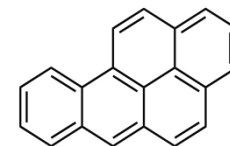


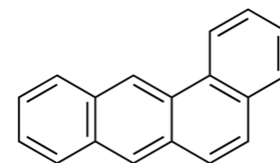
Polycyclic aromatic hydrocarbons (PAHs)

PAHs

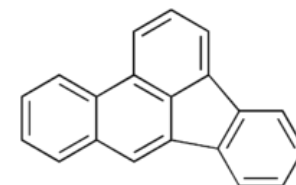
- Are formed in incomplete burning, e.g. in forest fires, smoking
- In smokers tobacco is the biggest source of PAHs, among others food is the biggest source
- PAHs are lipophilic



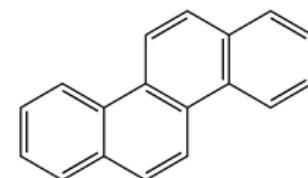
Benzo[a]pyrene



Benz[a]anthracene



Benzo[b]fluoranthene



Chrycene

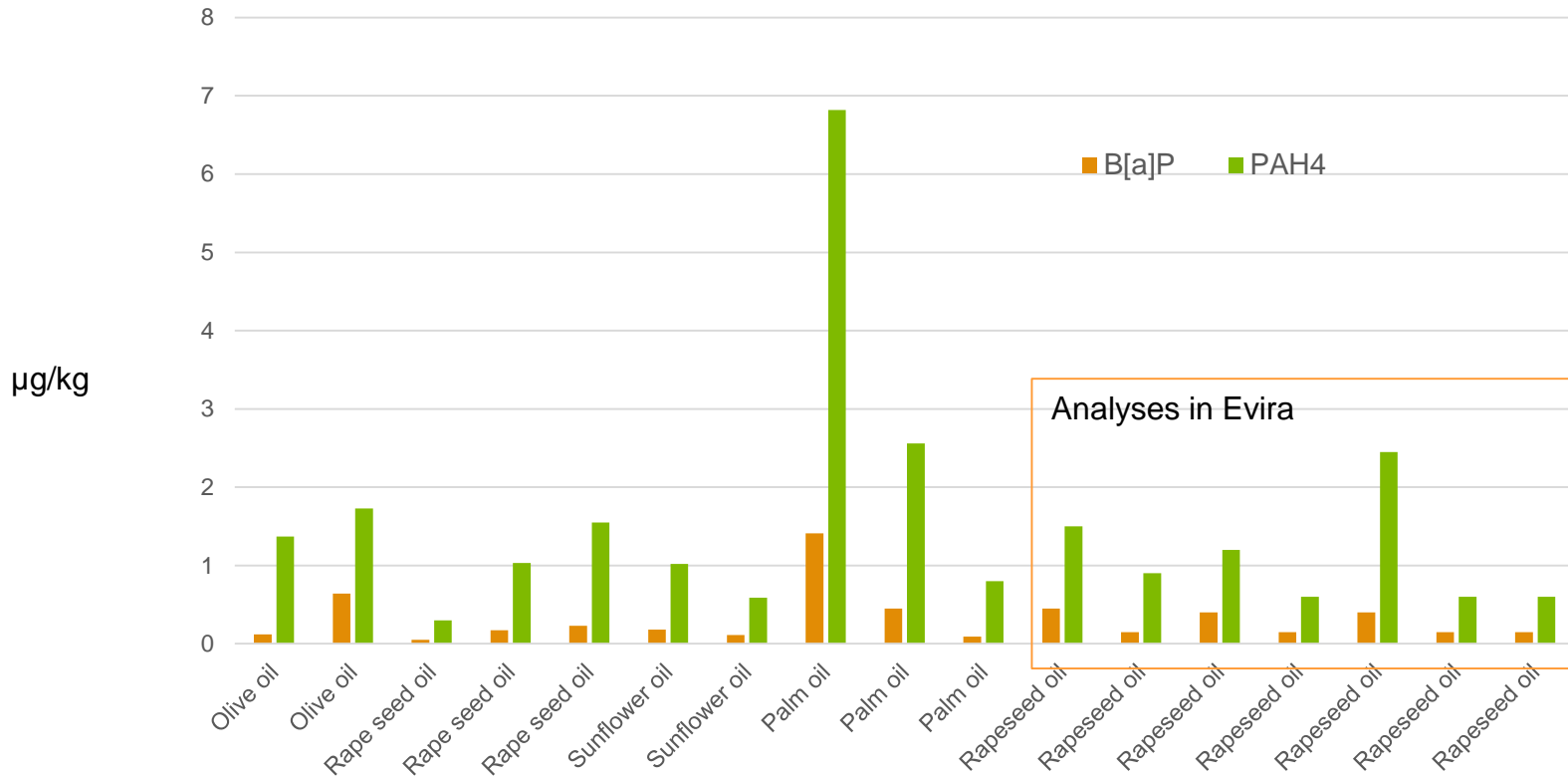
PAHs

- Altogether 15 PAHs are defined as carcinogenic by IARC
- EFSA has defined PAH4 and PAH8 sets
- PAH4s: benzo[a]pyrene, chrysene, benz[a]anthracene, benzo[b]fluoranthene
- PAH4 set is used in most European analyses
- EU legislation has limit values in fish and meat for benzo[a]pyrene and PAH4

