



Farmer or Pharmacist?

Improving the health and performance of people, animals and plants through natural nutrition and scientific innovation.

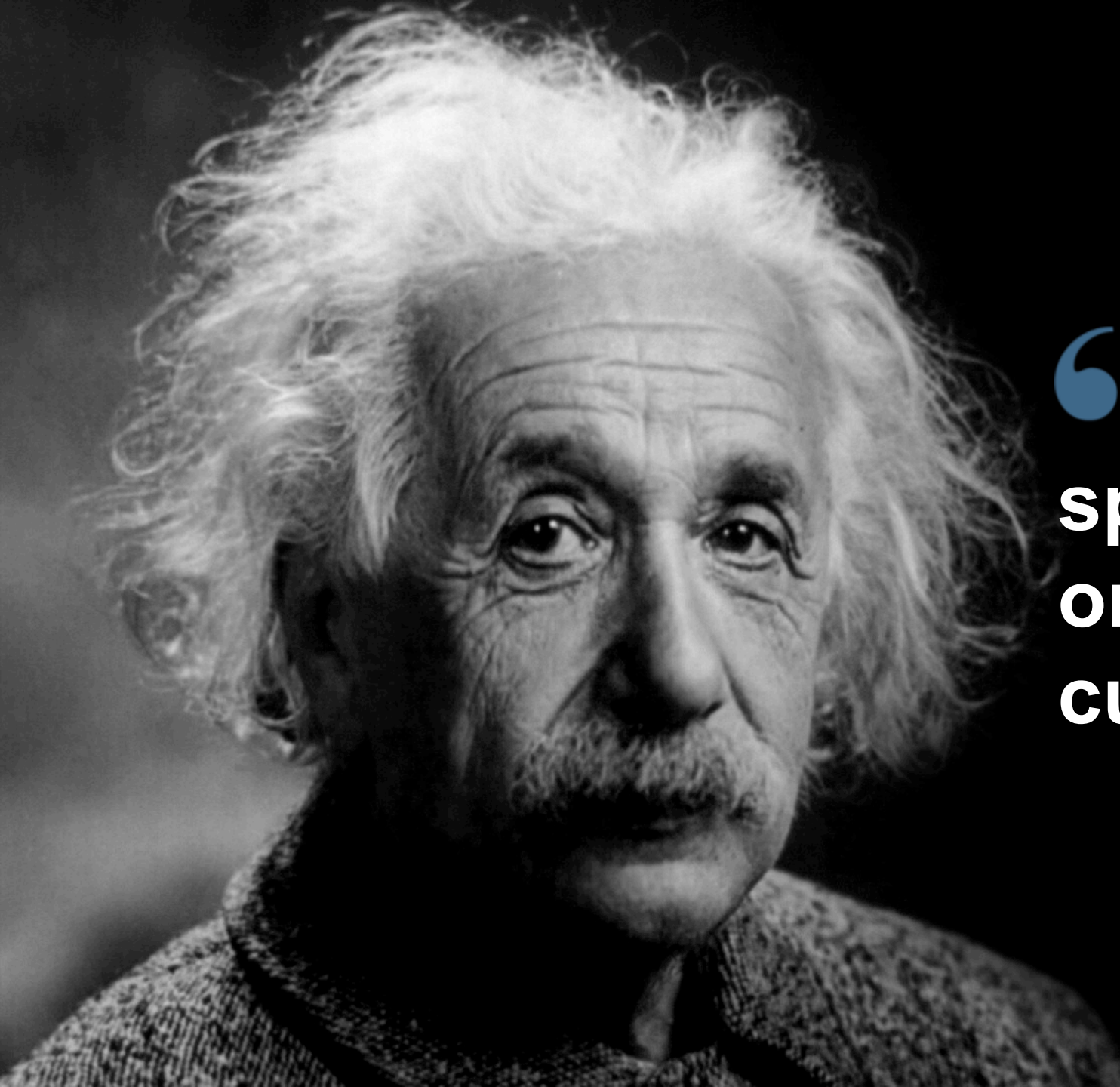
Dr. T. Pearse Lyons



**Are you an
entrepreneur?**



**Are you a leader
or a follower?**




“ I have no special talent. I am only passionately curious.”

- Albert Einstein



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A microscopic view of yeast cells, showing various shapes and sizes, some budding, against a dark background with blue bokeh lights. The cells are illuminated with a warm, golden light.

My curiosity...
born in Birmingham

yeast

1971

PhD in Brewing and Fermentation

British school of Brewing
University of Birmingham



What if?




What if you could make claims on:

- Cancer
- Alzheimer's
- Antibiotic Free
- Brain, cardiac health





Is it
Functional Food?

