



Black Carbon Production in Open Biomass Combustion

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Reduction in the quantity of forest fuel accumulating in regions prone to wildfires by using fuel reduction burns not only reduces damage to natural resources and habitats (when wildfires subsequently occur), but also provides a mean to generate black carbon of various particle sizes. These include sizes capable of entering the soil matrix and/or undergoing erosion and subsequent deposition in sedimentary sinks. Black carbon represents a compact form of carbon capable of offsetting an equivalent quantity of contemporary fossil carbon released as CO₂.

Black carbon, provided it is not consumed as a fuel, may serve this purpose for a considerable period in relation to that of our consumption of fossil fuels. Little is presently known of the extent of natural black carbon production in such biomass combustion and it is clearly beneficial to acquire such knowledge and, where possible, to adjust land management practices to enhance this production.

This contribution presents the outcomes of an exploratory experiment devised to enable, insofar as possible, (i) a material balance to estimate the yield of black carbon from a small-scale burning of typical forest litter, (ii) identify the primary factors controlling yield (iii) and develop an experimental programme to provide data contributing to the objective of improved model estimates of the black carbon component in the global carbon cycle.