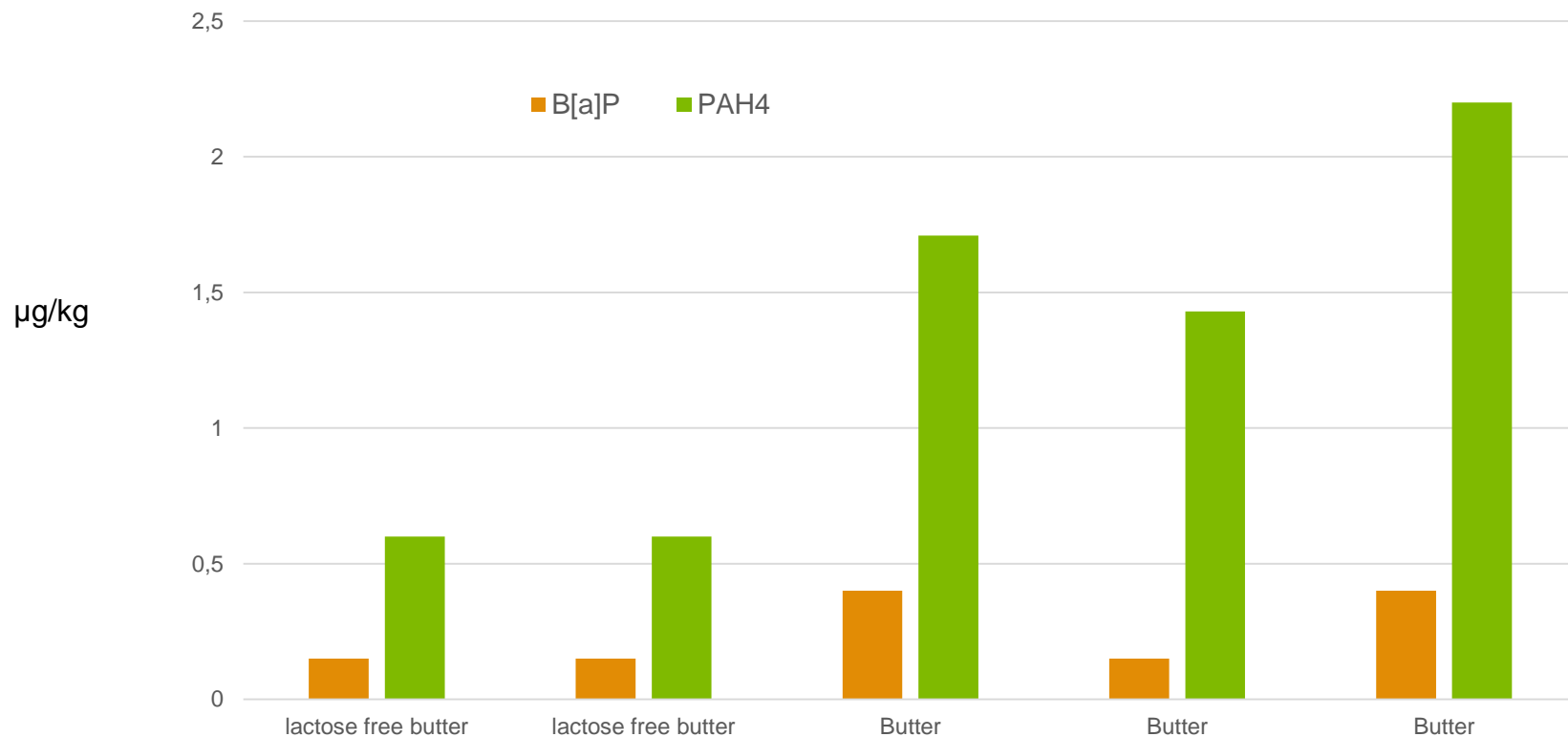
Risk assessment of PAHs in food

- Hazard identification and dose response setting:
 - EFSA Opinion
- Food concentration data: literature, old data in Evira, new analyses
- Old analyses in 2011: smoked fish, meat, and sausages (n=210)
- New analyses: bread (n=20), domestic fish smoking (n=15, results not yet ready), ready-to-eat breakfast cereals (n=10), butter (n=5), margarine (n=5), rape seed oil (n=5), dried fruits and nuts (n=5)
- Level of detection (LOD)=0,3 µg/kg, level of quantification (LOQ)=0,8-0,9 µg/kg for each PAH
- Results presented for PAH4 and benzo[a]pyrene, in middlebound values (LOD/2, LOQ/2)

