Analysis of Plant Material, Storage, and Diet Preparations

SEVENTH FRAMEWORK PROGRAMME

1. Analyses of plants and diets

Current state:

- ongoing preparation /call for tenders

Strategy:

- employ certified labs
- initial limited analyses of maize harvests assessing quality (mycotoxins, non-nutrients …)
- following OECD Consensus document
- full set of analyses (→ GRACE) for maize commodity used for diet preparation, 1st batch of diets.
- reduced analyses for follow up batches

1. Analyses of plants and diets

Analyte	preTest harvest	Maize	Diet (1st batch)	Diet (further batches)
Proximates, fibres	Y	Y	Y	(Y)
Fatty acids	No	Y	Y	(selected)
Aminoacids	No	Y	Y	(selected)
Carbohydrates	raffinose	Y	Y	(selected)
Minerals	No	Y	Y	(selected)
Vitamins, carotenoids	No	Y	Y	(selected)

1. Analyses of plants and diets

Analyte	preTest harvest	Maize	Diet (1st batch)	Diet (further batches)
Anti-nutrients				
Phytic acid	Y	Y	Y	(selected)
Trypsin-Inhibitor	Y	Y	Y	(selected)
Lectins	No	Y	Y	(selected)
Secondary compounds				
Sterols	No	Y	Y	(selected)
Phenolics	No	Y	Y	(selected)
Furfural	No	Y	Y	(selected)
Isoflavones	No	No	Y	(selected)

1. Analyses of plants and diets

Analyte	preTest harvest	Maize	Diet (1st batch)	Diet (further batches)
Contaminants				
Heavy metals	Y	Y	Y	(selected)
Dioxins, PCBs	Y	Y	Y	(selected)
PAHs	No	Y	Y	(selected)
Nitrosamines	No	Y	Y	(selected)
Nitrate, nitrite	No	Y	Y	(selected)
Pesticides	applied p.	Y	Y	(selected)

1. Analyses of plants and diets

Analyte	preTest harvest	Maize	Diet (1st batch)	Diet (further batches)
Mycotoxins				
DON	Y	Y	Y	(Y)
Aflatoxins	Y	Y	Y	(Y)
Fumonisine (B1-3)	Y	Y	Y	(Y)
Ochratoxin	Y	Y	Y	(Y)
HT-2 toxin	Y	Y	Y	(Y)
T2-toxin	Y	Y	Y	(Y)
Zearalenone	Y	Y	Y	(Y)

1. Analyses of plants and diets

Analyte	preTest harvest	Maize	Diet (1st batch)	Diet (further batches)
Microbiology	No	No	Y	(selected)
GMOs				
quant: NK603, cp4 epsps	Y	Y	Y	(Y)
quant: MON810, cry1Ab	Y	Y	Y	(Y)
Nos, S35 ...	Y	Y	Y	(selected)
Event screen	GMmaize	Y	Y	(selected)
plant DNA, CMV	No	Y	Y	(selected)

2. Storage conditions

Current state:

- storage facility for maize commodities rented
- HACCP compliance
- Storage conditions: Big bags, 7°C, relative humidity: 69%
- Transport to feed producer batch wise if necessary

3. Diet preparation

Current state:

- preparation /call for tenders

Strategy:

- select harvest of best quality for feed production
- certified feed supplier (GLP ...)
- comparable preparation/composition as used in GRACE
- batch wise produced and shipped to SZU

3. Diet preparation

Diet composition:

- no GMO except test material
- no compounds from animals
- calculated for Wistar Han RCC rats
- minimized soy meal

Preparation:

- batch wise → analyses (costs)
- gentle processing (avoid degradation of compounds; irradiation of batches for disinfection)