

QUALITY CONTROL AND MONITORING TOOL FOR SUCCESSFUL FOOD FORTIFICATION PROGRAMS



CONSENSUS MEETING ON THE HARMONIZATION OF REGULATION AND
STANDARDS WITH RESPECT TO FOOD FORTIFICATION IN ECOWAS

Accra, GHANA | 16-17.12.2013

Vitamin premix



Agriculture and cattle



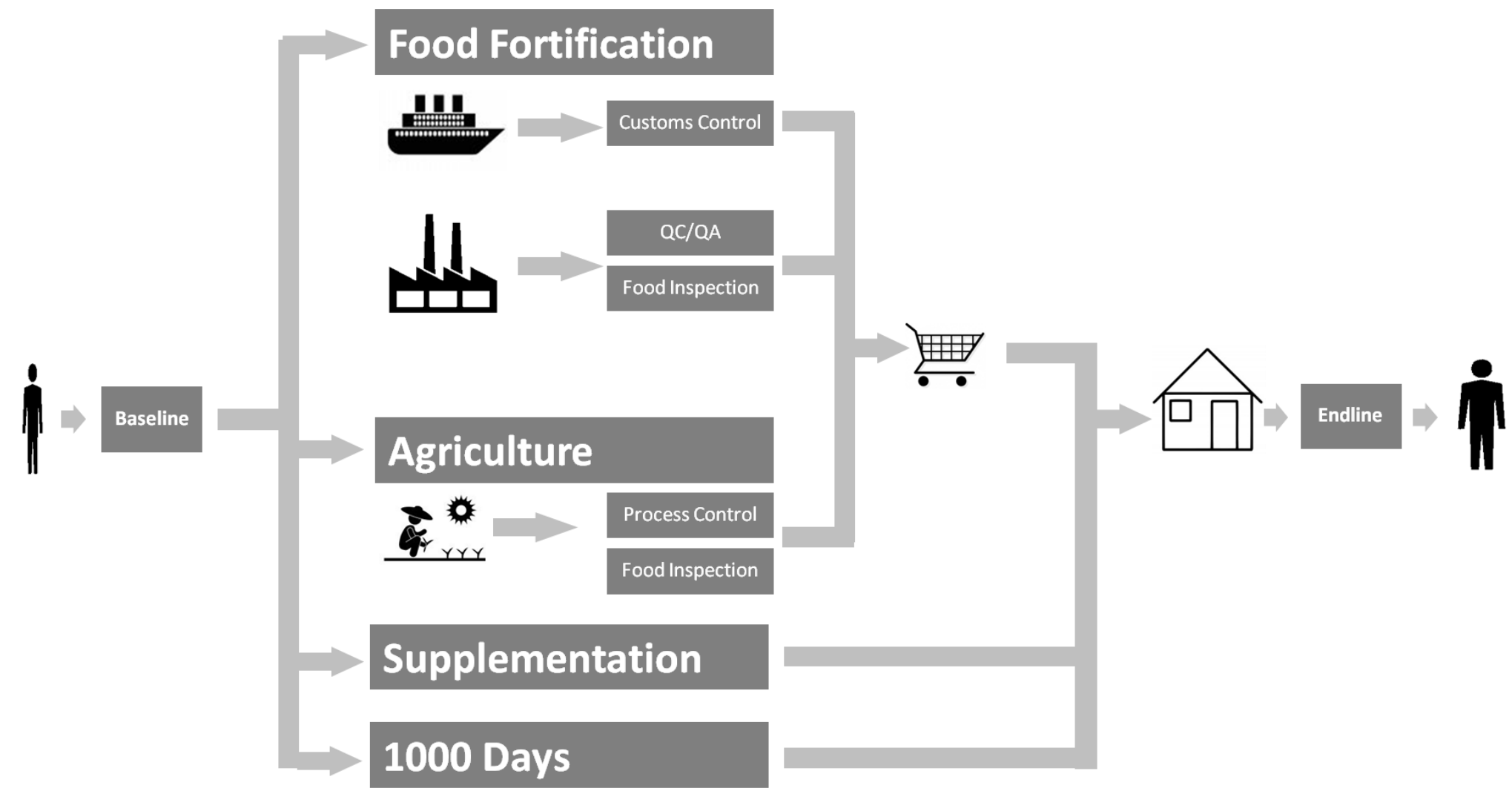
Fortified foods



Humans

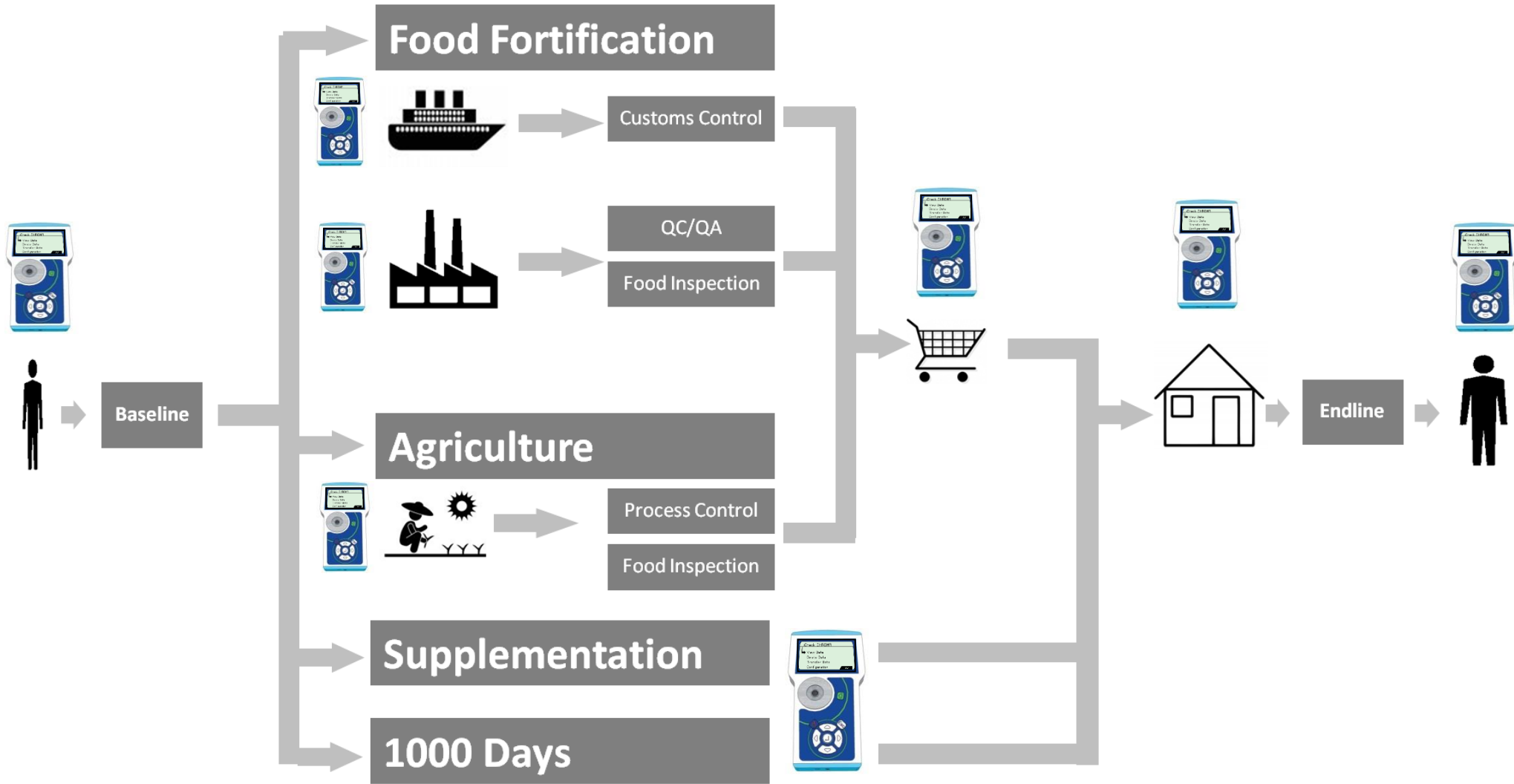


CONTROL OF THE WHOLE VALUE CHAIN FOR SUCCESSFUL FIGHT AGAINST MALNUTRITION