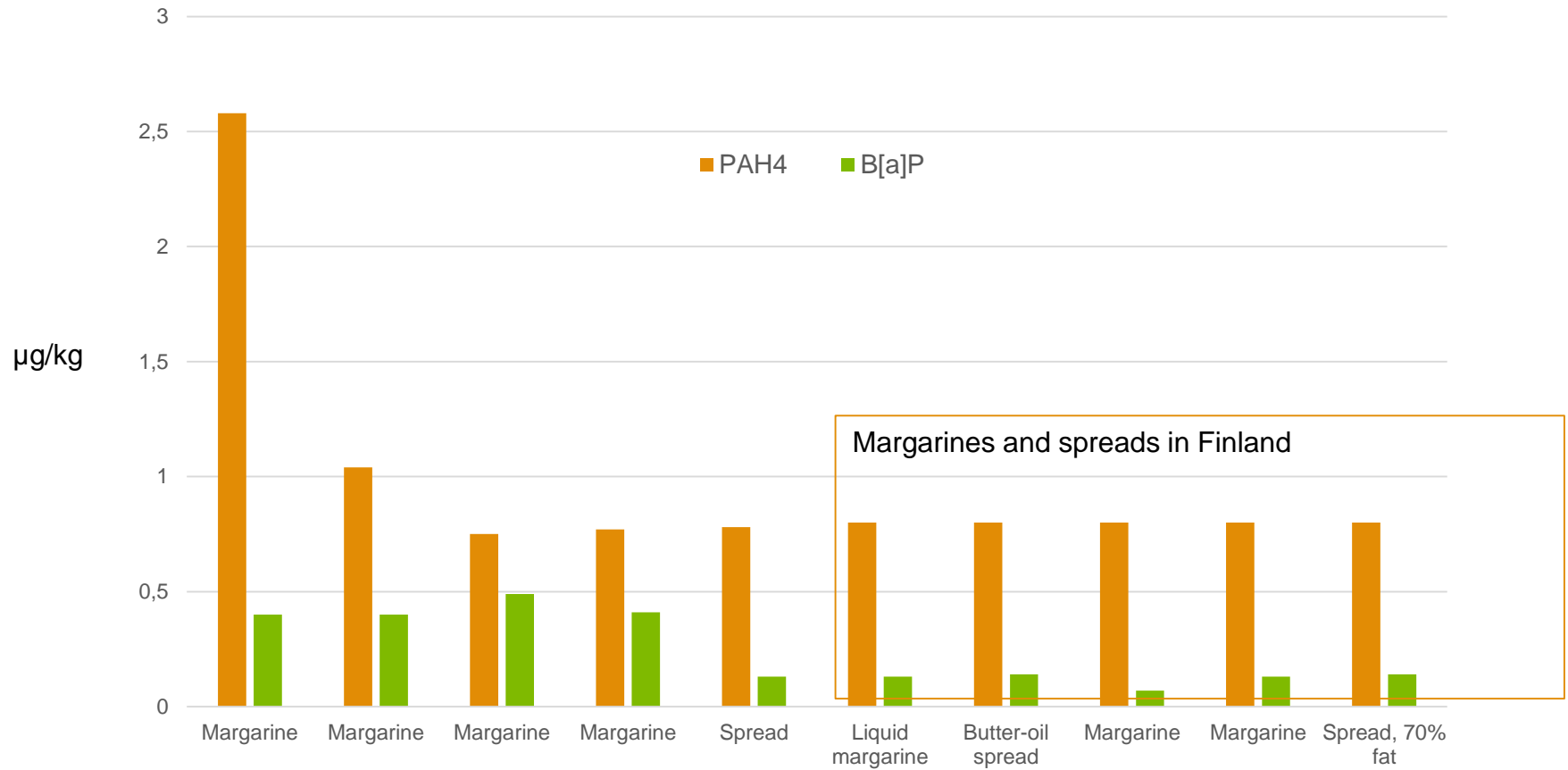
PAHs in vegetable oils



