

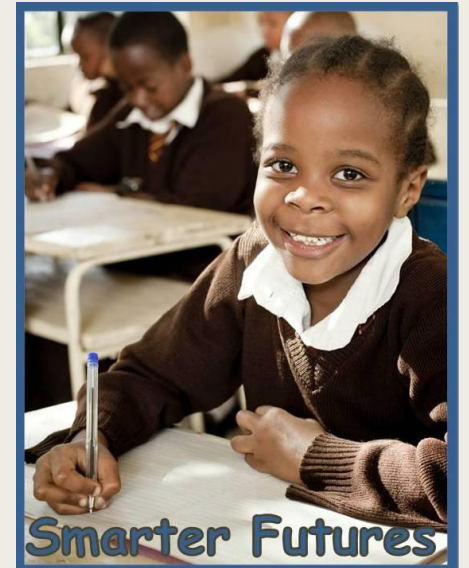
# Food Fortification Legislation and Standards: In practice

Philip Randall [pcubed@mweb.co.za](mailto:pcubed@mweb.co.za)

(with contributions from Quentin Johnson)



**Food Fortification Initiative**  
Enhancing Grains for Healthier Lives



- ***A “Standard” is a document approved by a recognized body that provides, for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, with which compliance is not mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method.***

- ***A “Technical regulation” is a document which lays down product characteristics or their related processes and production methods, including the applicable administrative provisions, with which compliance is mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method.***

- **For the purpose of this Agreement standards are defined as voluntary and technical regulations as mandatory documents. Standards prepared by the international standardisation community are based on consensus. This Agreement covers also documents that are not based on consensus.**

- ***A conformity assessment procedure: “Any procedure used, directly or indirectly, to determine that relevant requirements in technical regulations or standards are fulfilled.”***

- **While both technical regulations and standards are technical product requirements, the main difference between the two is that compliance with technical regulations is mandatory, whereas compliance with standards is voluntary. A law that stipulated that a nominated food must contain a minimum amount of a micronutrient (as is the case with mandatory fortification) is an example of a technical regulation**

**STANDARDS SEEN AS SIMPLER TO  
GET INTO PLACE THAN  
LEGISLATION SO WE TAKE THE  
'EASY' ROUTE AND DO NOT  
SUBJECT OURSELVES TO STRICT  
LEGAL SCRUTINY**

**Arrived by consensus not science**

# Flour Composition

Parameter	Baker's flour	Home baking flour	Biscuit flour	Cracker flour	Self-raising flour	Standard flour	Atta flour	Whole-meal flour	Method of test
Moisture content, max. %,m/m	13	13	13	13	13	13	13	13	ISO 711 or ISO 712
Crude fibre content, max.	1.0	1.0	1.0	1.0	1.0	1.5	2.0	2.0	ISO 5498
Total ash content, max. %,m/m	0.7	0.7	0.55	0.70	2.0	1.10	2.0	2.0	ISO 2171
Residue on sieving through 180 micron- sieve, max. %	0.8	0.8	0.5	0.5	0.8	30.0	55.0	30.0	
Protein content, min. %, m/m	11.0	9.0	8.0	8.0	8.0	11.0	12.0	12.0	ISO 20483



# What does Codex (as of January 2017) say?

- Stan 152 Wheat Flour; Stan 153 Maize Meal
  - *3.2.1 Moisture content 15.5% m/m max*
- Lower moisture limits should be required for certain destinations in relation to the climate, duration of transport and storage.  
Governments accepting the Standard are requested to indicate and justify the requirements in force in their country.

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**FORTIFICATION  
PRESUMABLY REPORTED  
ON THE SAME MOISTURE  
BASIS**

