

## Poster Instructions for Ag-ESD Symposium 2016

### ●Registration (ポスター申し込み方法)

- ① Please register with the following website Registration Form **by July 14, 2016**.  
URL : <http://www.nourin.tsukuba.ac.jp/~agesd/ag-esd2016.html>
- ② Please send your "Poster Abstract" as a Word format file by E-mail to [agesd@nourin.tsukuba.ac.jp](mailto:agesd@nourin.tsukuba.ac.jp) **no later than July 14, 2016**. Do not send "pdf file".  
(See Abstract Instructions below.)

### ●Poster Abstract Instructions and Example (ポスター要約作成と見本)

Please follow these instructions for preparation of a one page abstract of your poster presentation.

1. Language  
English Only
2. Abstract format (Refer to example below)

Title of Presentation (**Bold 14 pt Times New Roman**)

Author name, affiliation and body of abstract should follow the title without bold type and with a 12 pt Times New Roman font

Name(s) of author(s) should include the Given Name first, Middle Name next and FAMILY NAME last with Family Name in All Capital Letters

Your abstract should be single spaced.

Use right justification with a 3.0 cm top margin and 2.5 cm margins for the bottom and both sides.

Length of the summary should not exceed one page.

(Example)

## Genetic Studies on Tick Ecdysteroid Regulation for Development of Sustainable Tick Control Strategies

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Ticks are exoparasites of mammals and important pest of livestock production. Presently, tick management is limited to the use of acaricides that provide great advantages to livestock production but also ticks develop resistant against acaricides. Development of alternative ways for sustainable livestock production is required. The knowledge of tick ecology and physiology is important to construct strategies for integrated tick management. Tick molting and reproduction require blood feeding and are under endocrinological regulation. Therefore, our studies focus on the roles of blood feeding and mating in the regulation of these endocrinological mechanisms.

Viable egg production requires both engorgement and mating, but the distinct roles of these two stimuli are not understood. The soft tick *Ornithodoros moubata* provides an excellent model to study the separate roles of feeding and mating because both virgin and mated females engorge but only mated females produce viable eggs. Ecdysteroid titers significantly increased in only mated females and remained low in virgin females. In addition, both mated and virgin females showed up-regulation of *EcR* and *RXR* hormonal receptors immediately after engorgement. Both mated and virgin females showed *Vg* expression during an early phase (3 to 10 days) after engorgement, whereas only mated females showed increased *Vg* expression during the late phase (12 to 20 days). Whole mount *in situ* hybridization revealed the main site of *Vg* expression is the midgut during the early phase while the fat body enlarges and shows strong *Vg* expression during the late phase in only mated females. Therefore, feeding stimulates *Vg* expression in both virgin and mated females while mating is required for *Vg* up-regulation in the late phase. Furthermore, mating appears to induce secretion of ecdysteroids after engorgement and high titers of ecdysteroids up-regulate *Vg* expression in mated females leading to mature egg production. This two phase regulation of vitellogenesis in *O. moubata* reveals the importance of investigating the separate roles of nutrition and mating in arthropod reproduction. Understanding these mechanisms may lead to the development of better strategies for the use of hormone agonists in controlling tick populations.