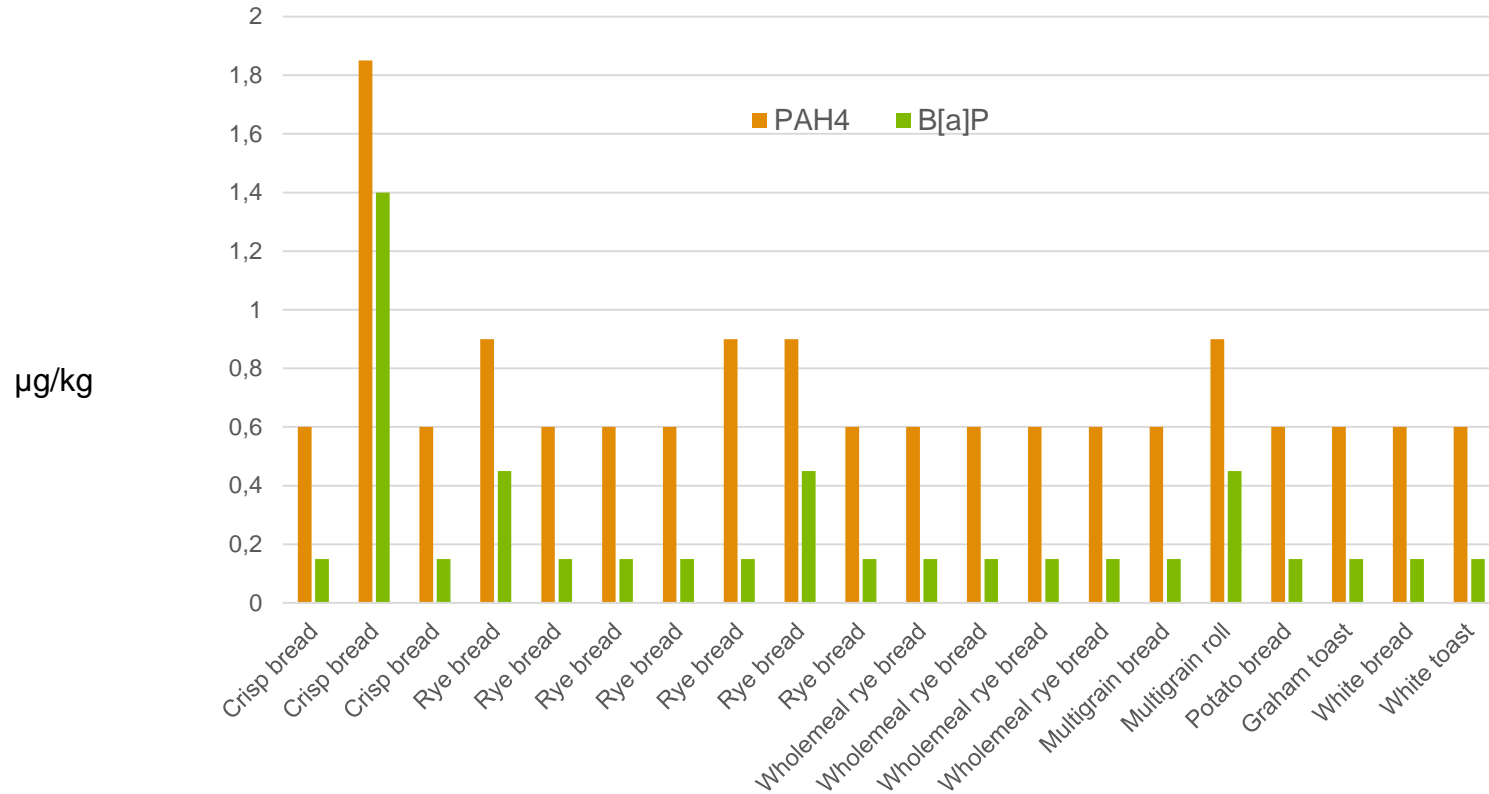
PAHs in butter (Evira)



