|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Table S13**. Model selection for greenhouse gas concentrations – carbon dioxide (CO2 ppm) and methane (CH4 ppm) – with candidate GAM models\* assessed in before and 3 time point after the addition of burned or unburned plant material to experimental mesocosms. | | | | | | |
| *Metric* | *Time* | *Model* | | *df* | *AIC* | *ΔAIC* | |
| CO2 | Day-0 | | Treatment +s(plant material, by=Treatment) | 8.7 | **314.4** | -18.7 | |
|  |  | | Treatment + s(plant material) | 4.0 | 326.9 |  | |
|  |  | | s(plant material) | 3.0 | 333.2 |  | |
|  | Day-10 | | Treatment +s(plant material, by=Treatment) | 9.1 | **420.5** | -7.2 | |
|  |  | | Treatment + s(plant material) | 6.5 | 421.4 |  | |
|  |  | | s(plant material) | 5.3 | 427.8 |  | |
|  | Day-31 | | Treatment +s(plant material, by=Treatment) | 10.4 | **412.0** | -14.4 | |
|  |  | | Treatment + s(plant material) | 4.0 | 428.1 |  | |
|  |  | | s(plant material) | 3.0 | 426.3 |  | |
|  | Day-59 | | Treatment +s(plant material, by=Treatment) | 7.3 | **417.5** | -11.1 | |
|  |  | | Treatment + s(plant material) | 5.7 | 428.6 |  | |
|  |  | | s(plant material) | 4.6 | 428.7 |  | |
|  |  | |  |  |  |  | |
| CH4 | Day-0 | | Treatment +s(plant material, by=Treatment) | 5.0 | **-62.3** | -3.0 | |
|  |  | | Treatment + s(plant material) | 4.0 | -58.0 |  | |
|  |  | | s(plant material) | 3.0 | -59.3 |  | |
|  | Day-10 | | Treatment +s(plant material, by=Treatment) | 9.2 | **-66.2** | -4.8 | |
|  |  | | Treatment + s(plant material) | 6.0 | -59.6 |  | |
|  |  | | s(plant material) | 5.1 | -61.3 |  | |
|  | Day-31 | | Treatment +s(plant material, by=Treatment) | 5.9 | -29.3 |  | |
|  |  | | Treatment + s(plant material) | 4.0 | -30.8 |  | |
|  |  | | s(plant material) | 3.0 | **-32.1** | 0.0 | |
|  | Day-59 | | Treatment +s(plant material, by=Treatment) | 5.0 | 0.3 |  | |
|  |  | | Treatment + s(plant material) | 7.1 | **-3.8** | -2.3 | |
|  |  | | s(plant material) | 5.9 | -1.5 |  | |
| *\*Treatment +* *s(plant material, by= Treatment)* GAM has parametric terms (*Treatment*) and separate smoothers for each treatment. *Treatment + s(plant material)* GAM has a global smoother allowing for off-set intercepts according to treatments. The *s(plant material)* GAM fits a global smoother to all data. *Bold* represents the selected models. Delta AIC (*ΔAIC*) is the difference between the selected model and the global smoother model | | | | | | |
|  | | | | | | |