

## Electronic Supplementary Information

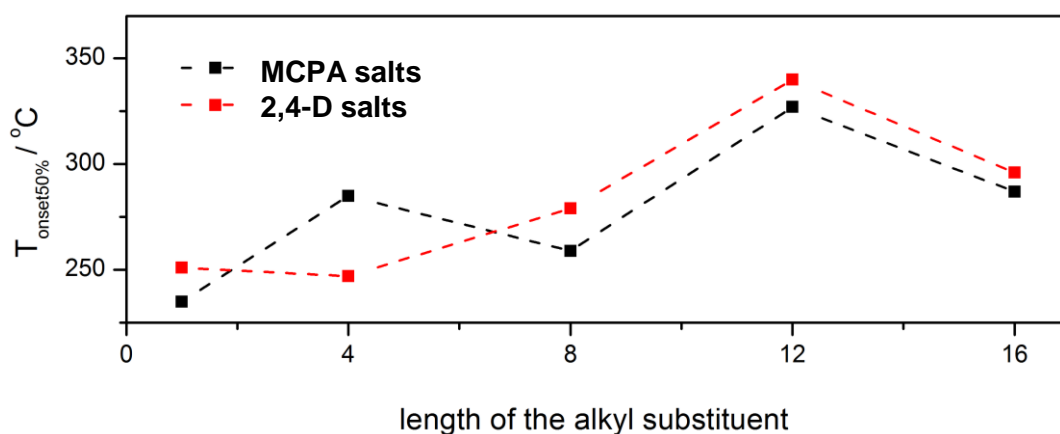
### Herbicidal ionic liquids derived from renewable sources

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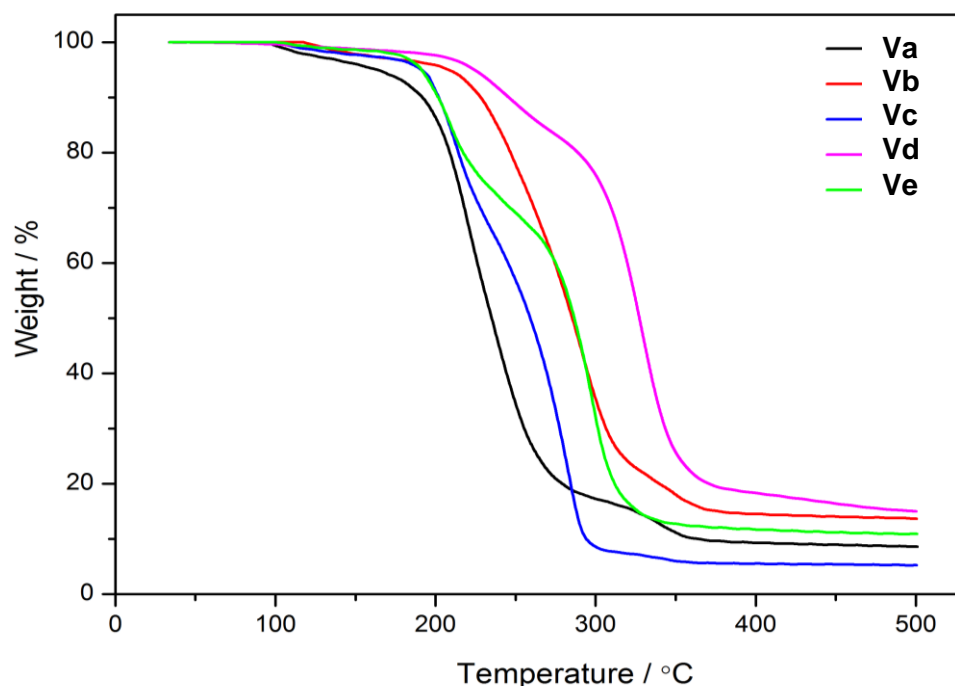
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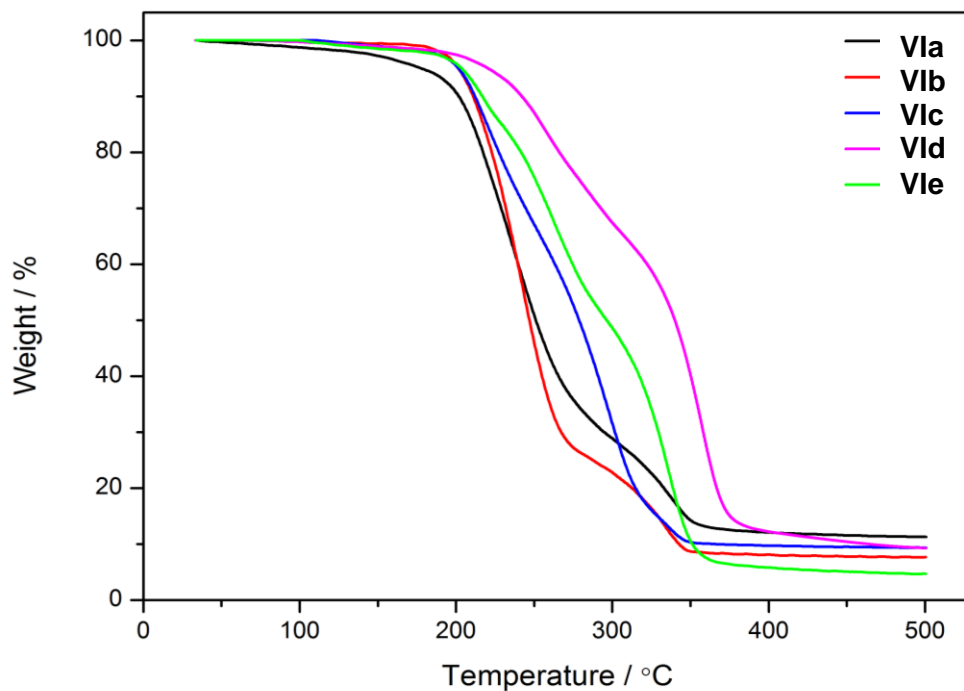
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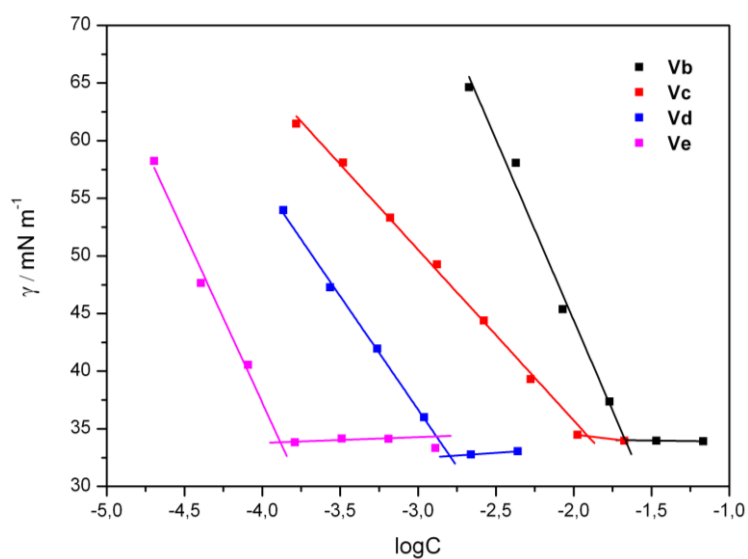
**Figure S1.** Changes in the decomposition temperatures ( $T_{\text{onset}50\%}$ ) determined for salts derived from the MCPA and 2,4-D anion as an effect of increasing the chain length of the alkyl substituent.