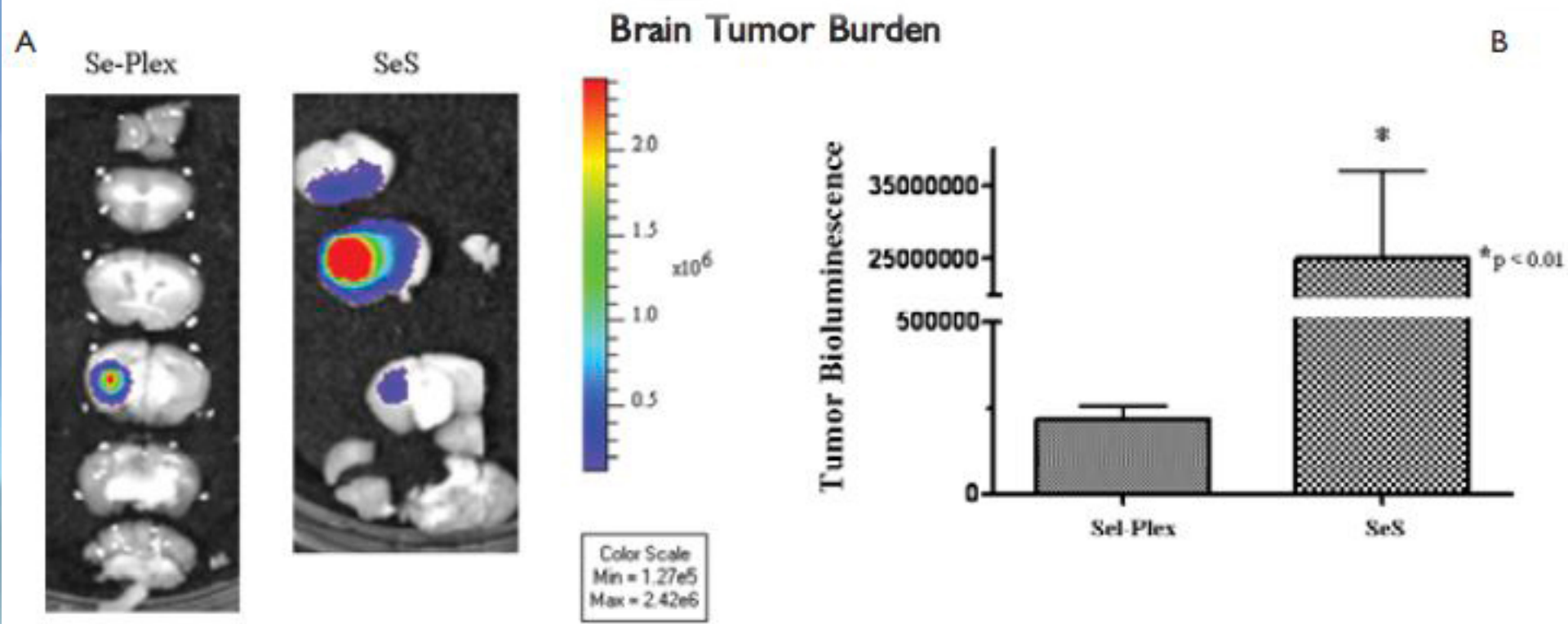
A detailed illustration of a fish, possibly a sea bream, lying on a bed of yellow straw. The fish is surrounded by various fresh ingredients: a red tomato, a green leafy vegetable, a mushroom, a walnut, a pear, a yellow apple, and a bunch of green grapes. The background is a light, textured surface.

No it's Food

Make claims on:


- Cancer
- Alzheimer's
- Antibiotic Free
- Brain, cardiac health





HRx = 5.4542
WM = 1.5392
Color 20000



The background of the slide features a silhouette of several chickens against a bright, hazy sunset sky. The sun is low on the horizon, creating a strong lens flare and illuminating the scene from the left. The chickens are dark against the light sky, with their forms clearly visible. The overall mood is warm and natural.