**YOU CANNOT MANAGE
WHAT YOU CANNOT
MEASURE**

BioAnalyt makes real-time monitoring of the entire food value chain possible



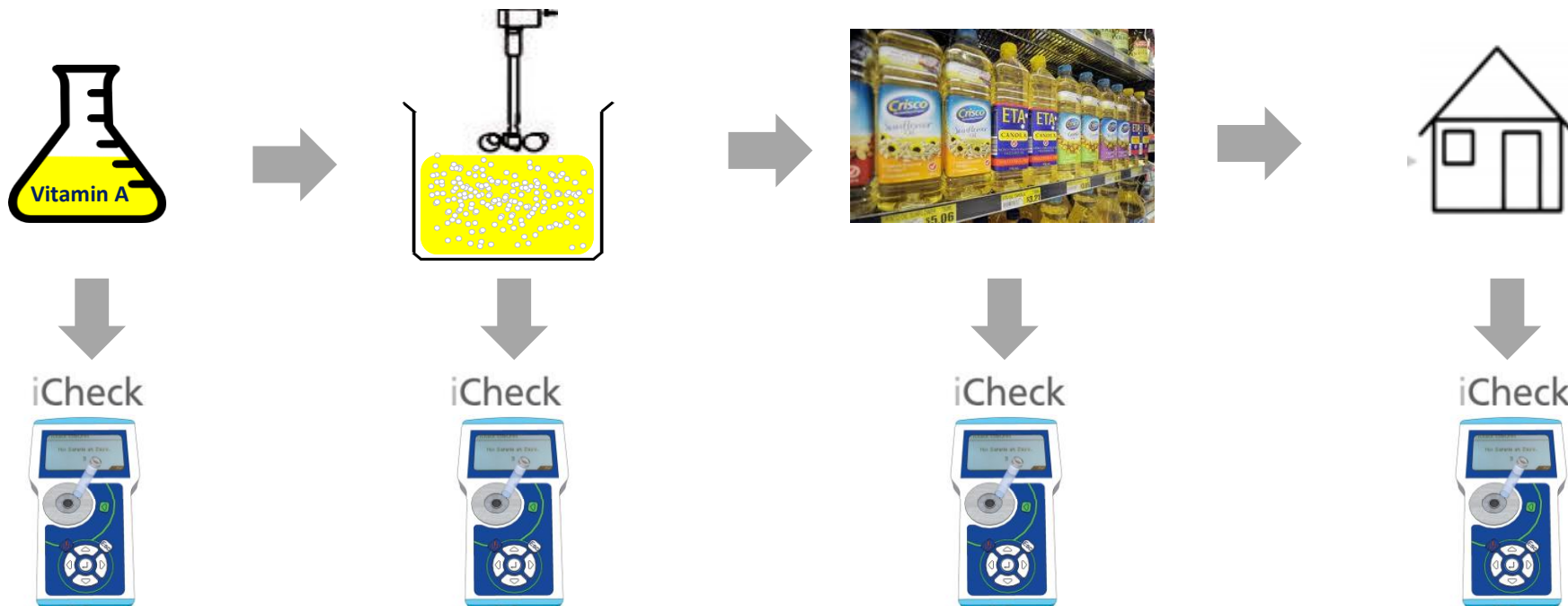
Example: oil fortification with vitamin A

