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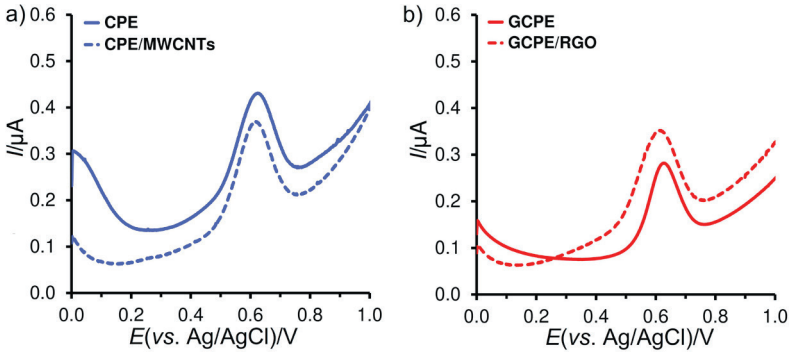


**Fig. S1.** Square wave voltammograms of 0.5 μmol/L 2-chlorophenol obtained in 0.1 mol/L AcB (pH=4) with $\varphi$(EtOH)=5 % at different carbonaceous composite electrodes in brewing water at $E_{step}$=2.5 mV, $E_{ampl}$=25 mV and $f$=4 Hz: a) CPE=carbon paste electrode, MWCNTs=multi-walled carbon nanotubes, b) GCPE=glassy carbon paste electrode, RGO=reduced graphene oxide. AcB=acetate buffer

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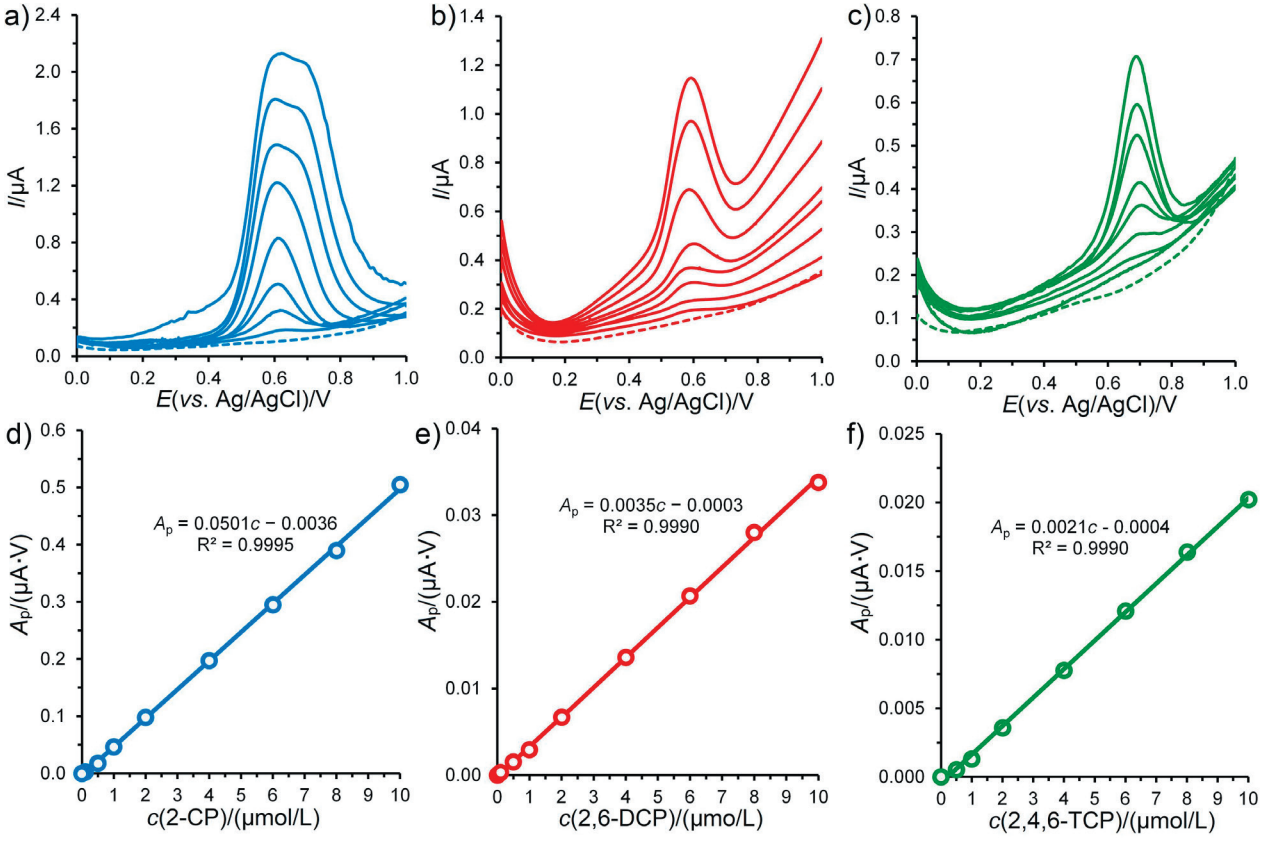