**By making a simple
change in the
animal's diet**

SEL-PLEX Enriched Food Products



Mega Egg - UK



Gyermelyi - Hungary



Power Eggs - India



Selk - Korea



NutriPlus - Malaysia

Make claims on:

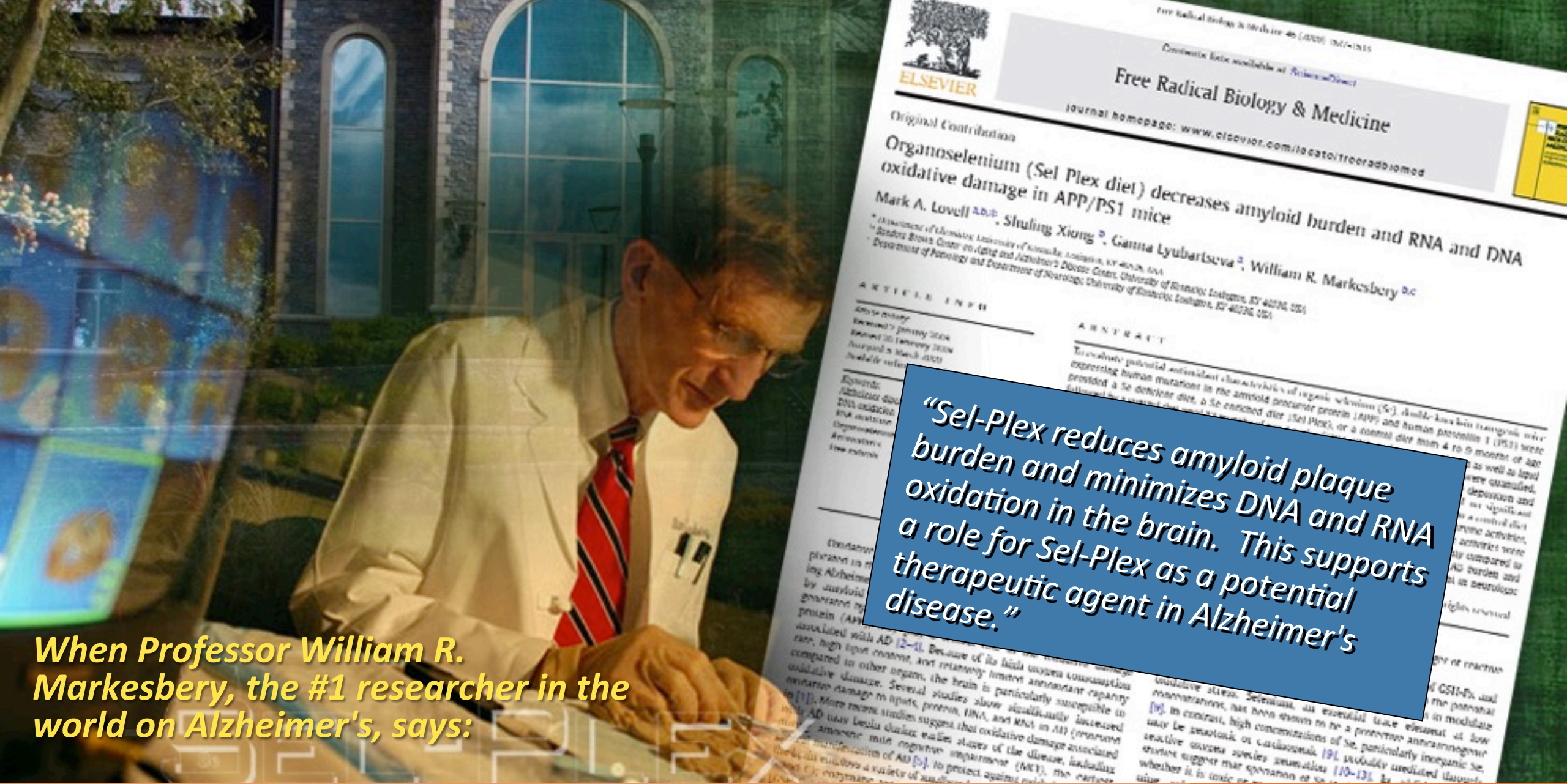
- Cancer
- Alzheimer's
- Antibiotic Free
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The cost of Alzheimer's disease

In 2008 the direct and indirect costs were put at >160 billion euro for the EU.

Projected cost in the EU by 2030? Over 250 billion Euro!



When Professor William R. Markesbery, the #1 researcher in the world on Alzheimer's, says:

"Sel-Plex reduces amyloid plaque burden and minimizes DNA and RNA oxidation in the brain. This supports a role for Sel-Plex as a potential therapeutic agent in Alzheimer's disease."



