



**DR TIM MOSS**

BSc (Hons), MSc, PhD, MIFST

**Director of Science Asia**

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Tim Moss has an honours degree in Biochemistry, an MSc in Toxicology and a PhD in Environmental and Occupational Medicine. Previously Study Director of a major agricultural chemical company, he joined Brookes Bell in 2000, and became Director of Science, Asia in 2019.

His area of expertise concerns the investigation of spoilage, damage, infestation and deterioration during carriage and storage of a wide variety of commodities: grains, oilseeds, bagged products such as sugar, rice and coffee, processed products such as soya bean meal, liquid cargoes such as edible oils, minerals, chemicals and refrigerated goods. He has attended hundreds of vessels, factories, warehouses, storage facilities and silos worldwide during these investigations.

He has specific expertise in the contamination of cargoes and the environment with potentially toxic substances, such as fuels, diesel, solvents and chemicals, and has investigated many high-profile food and feed contamination cases. He can also advise on the problems associated with tainting of food and feed cargoes. He has working experience and expertise in the processes involved with malting, brewing and distilling.

Tim's background in chemical safety means he has practical experience with a variety of hazardous materials and can advise on carriage and packaging (where appropriate) of a variety of hazardous materials whether in bulk or packaged.

He has experience in, and can advise on, a range of analytical techniques in Chemistry, Microbiology and Biochemistry, such as Spectrophotometry, High Performance Liquid Chromatography, Thin Layer Chromatography, Nuclear Magnetic Resonance, Gas Chromatography, Mass Spectrometry, etc. He also has experience in Molecular Biology and can advise on the properties and detection of genetically modified (GM) crops.

Tim has also attended on vessels during and following loading a wide variety of group A cargoes (those liable to liquefy).

Tim has acted as an expert witness in several hearings in UK High Court, in the Magistrate's Court, in Courts in PRC and in arbitrations worldwide, including New York, London, LMAA, FOSFA and GAFTA, and in mediations.

**Academic Qualifications**

BSc (Hons) in Biochemistry, University of Sheffield. Subjects studied included Molecular Biology, Physical, Organic and Inorganic Chemistry, Microbiology, Physiology and Genetics.

MSc in Toxicology, University of Birmingham. Studies included investigating toxicity of chemicals, solvents, pesticides, herbicides, pharmaceuticals, cosmetics and pollutants.

PhD in the metabolism of xenobiotics during absorption through human skin. Involved modeling human skin behaviour *in vitro*, various analytical chemistry techniques, cell culture, immunohistochemistry, protein electrophoresis and development of bespoke metabolic analysis protocols.

**Professional Memberships**

Member of the British Toxicology Society

Member of the UK Drug and Pesticide Metabolism Group

Member of the International Society for Horticultural Science

Member of the Institute of Food Science and Technology

**Previous Relevant Employment History**

Study Director in Toxicokinetics, AgrEvo and Aventis, Saffron Walden

Unilever, Sharnbrook and Newcastle-upon-Tyne Medical School – Research Assistant/Studentship

Technician in Brewery laboratory

## Scientific and Consultancy Experience

### Damage to Commodities

- Grain – maize (corn), wheat, barley, sorghum, malt (particularly in brewing and distilling)
- Whole oilseeds – soya beans, rapeseed (canola), Sunflower seed, cotton seed, copra,
- Bagged products – rice, sugar, coffee, cocoa beans
- Chemicals such as pesticides, herbicides, pharmaceuticals and solvents
- Agricultural products – seed cakes such as soya bean meal, corn gluten meal, DGGs, copra meal, Citrus Pulp Pellets and other hazardous feed meals
- Edible oils such as palm oil and sunflower seed oil
- Biodiesel issues
- Refrigerated fruit – oranges, kiwifruit

### Safe Carriage and Storage of Commodities

- IMDG Code declarations
- Group A cargoes and liquefaction issues
- Fumigation of cargoes: efficiency, toxicity, fire and explosion
- Contamination of edibles by toxic substances such as chemicals, solvents, fuel oils and diesel
- Environmental damage by chemicals and solvents; chemical identification of pollutants
- Management of toxin exposure to humans and animals
- Occupational toxicology
- Growth of micro-organisms such as moulds, fungus and bacteria
- Insect infestation and fumigation of cargoes
- Detection of genetically modified (GMO) foodstuffs
- Sampling

### Publications

Moss T (2003) "Hazardous Goods" Shipping and Transport Lawyer

Moss, T, Sheard JD (2001) "Beating the Bugs" Shipping and Transport Lawyer

Moss T, Howes D and Williams FMW (2000) "Percutaneous Penetration and Dermal Metabolism of Triclosan (2,4,4'-trichloro-2'-hydroxydiphenyl ether)" Food and Chemical Toxicology 38 pp.361-370.

Moss T, Howes D, Blain PG & Williams FMW (1996) Characteristics of Sulphotransferases in Human Skin. In "Prediction of Percutaneous Penetration" ed. KR Brain, VJ James and KA Walters, Vol. 4b, pp.307-311.

**P&I Bulletins**

Moss T, Petrone L, Bowles G Japan P&I Club Loss Prevention Bulletin Vol.44 (2019) The Importance of Cargo Sampling

Moss T Sheard JD (2016) "Contamination with GMO Cargo"

Moss T Cooke PJ (2015) "Carriage on Bitumen/Asphalt Rock"

Moss T (2015) "DDGS to China"

Moss T Cooke PJ (2013) "Ball Clay from Malaysia"

**Seminars**

Boxing Clever (Oct 2021)

Petroleum and Precision (May 2021)

Analysis Paralysis? Presentation on Chromatography (Nov 2019)

Bauxite Group A or C? Either Ore (May 2019)

Phantom Wetting (Oct 2018)

Worsening Weather? (May 2018)

The Tao of Sampling (Oct 2017)

Prevention is Better Than Cure (Mar 2017)

GMO Cargo Contamination – What Can Be Done (Nov 2016)

All about Soya Beans Workshop (Oct 2016)

The Challenges of Mega Ship Casualties – Discussion Panel (Nov 2015)

Bulk Cargo Tips and Tricks (Apr 2015)

Bulk Cargo Anything Goes (Nov 2014)

Seed Cake and its Dangers (Oct 2014)

Hazardous Goods – Hidden Dangers (Mar 2014)

Liquefaction: Nickel and Iron Ores (Dec 2013)

Coal carriage (Oct 2012)

Basics of Liquefaction (Nov 2010)

Hazardous Goods: Toxicology in shipping (Jul 2007)