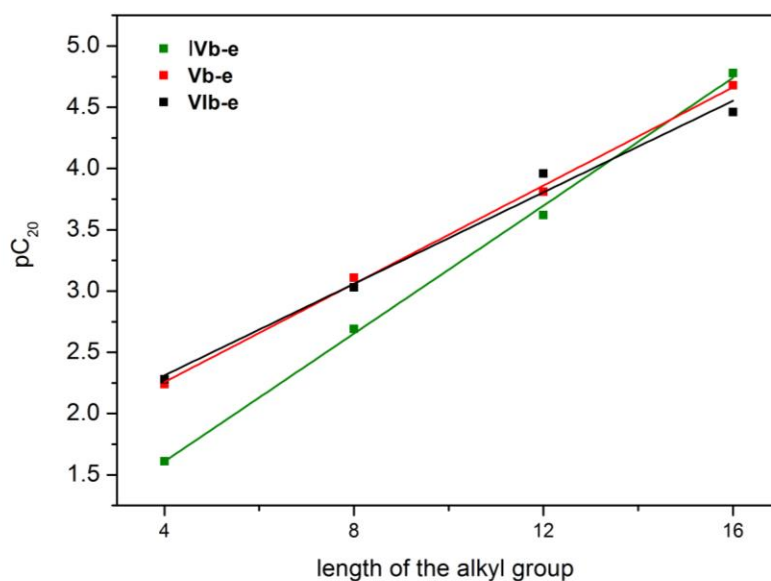
**Figure S2.** TGA curves of the obtained MCPA-based ILs