Original Contribution
Organoselenium (Sel Plex diet) decreases amyloid burden and RNA and DNA oxidative damage in APP/PS1 mice

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Free radicals

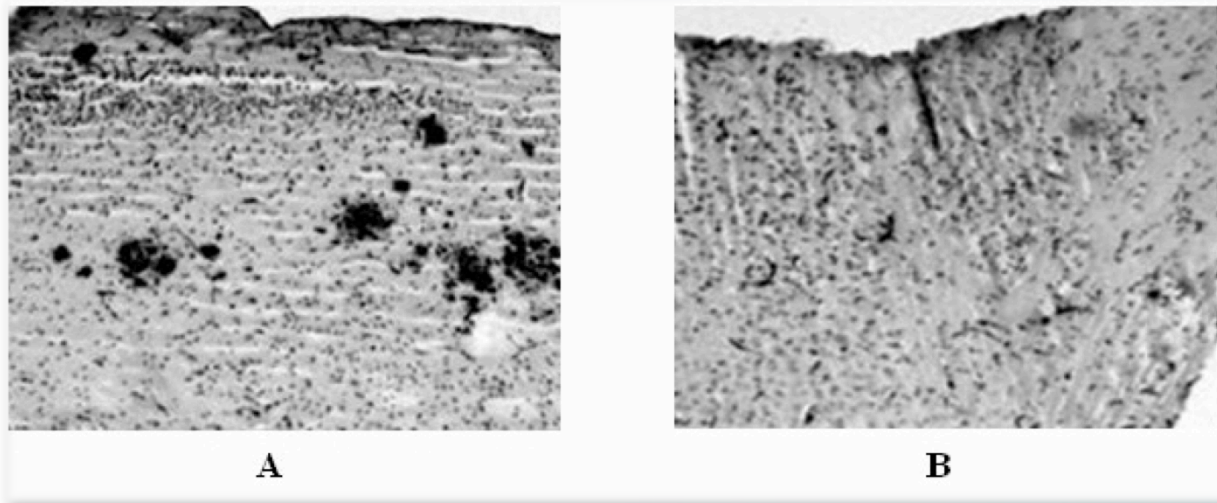
ABSTRACT

To evaluate potential antioxidant characteristics of organoselenium (Se), double knock-out transgenic mice expressing human mutations in the amyloid precursor protein (APP) and human presenilin 1 (PS1) were fed as well as lipid peroxidation, amyloid deposition and oxidative stress. Mice on a control diet (Std) or a Se-enriched diet (Sel-Plex), or a control diet with Se provided a Se deficient diet, a Se enriched diet (Std+Plex), or a control diet with Se provided a Se deficient diet (Std+Plex+Se) were evaluated. Amyloid burden and oxidative stress were significantly reduced in mice on the Sel-Plex diet compared to Std. Amyloid burden and oxidative stress were significantly reduced in mice on the Sel-Plex+Se diet compared to Std+Plex. Sel-Plex diet significantly reduced amyloid burden and oxidative stress in mice on the Std+Plex+Se diet compared to Std+Plex. Sel-Plex diet significantly reduced amyloid burden and oxidative stress in mice on the Std+Plex+Se diet compared to Std+Plex+Se. Sel-Plex diet significantly reduced amyloid burden and oxidative stress in mice on the Std+Plex+Se diet compared to Std+Plex+Se.

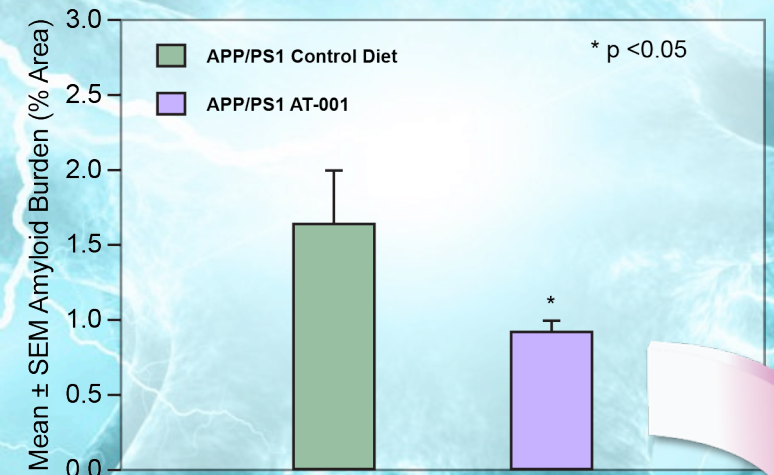
Standardized procedures for the preparation of transgenic mice expressing Alzheimer's disease (AD) amyloid precursor protein (APP) and presenilin 1 (PS1) mutations associated with AD [2–4]. Because of its high oxygen consumption rate, high lipid content, and relatively limited antioxidant capacity compared to other organs, the brain is particularly susceptible to oxidative damage. Several studies show significantly increased oxidative damage in lipids, proteins, DNA, and RNA in AD [5–7]. More recent studies suggest that oxidative damage associated with AD may begin during earlier stages of the disease associated with amyloid and cognitive impairment (MCI), the earliest manifestation of AD [8]. To protect against oxidative damage, the brain employs a variety of antioxidant enzymes and antioxidants.

oxidative stress. Selenium, an essential trace element, is an antioxidant, has been shown to be a protective antioxidant [9]. In contrast, high concentrations of Se, particularly inorganic Se, may be neurotoxic or cardiotoxic [10]. Inorganic Se, particularly inorganic Se, is a reactive oxygen species generator [11,12]. It is likely that whether it is toxic or protective depends on the concentration of Se in the tissue.

