



1



# Leading Transformative Change in Our Global Food Supply

April 10, 2013

### Food Loss = Decreased Food Security

- 25% of produced food is lost in the global food supply chain (614 kcal/capita/day)
- 23-24% of total use of water, cropland and fertilizers are used to produce losses
- One billion extra people could be fed if food crop losses could be halved



We're going to have to double the world's food supply in the next 30 years to feed the projected increase in population and account for the increase in standard of living.



## **EnviroFlight Overview**

- We develop insect-based feed ingredients for animal feeds and plant nutrients.
- We produce hormone and antibiotic-free nutrients from the coproducts of bio-fuels, breweries, and food manufacturing.
- We produce complete diets for aquaculture species, with reduced reliance on fish meal and fish oil and elimination of animal byproducts.
- We have global relationships representing government, industry, higher learning, and trade associations.



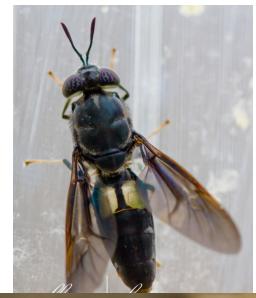


#### Black Soldier Fly

Hermetia illucens (Linnaeus)

#### Distribution

- Western Hemisphere, South East Asia, and Australia.
- Found in compost and in poultry manure.
- Feeding Habits
  - Plant refuse
  - Manure
  - Carrion (late stage)
- Damage
  - Do not bite
  - Non pathogenic

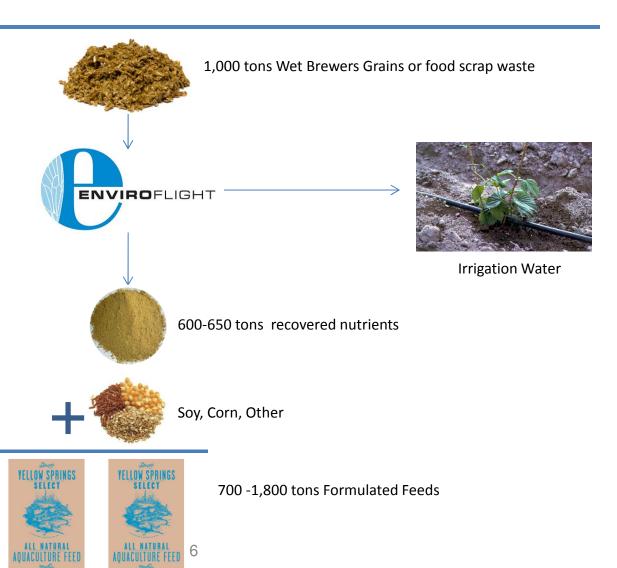






#### How Does it Work?

- •BSFL bioconversion is capturing 60-65% of caloric value from biofuels, brewing, and food manufacturing coproducts.
- •BSFL meal have proven to be a high quality ingredient for aquaculture feeds





#### **Patents**

- U.S. Patent Application No. 13/551,909
  - Filing Date: July 18, 2012
  - Title: METHOD AND APPARATUS FOR CONVERTING CEREAL BYPRODUCTS
  - INTO AQUACULTURE AND AGRICULTURE FEEDS



- U.S. Patent Application No. 13/551,918
  - Filing Date: July 18, 2012
  - Title: METHOD AND APPARATUS FOR BREEDING FLYING INSECTS





#### Market Verticals



Formulated Diets

P

- Prawn
- Yellow Perch
- Trout
- Tilapia
- Largemouth Bass
- Hybrid Bluegill

P

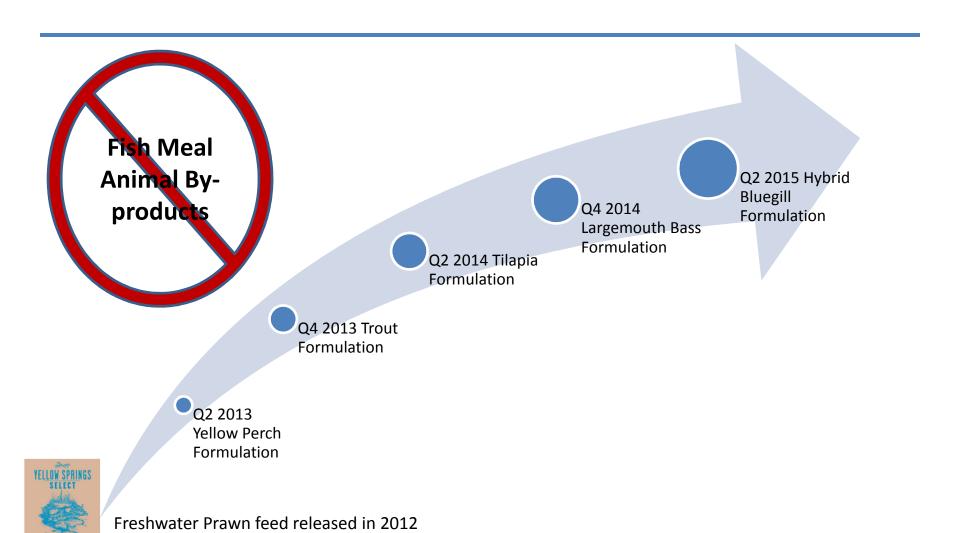
Services

System Integration

- FeedstockEvaluation
- Design-Build

#### Product Release Schedule

ENVIROFLIGHT



ALL NATURAL AQUACULTURE FEED

## Current Diet Development

NET WEIGHT 50 lbs		
ENVIROFLIGHT FINFISH FORMULATION		
Animal By-Product Free Feed for Fish		
REGISTRATION NUMBER (OHIO) 92768		
This feed contain added Selenium at 0.102 mg/kg		
GUARANTEED ANALYSIS		
Crude Protein (min)	43.82	%
Crude Fat (min)	11.54	%
Crude Fiber (max)	4.65	%
Sodium (Na) (actual)	0.01	%
Calcium (Ca) (actual)	0.41	%
Phosphorous (P) (actual)	0.32	%
Vitamin A (min)	6879.79	IU/kg
Vitamin D (min)	458.45	IU/kg
Vitamin E (min)	372.92	IU/kg
Vitamin C (min)	364.68	mg/kg
Ash	5.582	%



**ENVIRO**FLIGHT

10 10



## On-Going Research

- Research focused on following areas
  - Feedstock Flexibility
    - Food manufacturing nutrient capture
    - Palm kernel meal, coffee, etc.
  - Fish oil replacement
  - Multi-Species Formulations
    - Diet development
    - Feed trials



## Summary



In 2009, we set out to develop sustainable animal and plant nutrients

- Derived from locally available, low-value materials.
- ✓ Produced in a socially responsible, way.
- ✓ Eliminate toxins, hormones, and antibiotics from aquaculture feeds
- ✓ Reduce the environmental and financial costs to our food supply

In 2011, we achieved our goals!

2012 We commercialized the technology and filed patents 2013 We plan to finalize testing and expand production to meet client demands





13