QC of vitamin A at
the production site
→ RAW MATERIAL

QC of vitamin A in oil at
the fortification site
→ HOMOGENEOUS
DISTRIBUTION

QC of vitamin A in oil at
the sales site
→ COUNTRY -SPECIFIC
REGULATIONS

Vit. A in oil in
households
→ CONSUMPTION
LEVELS

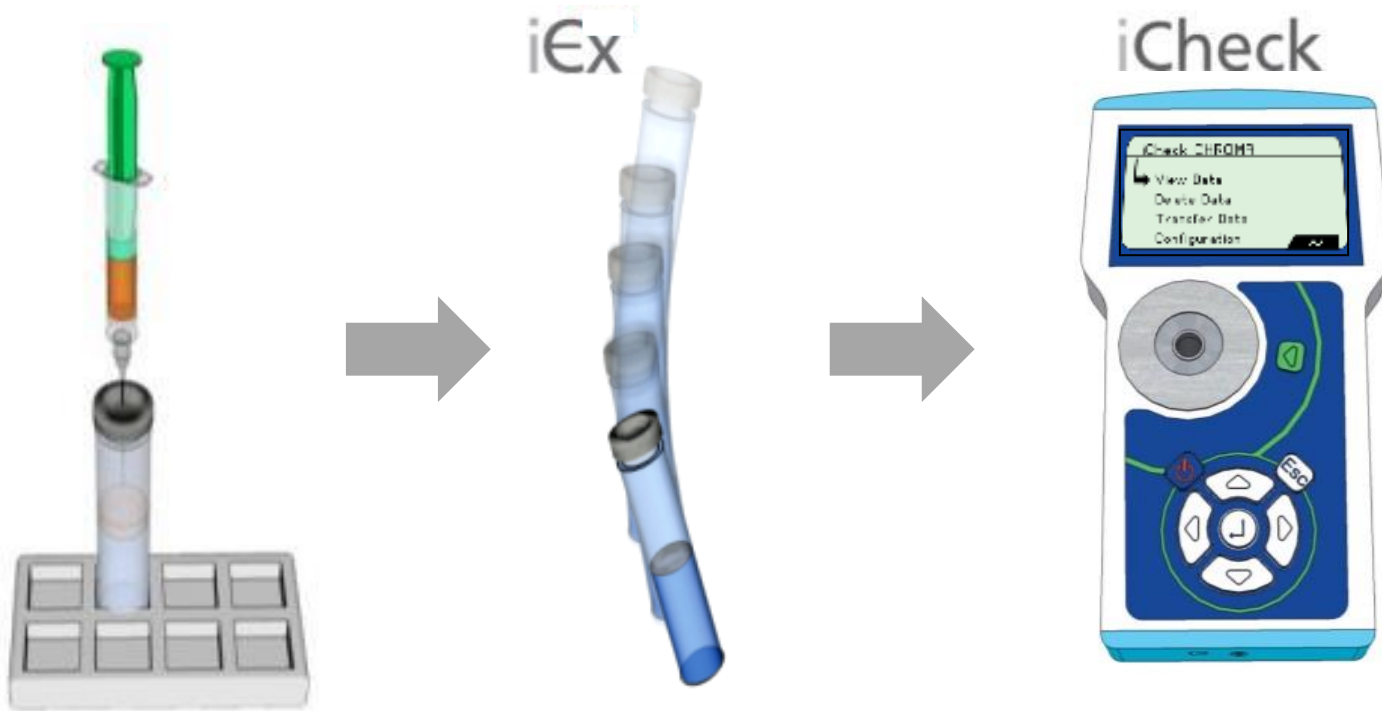


TIME SAVING:
5 minutes vs. 3 weeks

COST SAVING:
4.3 EUR vs. 50 EUR

OUR CUSTOMERS ARE RESEARCHERS, NGOS, LABS PLUS VITAMIN AND FOOD PRODUCERS





1. Injection

2. Reaction

3. Measurement

EXAMPLE: iCheck™ TEST KIT INCLUDES ALL COMPONENTS NEEDED



iCheck™ CHROMA case includes:

- iCheck™ CHROMA device
- Battery charger and 4 rechargeable batteries
- USB-cable for data transfer
- Vial rack
- CD with product documents

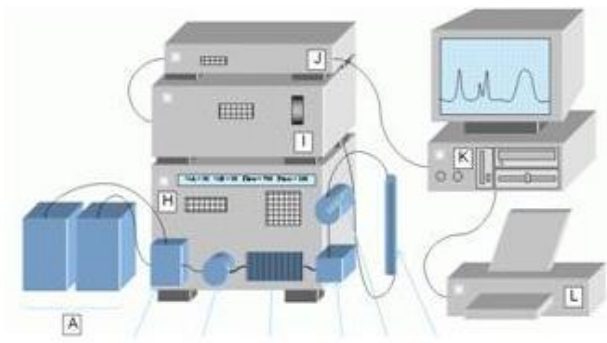


The iEx™ ELAN package includes:

- 100 iEx™ ELAN vials for 100 vitamin A determinations in oil
- 100 applicators (syringes and needles)
- iEx ELAN™ User instructions
- **Shelf life:** 12 months @ 20 – 30° C

