ANTI-SMOKING EDUKIT 2 – CIGARETTE BUTTS

Short description and schemes for performance of the experiments



ANTI-SMOKING EDUKIT 2 – CIGARETTE BUTTS

Three simple experiments

for determination of the **effects of cigarette butts** on :

1. Life in freshwater

A rapid test with observations already after 30 minutes

2. Life in seashores and seawater

A test with observations <u>after 24 hours</u>

3. Life in soils

A test with observations after 2 days

Collection of cigarette butts and leaching out in water



EXPERIMENT 1:

Test with a small freshwater animal (a rotifer)





Addition of water



Dry inert rotifer

(< 1 mm)

Reactivated swimming rotifer

(1 mm)





Observation under the microscope after half an hour





View of the rotifers under the microscope



Inert rotifers on and around the filter disc immediately after addition of water



Active rotifers half an hour after addition of water

CONCLUSIONS



<u>Good "reactivation</u>" of the inert rotifers in tapwater The tap (fresh)water is <u>not toxic for the organisms</u>





No "reactivation" of the inert rotifers in the leachate of the cigarette filter The chemical compounds in Cigarette butts are very toxic for the organisms



EXPERIMENT 2 :

Test with a small marine crustacean (a brine shrimp)





Addition of seawater



Dry brine shrimp eggs (< 1 mm) Swimming brine shrimp larva (1 mm)

PERFORMANCE





View of the brine shrimps under the microscope





Start of hatching of the brine shrimp eggs

Swimming brine shrimp larvae

CONCLUSIONS



<u>Good hatching</u> of the brine shrimp eggs in seawater Seawater is <u>not toxic</u> for the marine organisms





No hatching of the brine shrimp eggs in the seawater leachate of the cigarette filter

The chemical compounds in **cigarette butts** are <u>very toxic</u> for the marine organisms



EXPERIMENT 3:

Test with plants (cress)



Addition of water



Seeds of cress

Cress plants

PERFORMANCE



Placing of the 2 zipper bags vertically between 2 books



OBSERVATIONS



After 2 days



After 5 days

CONCLUSIONS



<u>Good germination and growth</u> of cress seeds in tapwater Tap (fresh)water is <u>not toxic for the plants</u>





No germination nor growth of cress seeds in the leachate of cigarette filters

The chemical compounds in **cigarette butts** are <u>very toxic</u> for the plants



GENERAL CONCLUSION OF THE ANTI-SMOKING EDUKIT 2 – CIGARETTE BUTTS EXPERIMENTS



All 3 tests clearly show that the chemicals which leach out from <u>Cigarette butts</u> are toxic and have <u>deleterious effects</u> on the organisms living in water and in soil



KEY MESSAGE OF THE ANTI-SMOKING EDUKIT 2 – CIGARETTE BUTTS FOR YOUNGSTERS

PREVENTION IS BETTER THAN CURE and whoever does not smoke will not only protect his/her own health, but also that of the environment