AT-001 decreases amyloid plaque burden in a mouse model of human AD



Representative micrographs of APP/PS1 mice fed a normal diet (A) or a AT-001-supplemented diet (B). Lovell et al., 2009)



45-50% reduction

Make claims on:

- Cancer
- Alzheimer's
- Antibiotic Free
- Brain, cardiac health





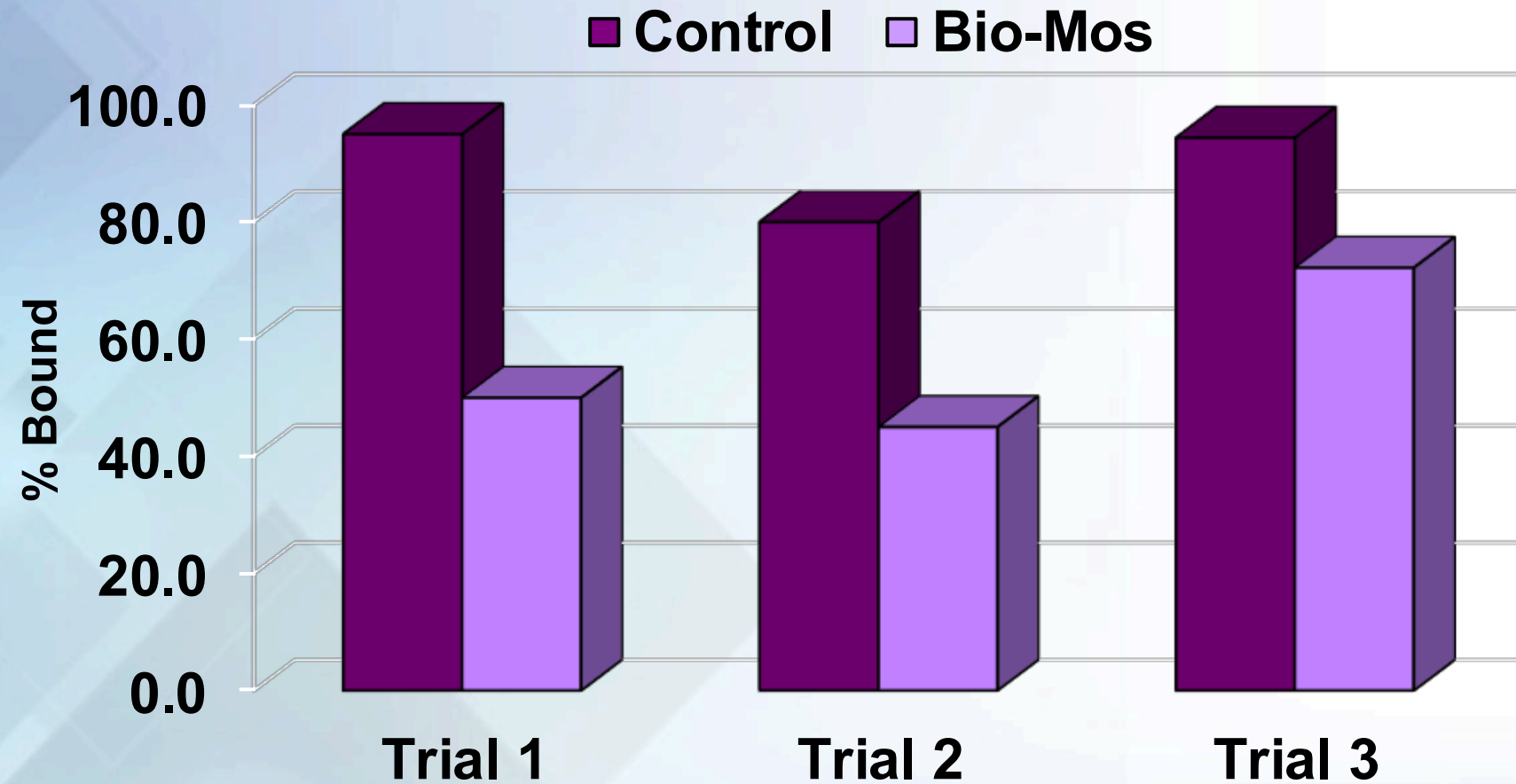
How?

