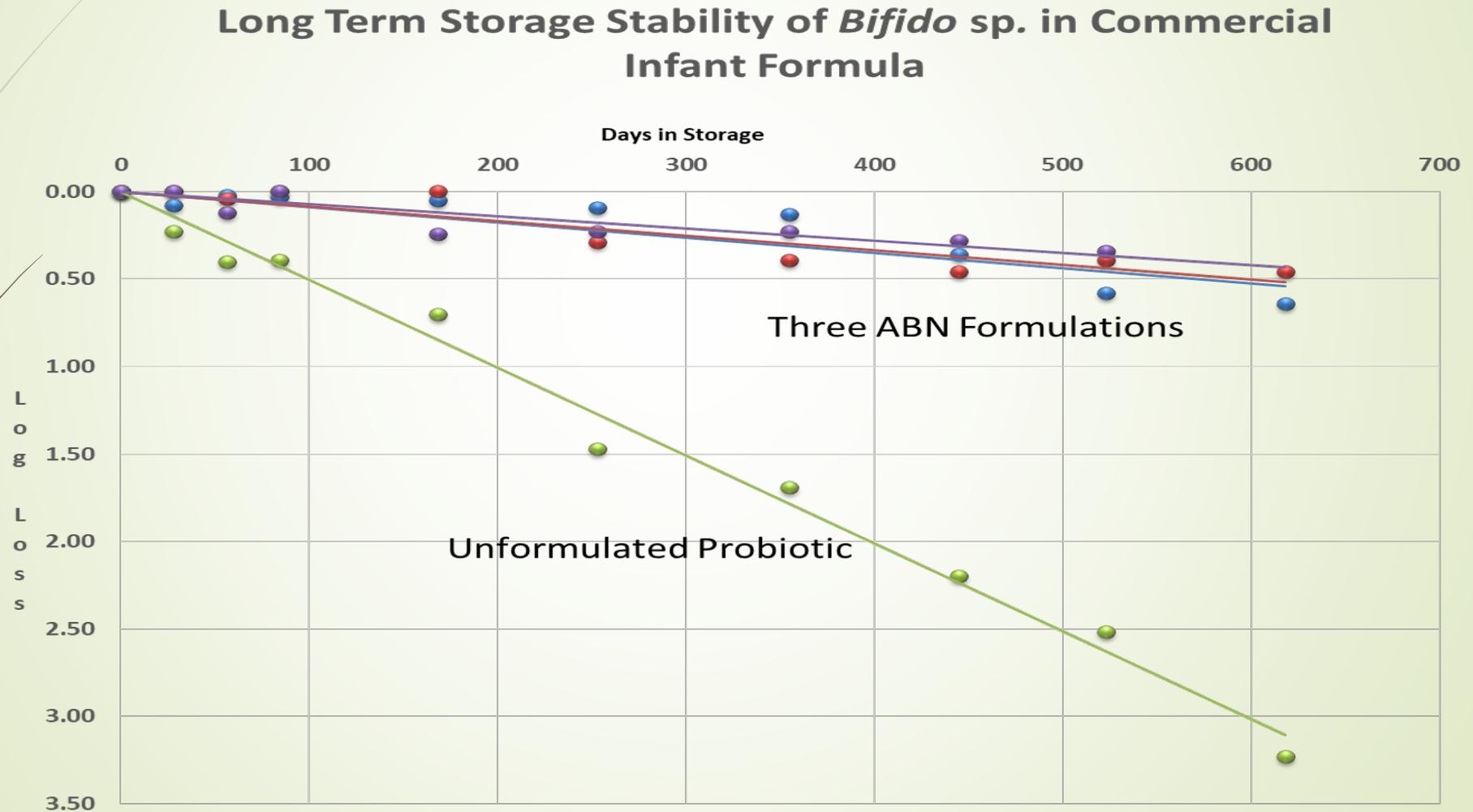
ABN Technology

- Minimal or no over formulation
- Standard food packaging (A_w ~0.3)
- Warm temperature exposure (30-40°C)

Survival of *Bifido* sp. in Infant Formula at 25°C and 40°C



Long Term Storage in Infant Formula



Probiotic Tablets

4

Existing technologies

- Significant loss during tableting
- over-formulation
- Moisture protected packaging
- Low A_w (<0.2).
- Low to mild temperature (~25°C)

ABN Technology

- Minimal loss during tableting
- Minimal or no over formulation
- Standard food packaging (A_w -0.3-0.4)
- Mild temperature exposure (25-30°C)
- Longer product shelf life



Survival of *L. paracasei* under Tableting Pressure (1ton)

