Environmental risk assessment of agriculture soils towards food safety and food security requirements
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**SCENARIO**
The organic carbon (OC) content of agriculture soils is acknowledged as a key factor to guarantee the food security. Biosolids from civil wastewater treatment plants (WWTPs) have been proposed as a direct OC source, and may enter up to 35% in the composition of other top soil improvers (TSI) such as digestates, and mixed composts. On Mediterranean soils with an averaged OC content of 50 t/ha, OC inputs from TSI may reach 10 t/ha/year. The driving force on TSI consists on the regular use of WWTPs-derived TSI. The pressure results from the soil burden of bioaccumulative persistent organic pollutants, and other chemicals that concentrate in biosolids due to their high affinity for the OC (KOC). Impact on the food chain and related intakes.

**BACKGROUND INFORMATIONS**
In Mediterranean grazing herds, top soil intake ranges between 6 and 20% of the daily forages dry matter intake. In laying hen: 20-60 g soil/head/day (worms included).

**EQS FOR SELECTED POPS IN AGRICULTURAL SOIL TAILORED ON DAILY FARMING, ACCOUNTING FOR RELATIVE INTAKES (RRV) AND FOR MAXIMUM RESIDUE LIMITS (ML). BOXED AREA INDICATE BASELINE SOIL CONTAMINATION – FOOD SAFETY & SECURITY**

**EQS FOR THE ANTIMICROBIAL OXYTETRACYCLINE IN EGGS FROM RURAL FLOCKS – FOOD SAFETY**
- Soil contamination 10 – 100 mg/kg dm
- Soil intake = 60 g/head/day (50% of feed dry matter intake)
- Egg production = 50 g/head/day
- COR soil-to-egg = 0.0033
- Expected concentration in egg: 40 – 400 ng/g
- Maximum Residue Level= 100 ng/g
- LOQ of relevance for organic claims = 10 ng/g

**TO CONCLUDE,**
EQS for agriculture soil tailored on food security/food safety are envisaged both for rural and urban farming systems. Such EQS may represent the starting point for the definition of the End-of-Waste criteria referred to top improvers.
Such criteria should account for the health risk from the combined toxicity of chemical pollutants, pharmaco-resistance informations and human and animals pathogens, under a global health perspective.