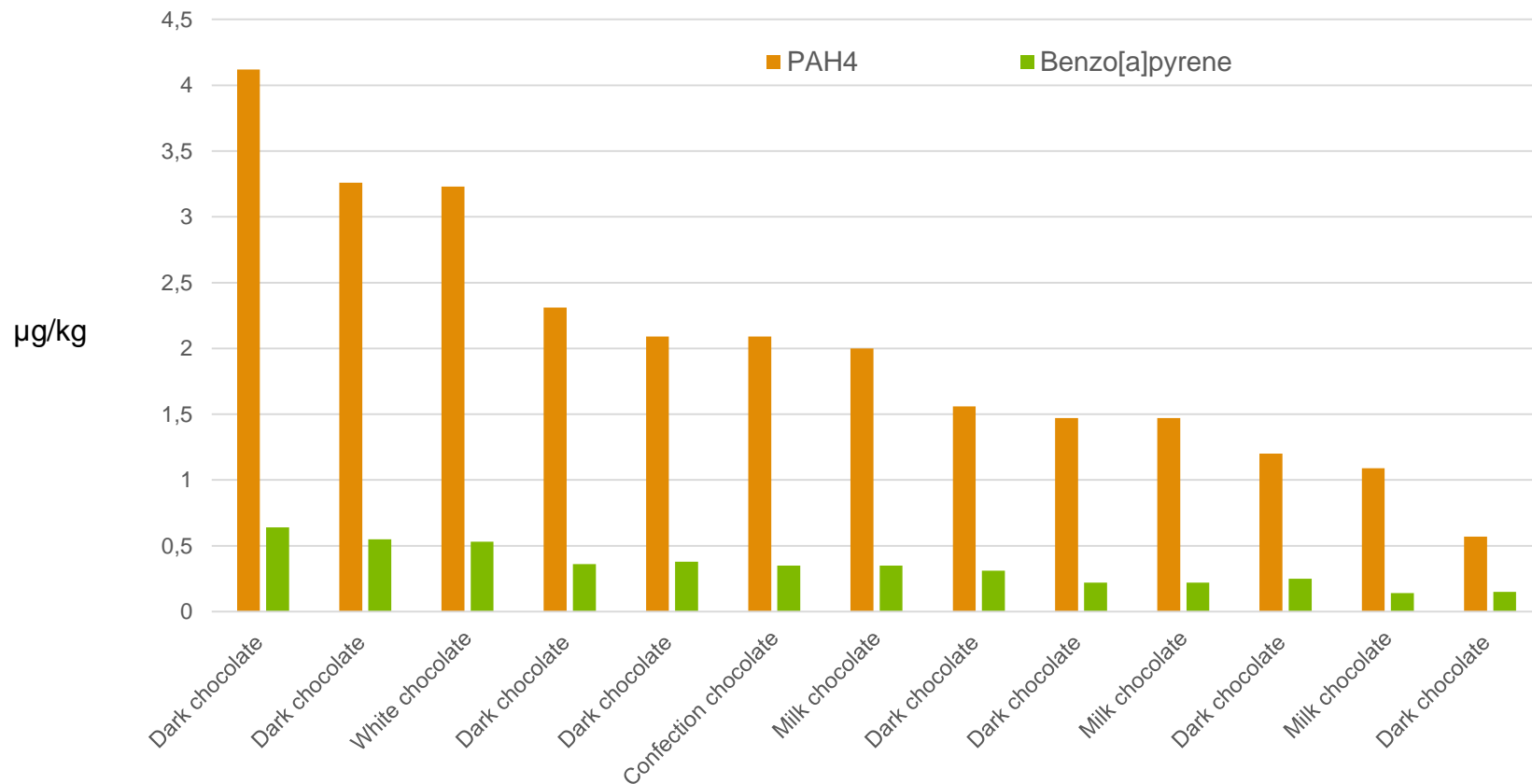
PAHs in margarines and spreads



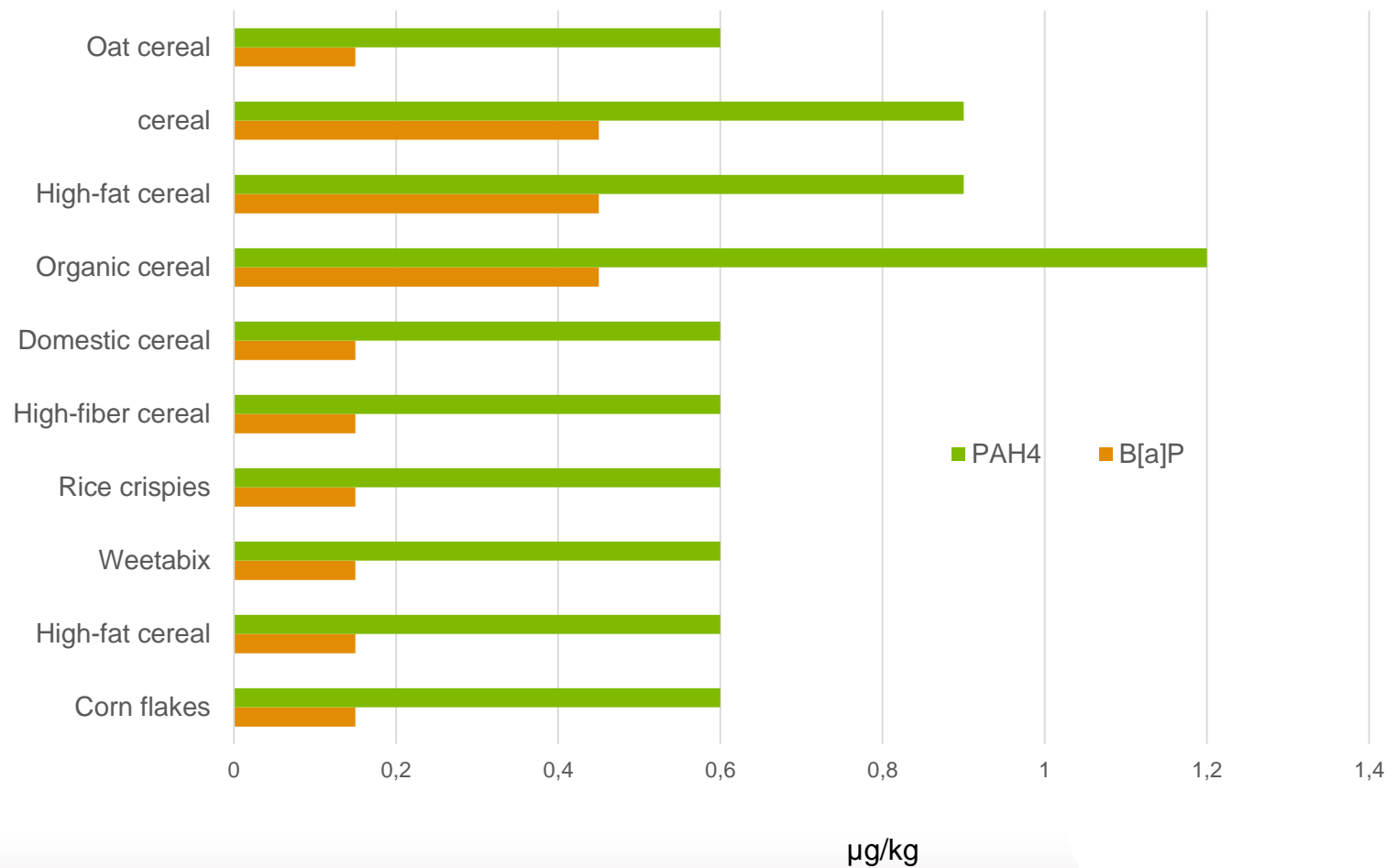
PAHs in bread (Evira analyses)



