

- B525** Report on temperature changes of some grasses (*Zoysia*, *Miscanthus*, *Phragmites* sp.) in experimental and field conditions

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The purpose of this study is to confirm the change of inner temperature of plant, having a ladder role when the fire be occurred. And, such information of burning data is of importance to grassland and fire ecology, because little is known of the fire effects on these species. Thus, this study was designed to compare the temp. changes between at different heating temp. in lab condition and at different heights above the ground on the field. It takes about 500, 750 and 770 mins to change the temp. of the fresh plants of *Zoysia*, *Miscanthus* and *Phragmites* species under the furnace of 50°C, respectively. However, these were ignited at 0-0'30", 0-01'40" and 0-01'45" under the 500°C. So, the more the heating temp. is high, the more the combustion time was inverse proportion to have an effect on samples by heat, because "S" form curve was determined the relation of time and water loss by the rise of temp. Therefore, it was considered that the fire intensity according to the change of plant temp. is a main factor of determining the rate of heat release from the plant itself. Also, the intensity will be depending upon its morility and repair which the heat affected by each plant.

- B526** Seasonal Adaptation of Colonial Spiders (*Philoponella prominens*)
in a Temperate Region

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Most colonial and social spiders that have been studied to date are found in tropical and subtropical habitats. *Philoponella prominens* is found for the first time to be a colonial species living a temperate region. The purpose of this study was to investigate mechanisms of seasonal adaptation through the analysis of population dynamics. The results show that *P. prominens* has a unique life history that is different from those of other colonial and social spiders that have been studied thus far. *P. prominens* exhibit various combinations of solitary and colonial living as well as commensal association, depending on the season and developmental stage. In particular, *P. prominens* alternately associate with host spiders of several species during immature or sub-adult stage in spring and fall. Not only is the seasonal change in association with host spiders related to the species composition of potential host spiders in the field, but also dependent upon the density and web size of the host spiders. This study may contribute to a better understanding of the origin of sociality in spiders and evolutionary plasticity in relation to habitat type.