

Keynote Address

Dr. Pearse Lyons
Alltech



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Alltech

- 🌐 Dr. T. Pearse Lyons is the founder and president of Alltech, a leading animal health company, employing more than 5,000 people in 120-plus countries. Founded in 1980 with \$10,000 capital, the company has grown to annual sales of \$2.1 billion.
- 🌐 Dr. Lyons is widely recognized as an innovative industry leader. His scientific expertise and acute business sense helped revolutionize the animal feed industry through the introduction of natural ingredients to feed.
- 🌐 Now in its fourth decade of business, Alltech improves the health and performance of people, animals and plants through natural nutrition and scientific innovation.
- 🌐 An native of Ireland, Dr. Lyons recently opened Pearse Lyons Distillery at St. James in Dublin with his wife, Deirdre. He has two children, Mark and Aoife.

The Future of Food

An Aquaculture Opportunity



DR. PEARSE LYONS



We know the facts

It is a

- world of openness
- world of community
- world of shifting population

China

- End of one child policy

India

- Soon to be the most populous country

Decreasing birth rates

- Japan
- Europe





World of uncertainty

EU

Migrant issue

Tax harmonization

US

Trump: challenges

UN Trade Agreement

Korea

“Rocket Man”


Global
warming

Water
shortages

Shortages of
resources

A digital globe with a network overlay and a bright light source. The globe is rendered in a blue, wireframe style with a grid of points and lines. A bright, glowing light source is positioned at the top left, casting a beam of light across the globe. The background is a dark, starry space with a horizontal blue line.

Yet

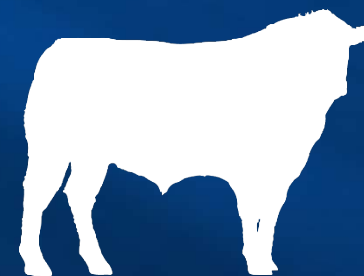
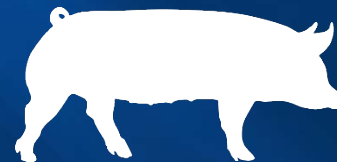


People
still have
to be fed

We must not waste

What source of protein is
most efficient?

Animal production



Protein retention	21%	18%	15%
Energy Retention	10%	14%	27%
Edible Yield	46%	52%	41%
Feed Conversion Ratio (FCR)	2.2	3.0	4-10
Edible Meat pr 100 kg fed	21 kg	17 kg	4-10 kg

Aquaculture production is highly resource efficient



Protein retention	21%	31%	18%	15%
Energy Retention	10%	23%	14%	27%
Edible Yield	46%	68%	52%	41%
Feed Conversion Ratio (FCR)	2.2	1.1	3.0	4-10
Edible Meat pr 100 kg fed	21 kg	61 kg	17 kg	4-10 kg

So, we are in the right
business!