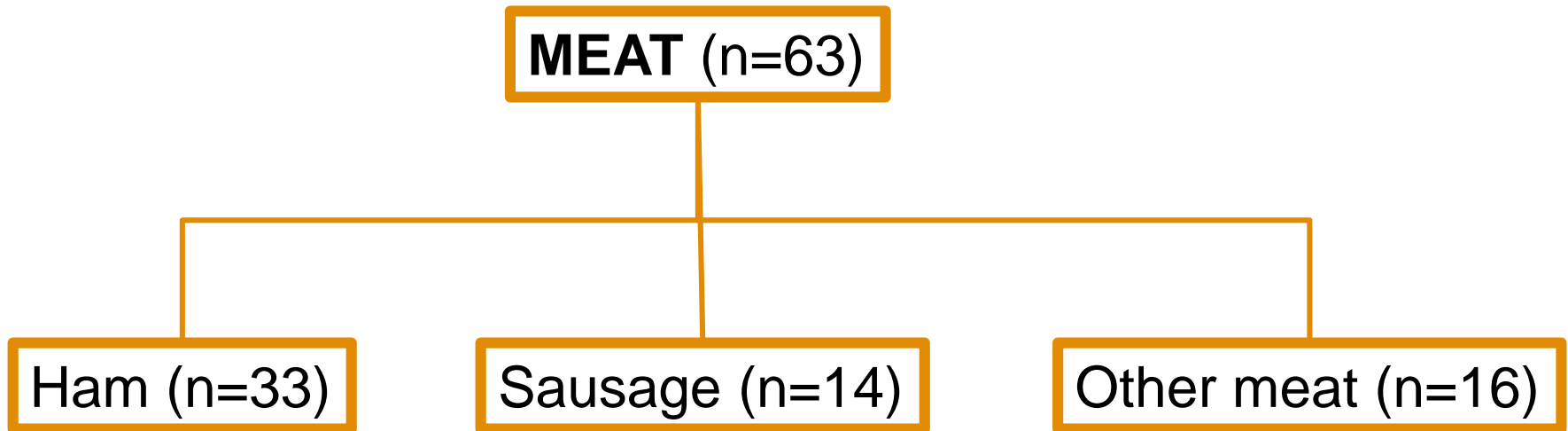
PAHs in chocolate (National Food Agency, Sweden)