**Fig. S2.** Square wave voltammograms of tap water with 0.1 mol/L AcB (pH=4) and $\varphi$(EtOH)=5 % spiked with $c$(chlorophenol, CP)/(μmol/L): 0 (dashed line), 0.1, 0.5, 1, 2, 4, 6, 8 and 10 (solid lines), a) 2-CP, b) 2,6-DCP, c) 2,4,6-TCP obtained at GCPE, CPE/MWCNTs and GCPE/RGO, respectively, at $E_{step}$=2.5 mV, $E_{ampl}$=25 mV and $f$=4 Hz. The corresponding calibration curves (d, e and f) are shown below. GCPE=glassy carbon paste electrode, CPE/MWCNTs=CPE modified with $w$=5 % multi-walled carbon nanotubes, and GCPE/RGO=glassy carbon paste enriched with $w$=5 % reduced graphene oxide. CP, DCP and TCP=chlorophenol, di- and trichlorophenol, respectively

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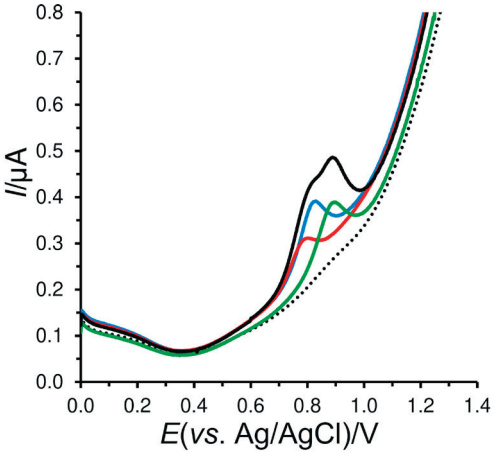


**Fig. S3.** Anodic square wave voltammograms of 0 (black dotted), 1 μmol/L (solid lines) 2-CP (blue) 2,6-DCP (red), 2,4,6-TCP (green) and their equimolar mixture (black curve) obtained at GCPE in 0.1 mol/L acetate buffer (pH=4.5) at $E_{step}$=2.5 mV, $E_{ampl}$=25 mV and $f$=4 Hz. GCPE=glassy carbon paste electrode, CP, DCP and TCP=chlorophenol, di- and trichlorophenol, respectively

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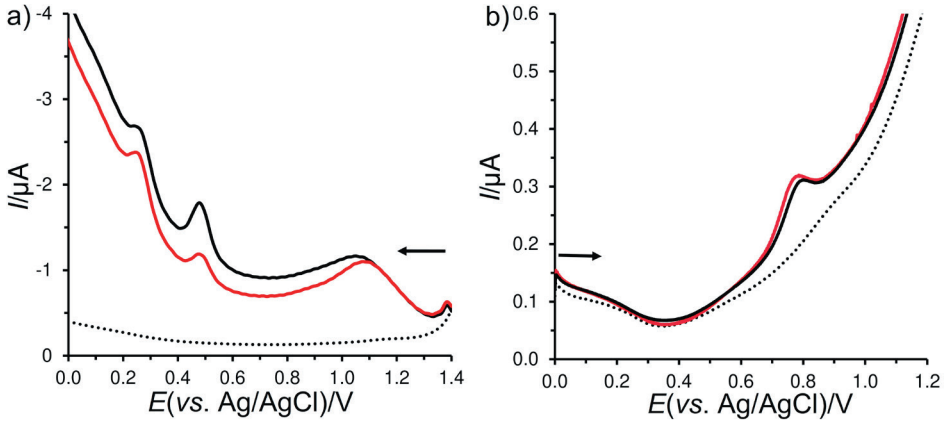


**Fig. S4.** Cathodic (a) and anodic (b) square wave voltammograms of 0 (dotted black) and 1 μmol/L 2,6-DCP recorded on GCPE in 0.1 mol/L acetate buffer (pH=4.5) without (solid black) and with (red curve) $\varphi$(EtOH)=5 % at $E_{dep}$=+1.4 V, $t_{dep}$=120 s, $t_{eq}$=5 s, $E_{step}$=−5 mV, $E_{ampl}$=−25 mV, and $f$=60 Hz. GCPE=glassy carbon paste electrode, DCP=dichlorophenol

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**Table S1.** Overview of anodic peak potentials ($E_p^a$) of phenol and chlorophenols depending on the pH of different working solutions

| Supporting electrolyte | pH | $E_p^a$/V | | | |
|---|---|---|---|---|---|
| | | PhOH | 2-CP | 2,6-DCP | 2,4,6-TCP |
| $HNO_3$ | 1.0 | 1.017 | 1.007 | 0.972 | 1.017 |
| AcB | 4.5 | 0.851 | 0.811 | 0.775 | 0.896 |
| SPB | 7.0 | 0.670 | 0.645 | 0.629 | 0.715 |
| AmB | 10.0 | 0.514 | 0.540 | 0.599 | 0.594 |

*c*(supporting electrolyte)=0.1 mol/L. AcB=acetate buffer, AmB=ammonia buffer and SPB=sodium phosphate buffer. CP, DCP and TCP=chlorophenol, di- and trichlorophenol, respectively