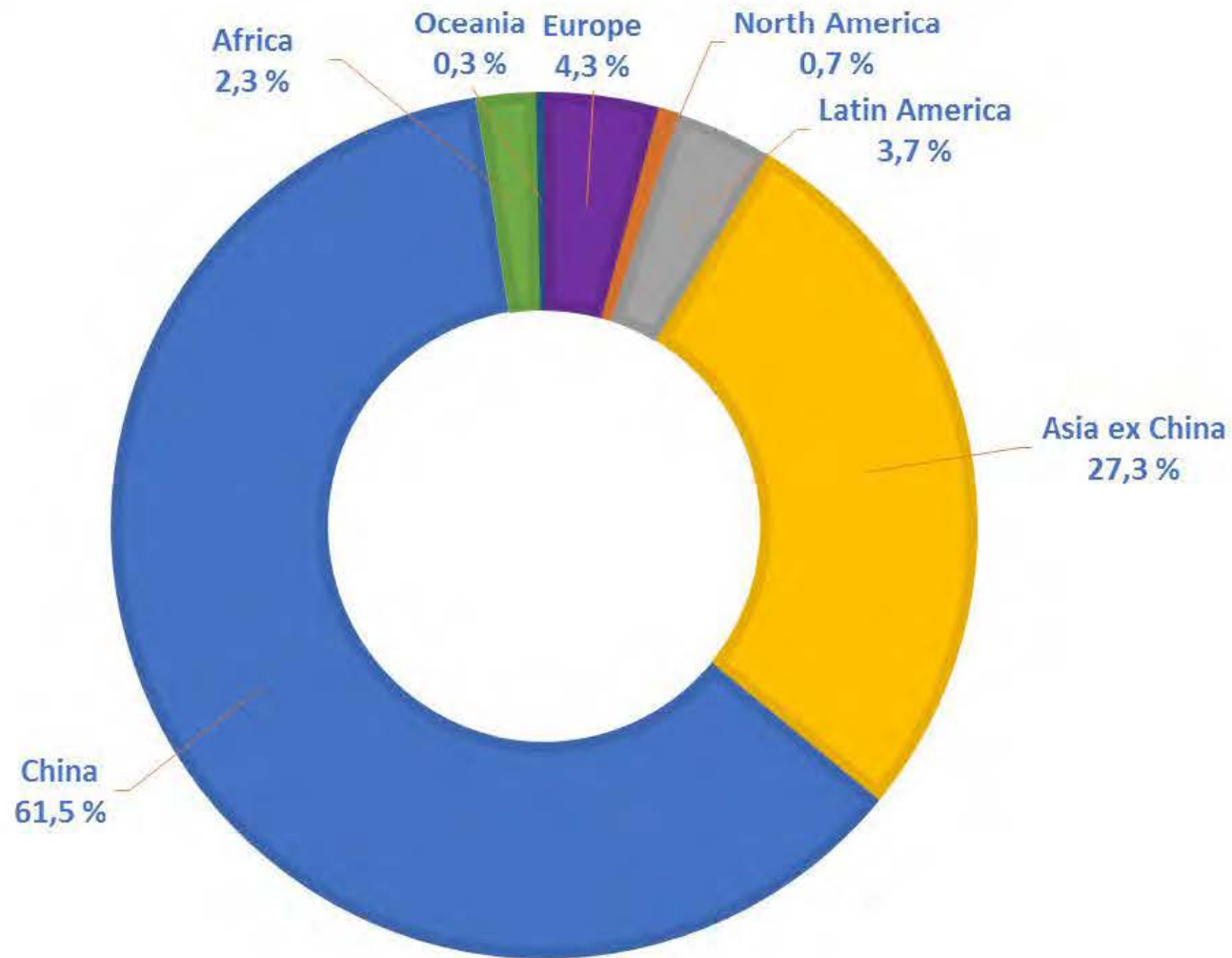
Where is aquaculture growing?

An underwater photograph showing a massive school of small, silvery fish swimming in clear blue water. Sunlight rays penetrate the surface, creating a shimmering effect. The fish are densely packed in the center and spread out towards the edges of the frame.

Right Area?

Where are the aquaculture regions?

88.8% in
Asia/China



Aquaculture

74M tonnes aqua business

Captured fish: 94M tonnes

An underwater photograph showing a massive school of small, silvery fish swimming in clear blue water. Sunlight filters down from the surface, creating bright spots and a shimmering effect on the water. The fish are densely packed in the center and spread out towards the edges of the frame.

Aquaculture
is growing

But...





Is it
sustainable



Problems facing aquaculture and captured fish

DHA levels dropping

Fish mislabeled

Transparency

Safety of fish

Marketing

Plastics & Dioxins

Confusion Salmon

\$5 kilo vs. \$15 kilo

Smoked Scottish Salmon
vs.
Scottish Smoked Salmon



An underwater photograph showing a massive school of small, silvery fish swimming in clear blue water. Sunlight rays penetrate the surface, creating a shimmering effect. The fish are densely packed in the center and spread out towards the edges of the frame.

Are we
transparent?



Is it really
sea bass?