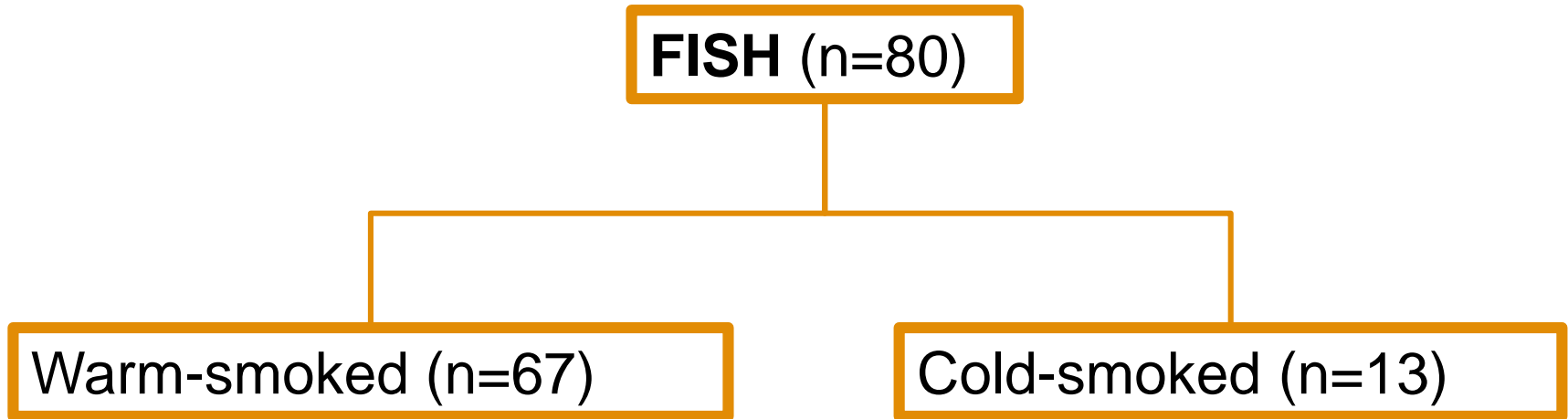
PAHs in ready-to-eat breakfast cereals (RTEBF) (Evira)



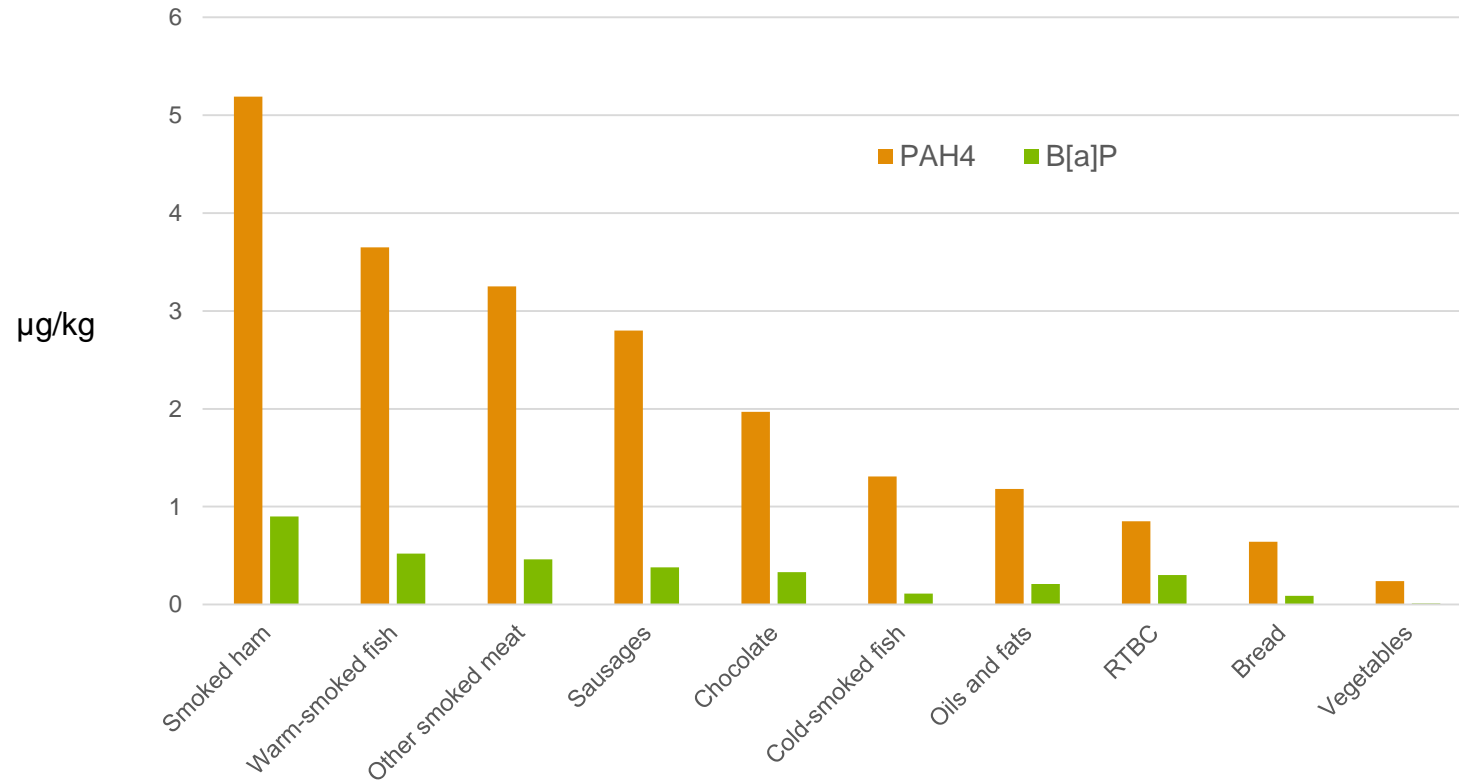
Classification of smoked meat products based on PAH concentrations