VITAMIN A
IN OIL

VITAMIN A



Reference method: HPLC

- Fixed costs:
 - ✓ Start at **25 000 EUR** for equipment
 - ✓ Technical highly trained staff
- Running costs:
 - ✓ **50.00 EUR** per analysis
 - ✓ Maintenance costs (1,200 EUR/ year)

iCheck™
FLUORO
iCheck™
CHROMA



iCheck™ test kit

- Fixed costs:
 - ✓ from **4 855 EUR** for equipment
 - ✓ 2-hours trained staff
- Running costs:
 - ✓ from **4.59 EUR** per analysis
 - ✓ No maintenance

TIME SAVING:
5 minutes vs. 2 weeks

COST SAVING:
4.59 EUR vs. 50 EUR



Reference method: AAS

- Fixed costs:
 - ✓ Start at **40 000 EUR** for equipment
 - ✓ Technical highly trained staff
- Running costs by lab analysis:
 - ✓ **45.00 EUR** per analysis
 - ✓ Shipment costs



iCheck™ IRON test kit

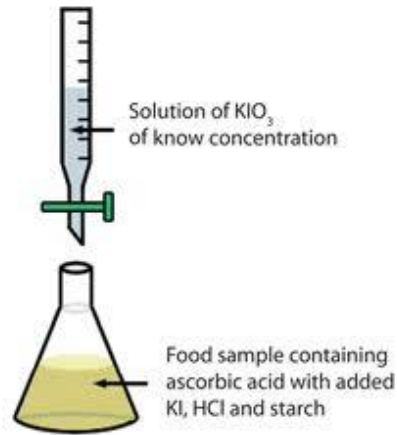
- Fixed costs:
 - ✓ from **2 407 EUR** for equipment
 - ✓ 2-hours trained staff
- Running costs:
 - ✓ from **4.21 EUR** per analysis
 - ✓ No maintenance

IRON

ZINC

TIME SAVING:
60 minutes vs. 2 weeks

COST SAVING:
4.2 EUR vs. 45 EUR



Reference method: Titration

- Fixed costs:
 - ✓ **400 EUR** for equipment
 - ✓ Technical highly-trained staff
- Running costs:
 - ✓ **from 8.00 EUR** per analysis
 - ✓ No maintenance.