**Yet another complication**

**SOUTH AFRICA –  
WHICH HAD A TECHNICAL  
REGULATION - USED TO MAKE  
IT EVEN MORE COMPLICATED**

**Wheat Flour 14% moisture; Bread 39%  
moisture; Maize Meal 12.5% moisture**

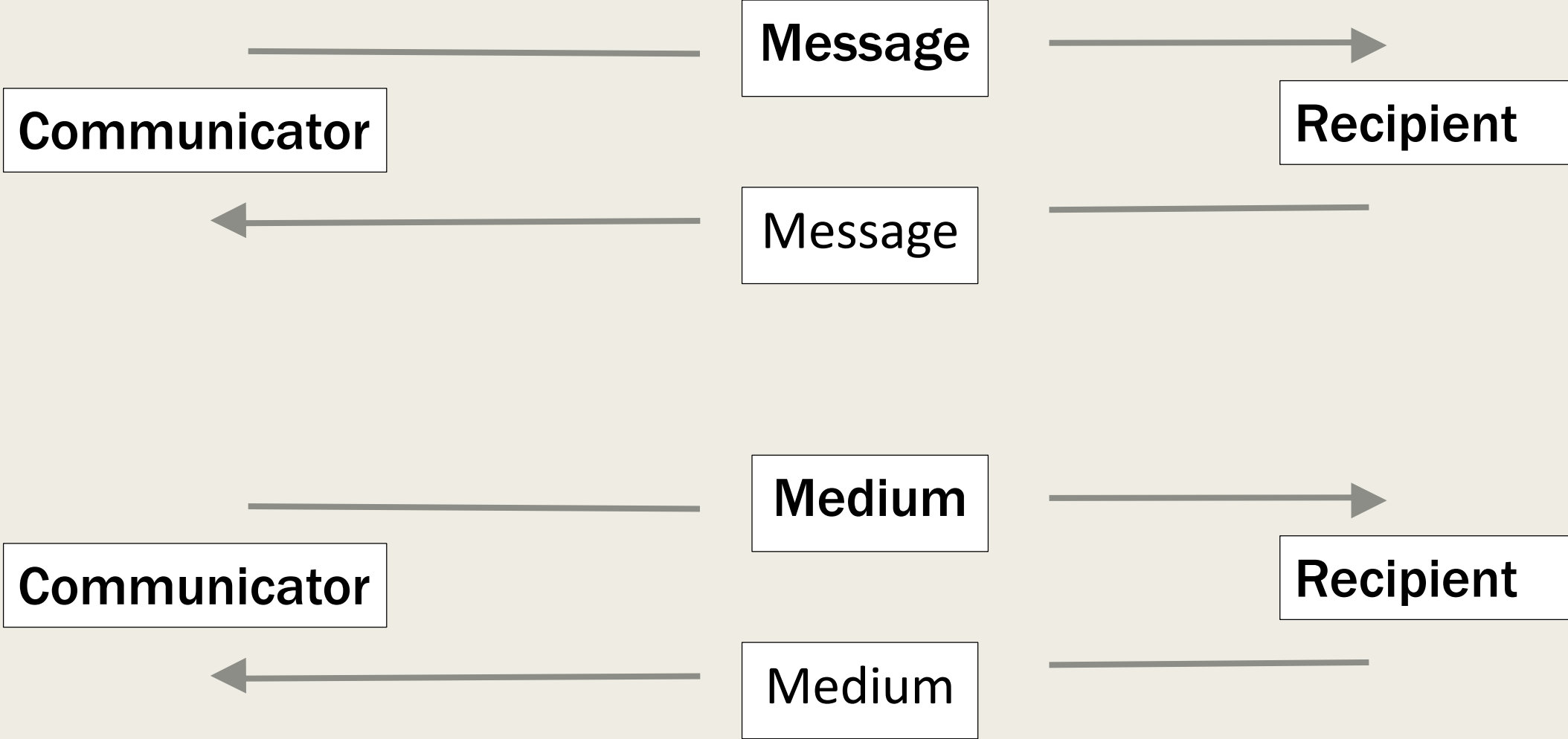
# OCCAM'S RAZOR

## 14<sup>TH</sup> Century

**“Plurality must never be  
posited without necessity”**

# Socrates talking to Phaedrus

- You might suppose that written words understand what they are saying, but if you ask them what they mean they simply return the same answer over and over again
- Once a thing is committed to writing, it circulates among those who understand the subject and those who have no business with it; a writing cannot distinguish between suitable and unsuitable readers. And if it is ill-treated or unfairly abused it always needs its parent to come to its rescue – it is quite incapable of defending or helping itself



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# Methods of Analysis Specified

- How selected?
  - Why were they selected?
  - Are they suitable?
- 
- Who validated the method on each micronutrient for each matrix in YOUR laboratory with a **SPECIFIED** analyst

# Using the wrong methodology

- **Wheat flour shall comply with those maximum mycotoxin limits established by the Codex Alimentarius Commission for this commodity. In particular, total aflatoxin levels in wheat flour for human consumption shall not exceed 10 mcg/kg (ppb) with B<sub>1</sub> not exceeding 5 µg/kg (ppb) when tested according to ISO 16050.**
- **ISO 16050:2003 specifies a reverse-phase high-performance liquid chromatographic method, with immunoaffinity column clean-up and post-column derivatization, for the determination of aflatoxins in cereals, nuts and derived products. The limit of quantification for aflatoxin B<sub>1</sub>, and for the sum of aflatoxins B<sub>1</sub>, B<sub>2</sub>, G<sub>1</sub> and G<sub>2</sub>, is 8 µg/kg .**

# **Label true to point of sale**

- **Achievable?**
- **Where is the evidence?**
- **Distribution chain?**
  
- **To paraphrase one Regulator 'Need to put a name and address on the pack so we know who to blame'**

# Microbiology specifications

- **Extremely tight?**
- **Can we afford Codex?**

**A SEALED BAG TAKEN FROM A  
HOUSEHOLD LEVEL IN AN  
INFORMAL SETTLEMENT AND  
FOUND TO HAVE A HIGH  
MICROBIOLOGICAL LOAD**

**Who is at fault?**

**Why does this apply to micronutrients?**