Claims: BIO-MOS®

- Reinforces the function of the digestive system
- Contributes to managing the risk of diarrhoea
- Contributes to immune system development
- Improves nutrient utilisation

Consistently Protects Against Salmonella Infection

- Producers can command a double premium – functionality and antibiotic free



Make claims on:

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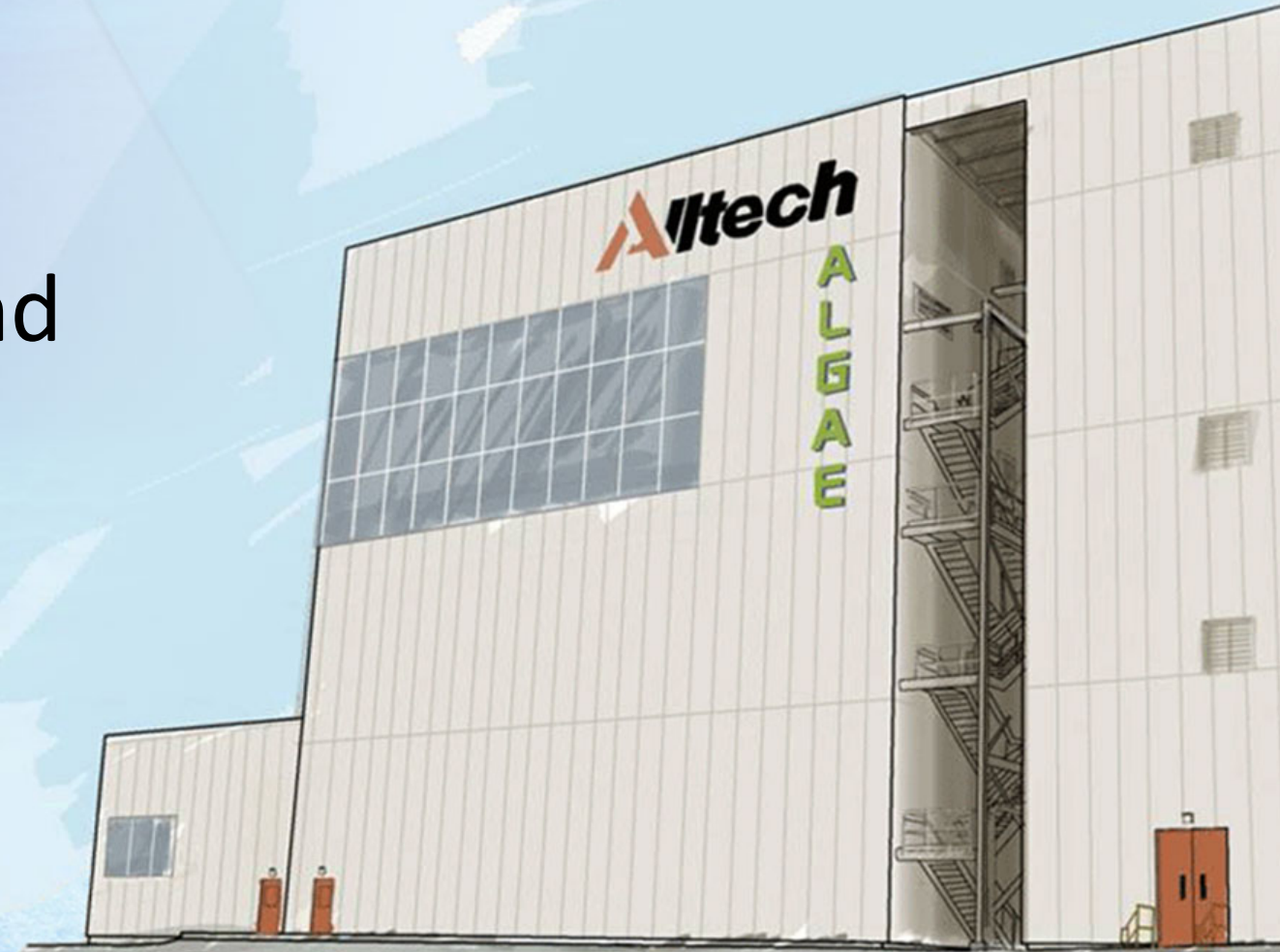




How?

The Answer?

- Enriching meat, milk and eggs from farm to fork
- High in DHA



International EPA + DHA Recommendations

The average adult is taking in 60-80 mg of DHA in their daily diets, well below the 220 mg/day recommended by the ISSFAL.