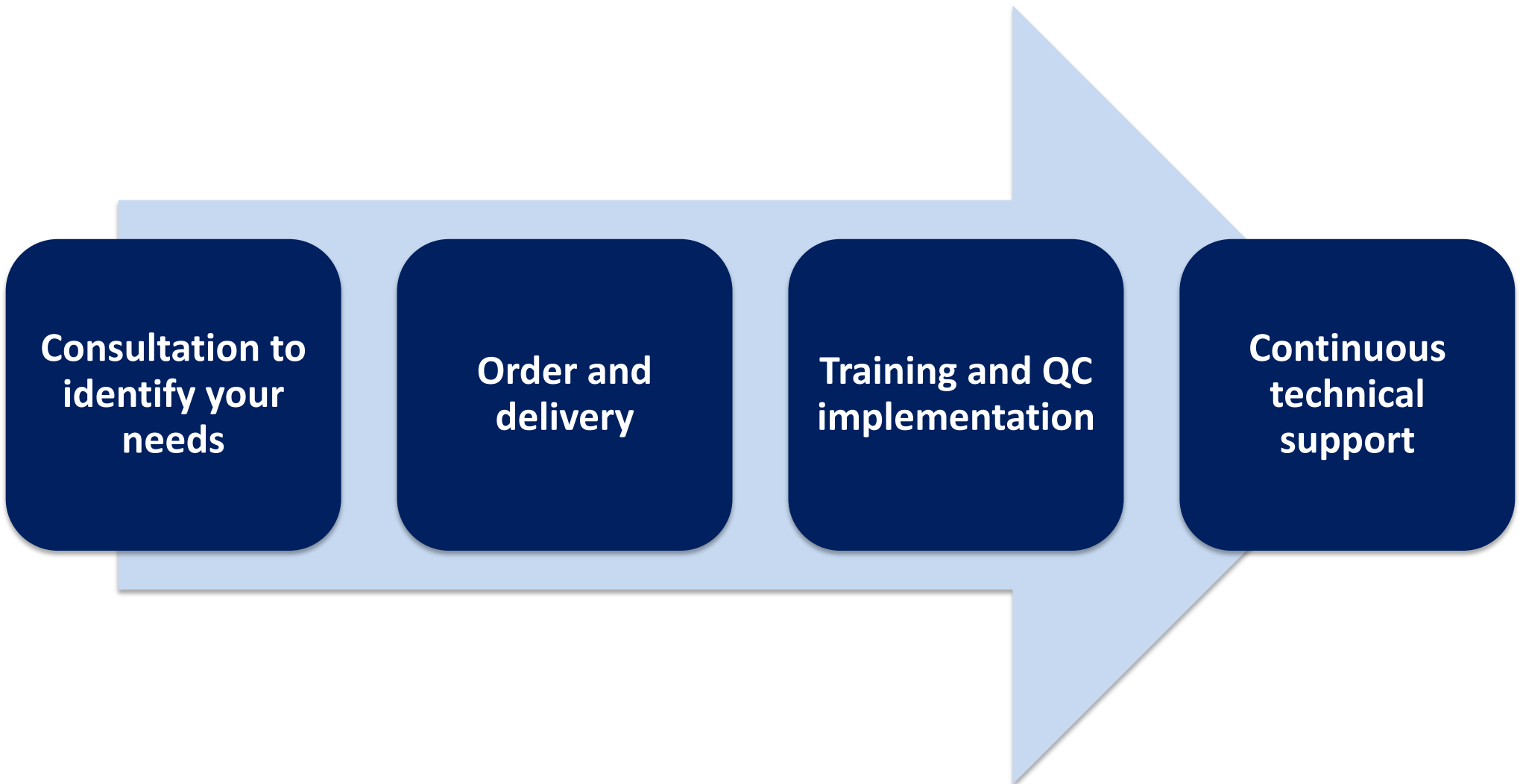
iCheck™ IODINE test kit

- Fixed costs:
 - ✓ **1 999 EUR** for equipment
 - ✓ 2-hours trained staff
- Running costs:
 - ✓ **2.22 EUR** per analysis
 - ✓ No maintenance.

IODINE

TIME SAVING:
5 minutes vs. 1 week

COST SAVING:
2.2 EUR vs. 5 EUR

A diagram showing a four-step process flow. Four dark blue rounded rectangular boxes are arranged horizontally, each containing a step name. These boxes are set against a light blue background that forms a large arrow pointing to the right. The steps are: 1. Consultation to identify your needs, 2. Order and delivery, 3. Training and QC implementation, and 4. Continuous technical support.

**Consultation to
identify your
needs**

**Order and
delivery**

**Training and QC
implementation**

**Continuous
technical
support**

	iCheck [™] FLUORO	iCheck [™] CHROMA	iCheck [™] CAROTENE	iCheck [™] IRON	iCheck [™] ZINC	iCheck [™] IODINE
Analyte	Vitamin A	Vitamin A in oil	Total carotenoids	Iron	Zinc	Iodine
Matrix	Premix, milk, flour, sugar, solid foods	Palm, sunflower, peanut, coconut, and rapeseed oils	Premix, vegetables, drinks, solid food, cattle blood	Premix, flour, soy & fish sauces, drinks, solid foods	Premix, flour	Salt
Matrix in development	Blood (delivery 2014)	Soy and cottonseed oils (delivery 2014)	Corn	Rice	Soil, cassava & maize flour	Urine
Fortificant type	Retinyl palmitate, retinyl acetate, retinol	Retinyl palmitate	Carotenoids	Ferrous iron, NaFeEDTA, ferric pyrophosphate	Zinc oxide, zinc sulfate, zinc chloride	Pottassium iodate
Measurement range	50 – 3000 µg RE/L	3 - 30 mg RE/kg	0.20 - 25.0 mg/L	1.5 – 12.0 mg/L	0.5 – 3.0 mg/L	1.0 – 13.0 mg/L
Precision	>90%	>90%	>90%	>90%	>90%	>95%
Validation	Validated against HPLC (Sight&Life, VoL. 25 (3), 2011)	Validated against HPLC (Int J Vit Nutr Res, 2011)	Validated against HPLC (Vet. Clin. Pathol., 2011)	Validated against AAS (Food&Nutr. Bul., 2013)	In progress	Validated against iodometric titration (Food&Nutr. Bul., 2012)



THANK YOU!

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