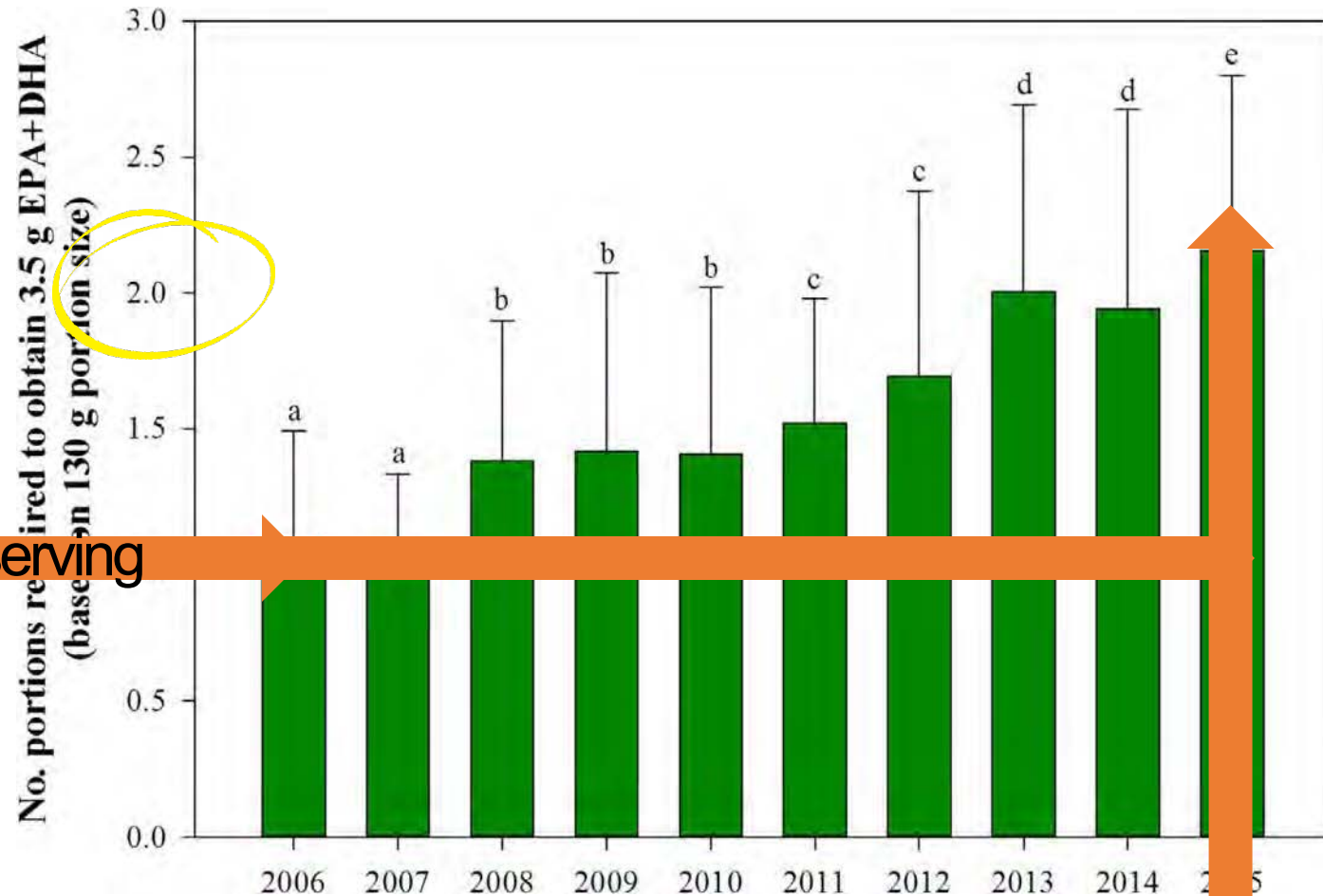
Are we truthful



An underwater photograph showing a vast school of small, silvery fish swimming in clear blue water. Sunlight rays penetrate the surface, creating a shimmering effect. The text is overlaid in the center in a large, white, sans-serif font.

**Others using what was
“your unfair advantage”**

NUMBER OF SERVINGS TO MEET RECOMMENDED WEEKLY DHA INTAKE



one serving

*Twice
as
much!*

Have we missed the point?