Organization	Population	DHA + EPA Recommendations
Academy of Nutrition and Dietetics	Adults	≥500mg/day
American Heart Association	Adults without coronary heart disease (CHD)	~500mg/day
American Heart Association	Adults with coronary heart disease (CHD)	~1,000mg/day
US Department of Agriculture	Adults	≥250mg/day
International Society for the Study of Fatty Acids and Lipids	Infants 1-18 months	32mg/lb/day
International Society for the Study of Fatty Acids and Lipids	Children 1.5-15 years	15mg/lb/day
International Society for the Study of Fatty Acids and Lipids	Adults	≥500mg/day with a minimum of 220mg EPA and 220mg DHA
European Food Safety Agency	Adults	≥250mg/day
World Health Organization	Adults	≥250mg/day
European Commission	Adults	200mg/day
Japan Society for Lipid Nutrition	Adults	~1,000mg/day



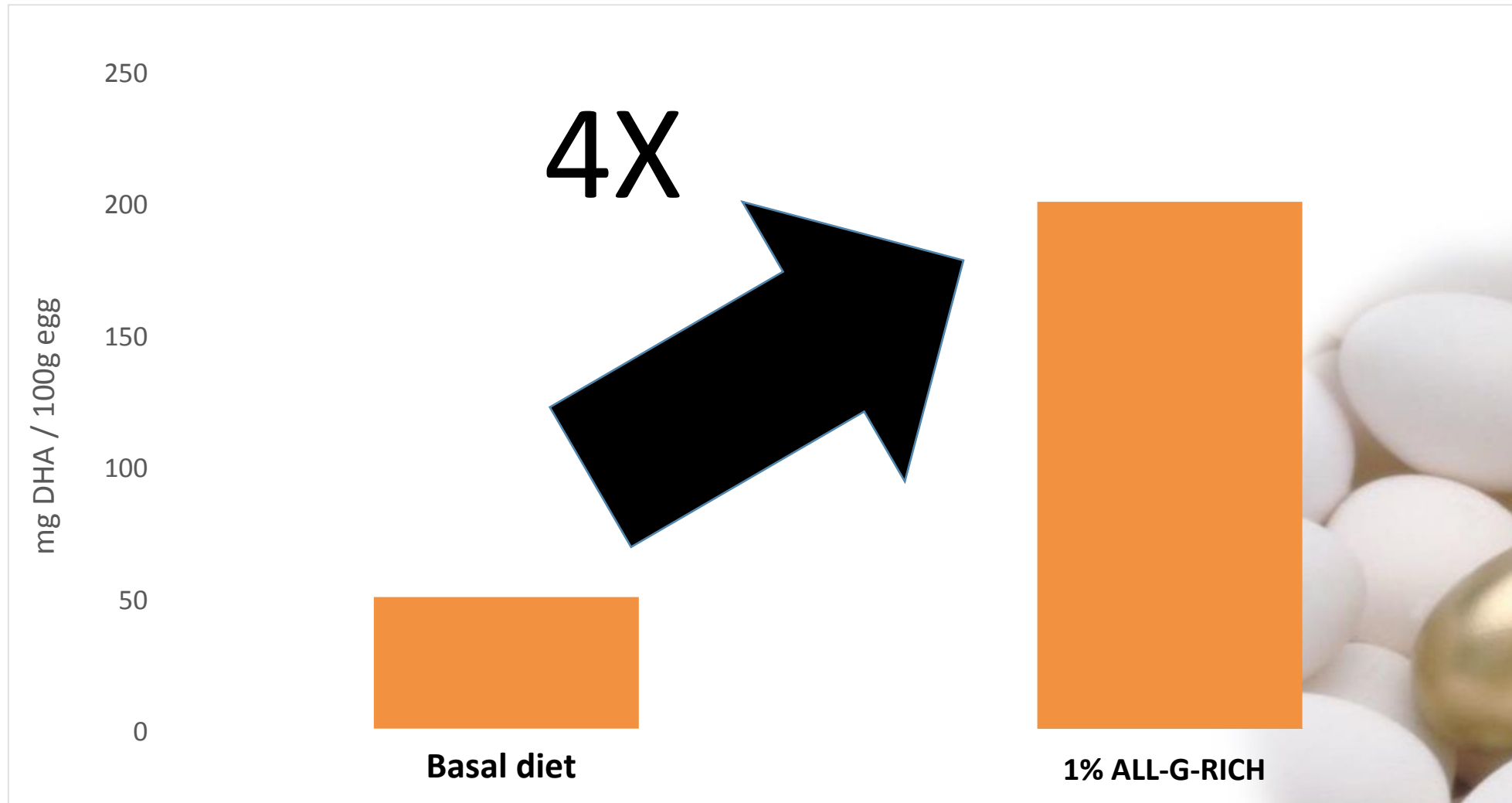
**Could a couple
of eggs a day
help to keep
the Doctor
away?**

EFSA says YES!