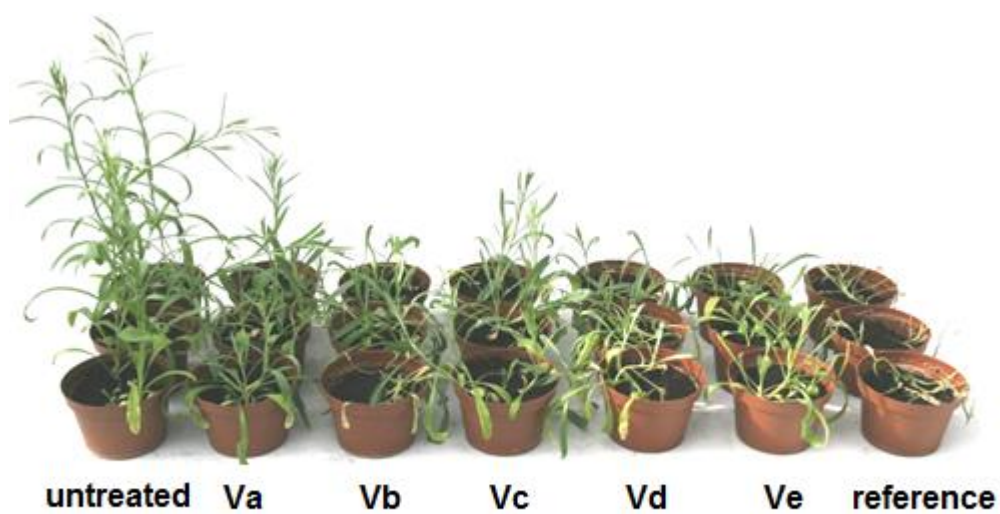
**Figure S3.** TGA curves of the obtained 2,4-D-based salts



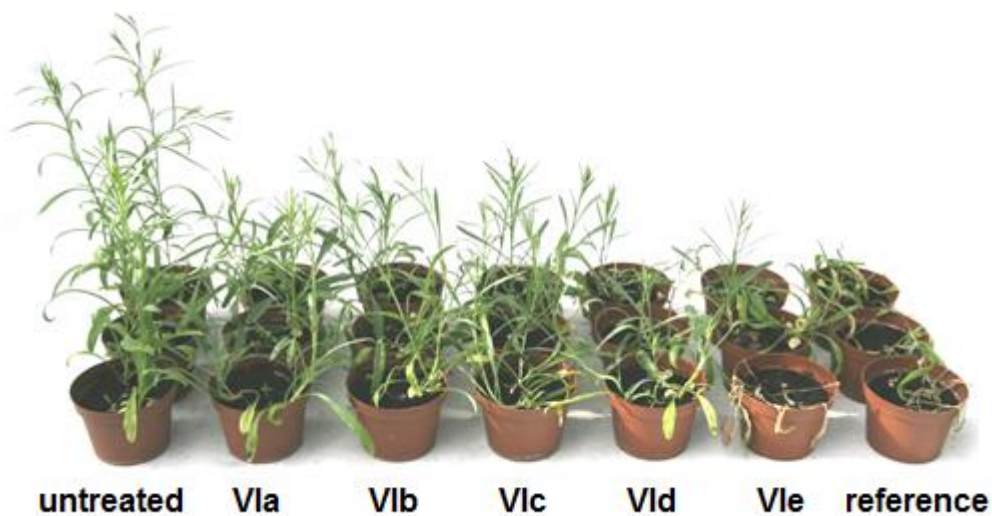
**Figure S4.** Surface tension ( $\gamma$ ) as a function of logarithm of concentration for ILs V



**Figure S5** Relationship between  $pC_{20}$  and the number of carbon atoms in the alkyl substituent of bromides (**IVb-e**), salts with the MCPA anion (**Vb-e**) and the 2,4D anion (**VIb-e**).



**Figure S6.** The efficacy of ILs **V** against cornflower.



**Figure S7.** The efficacy of salts **VI** against cornflower.

**Table S1.** The influence of ILs **V** on weed control.

Treatment	Fresh weight reduction (%)			
	Cornflower		White mustard	
<b>Va</b>	40	c <sup>a</sup>	54	b
<b>Vb</b>	69	ab	77	ab
<b>Vc</b>	39	c	75	ab
<b>Vd</b>	57	bc	87	a
<b>Ve</b>	56	bc	76	ab
MCPA (reference)	86	a	75	ab

<sup>a</sup>The same letter in the column indicates no statistical differences between treatments.

**Table S2.** The influence of salts **VI** on weed control.

Treatment	Fresh weight reduction (%)			
	Cornflower		White mustard	
<b>VIa</b>	23	ba	39	b
<b>VIb</b>	30	ab	39	b
<b>VIc</b>	34	ab	52	ab
<b>VIe</b>	34	ab	64	ab
<b>VIe</b>	66	ab	71	a
2,4-D (reference)	67	a	74	a

<sup>a</sup> The same letter in the column indicates no statistical differences between treatments.