Functional Foods Enriched with DHA



DHA consumption and cognitive function

Dr. Mongkol Kaewasutas



Reaction Time

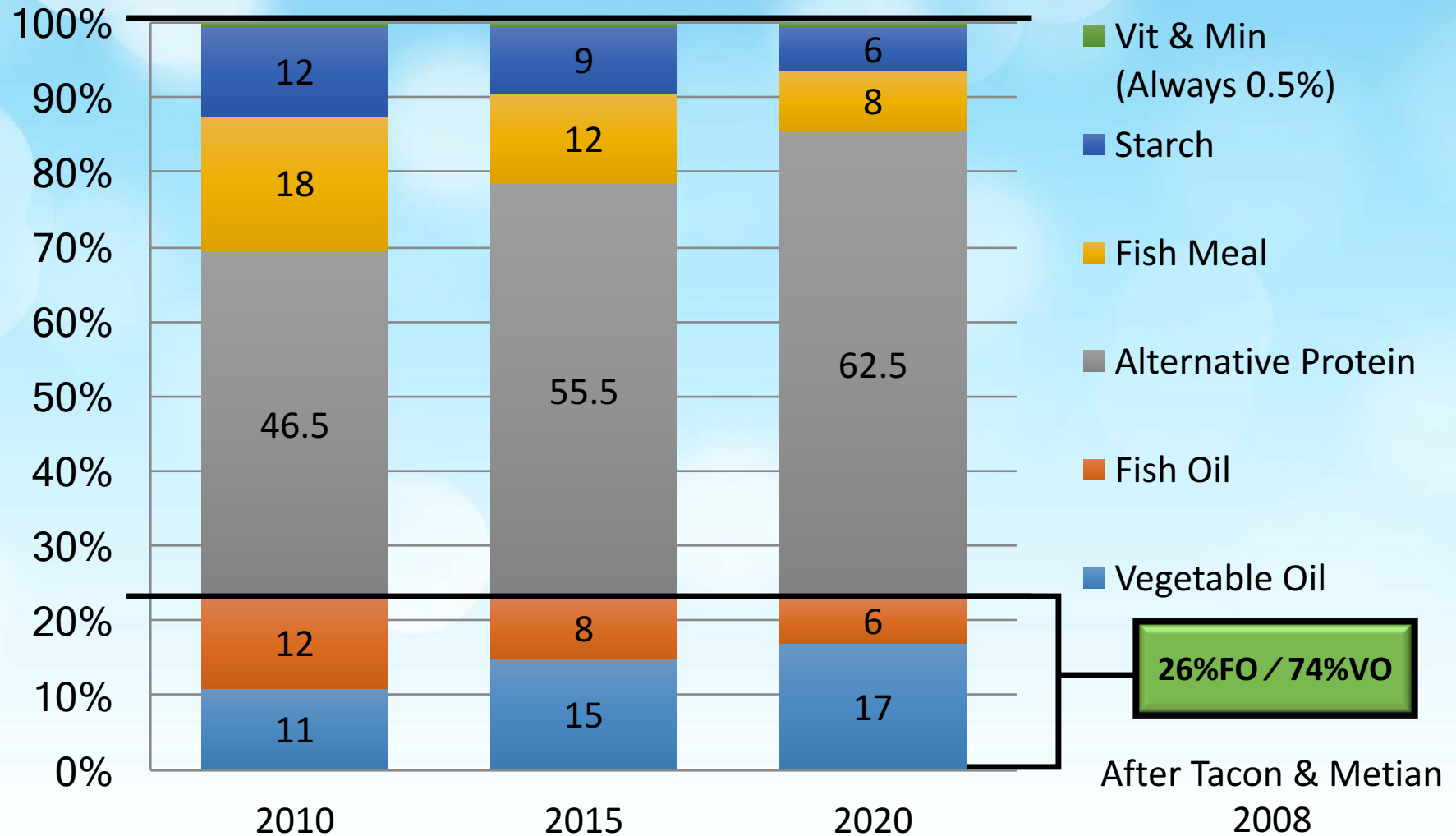
Effect of Consumption of 2 DHA Eggs for 8 weeks		
	Control	Experiment DHA Egg
DHA consumed mg/day	51.8	278
Reaction Time (milli sec)	486	380

Dr. Mongkol Kaewasutas 2017

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why?

Trends in Modern Salmon Feed Formulation



A large school of fish swimming in blue water with sunlight filtering from the top left.

The fish are changing

Problems Opportunities

Opportunities Problems

Opportunities

Pollution

More efficiency

Safer

Transparent

Diseases (sea lice)