- Better health
- Better vision
- Better cognitive function



DHA enrichment of Eggs – Commercial Trial in United Kingdom

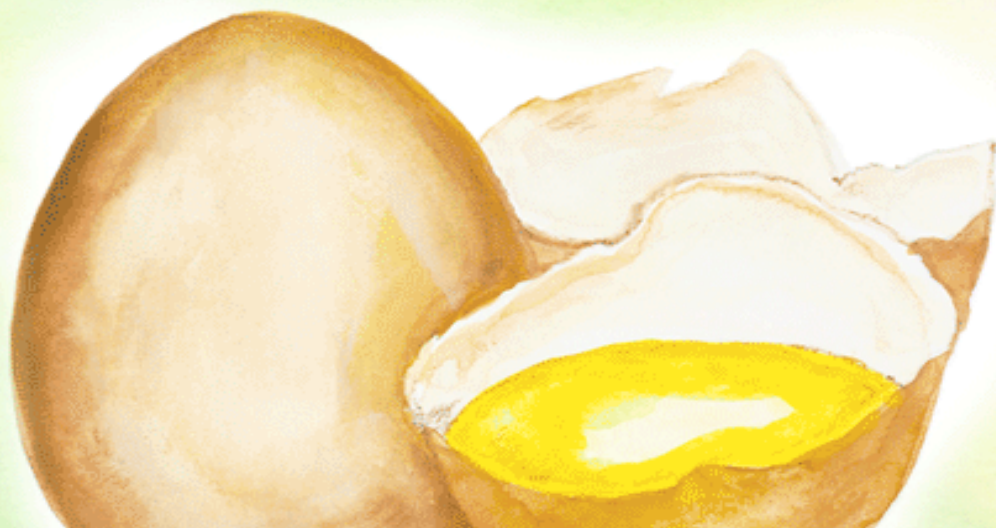




Sainsbury's

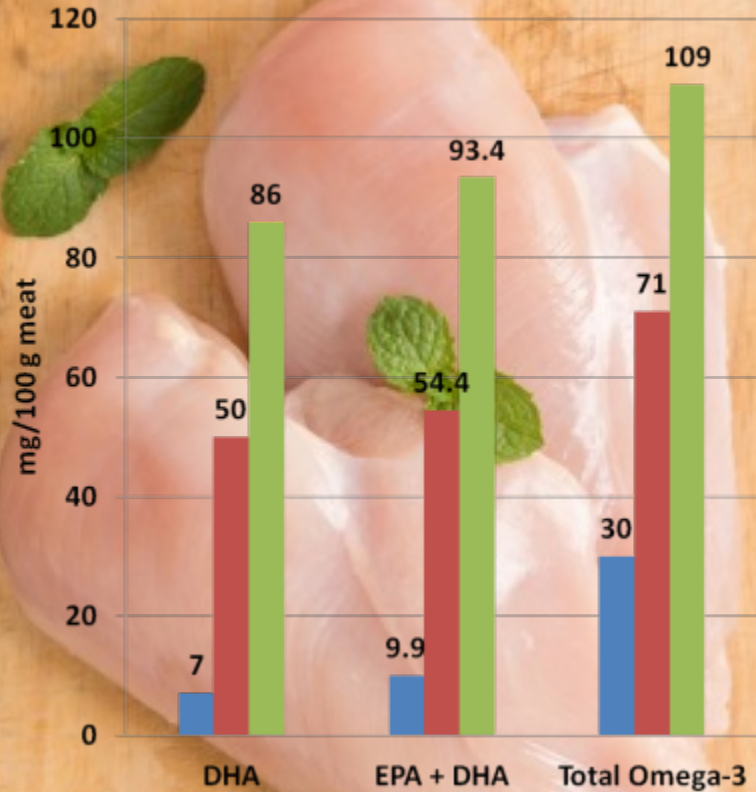
Skea eggs

YOUR M&S



Alltech®

It's not just the egg but the whole chicken



- Corn-soy control
- C + 2.0% ALL-G RICH
- C + 4.0% ALL-G RICH

**Can we do this
cost effectively?**



YES





Better health for all ages

Alltech®



There is ONE more thing I
would like to share with you

A vision of a better
future for our industry

one

Alltech®

A man in a pink checkered shirt and blue jeans stands in a field of tall green plants, looking at a tablet. The background shows a blue sky with white clouds and rolling hills.

one

change in the way
we work

 Alltech®



one
change in the food
we buy

one vision

showcasing how one idea
can change the world





its down to the choices we make

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one

The **Alltech**® Ideas Conference

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CONVENTION CENTER | LEXINGTON, KY

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It's up to you



Thank you