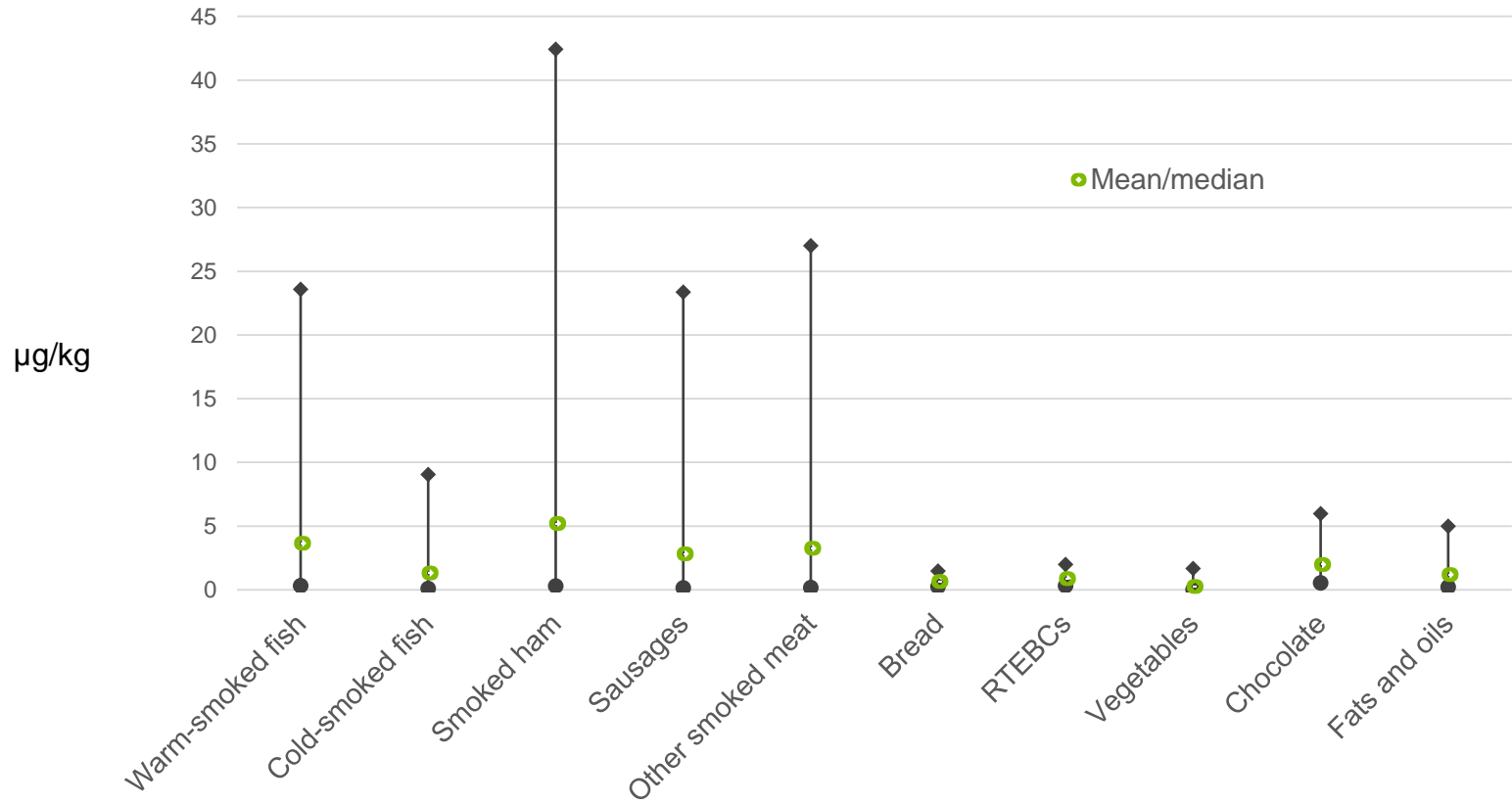
Classification of smoked fish products based on PAH concentrations



Summary on average PAH concentrations in foods



Summary of estimated PAH4 concentrations in foods



Summary of estimated B[a]P concentrations in foods

