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Residue inventories of total PCB in Chinese surface soil

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In order to create inventories of total PCB concentrations in Chinese surface soil, gridded China PCB usage inventories with a 1/6 degree latitude by 1/4 degree longitude resolution were first developed. The dense usage of Chinese PCBs was on the eastern part of the country with highly developed industry and large population. In order to evaluate the quality of the PCB usage inventories, 184 surface soil samples were collected across China, and a total of 73 PCBs congeners were detected in these samples. Mean concentration of total PCBs was 1800 pg/g dw (dry weight), 3350 pg/g dw in urban sites, 1350 pg/g dw in rural sites, and 1350 pg/g dw in background sites. A highly significant correlation ($R = 0.46$, $P < 0.001$) was found between PCBs concentration in Chinese surface soil samples and the usage of PCB in the grid cells where both the sampling and the application sites were included. Based on the gridded Chinese usage inventories and a significant correlation between PCBs usage and concentration of PCBs in Chinese surface soil, gridded PCBs residue inventories in Chinese surface soil were established, which paved a way for further PCB studies in China.