

To students concerned,

Information on “Academic Communication of Science”

The Seminar “Academic Communication of Science” comprises students’ oral and poster presentation on their PhD dissertation research. Special lectures will also be held.

(1) Oral presentations: Students shall report on the progress of their research in academic conference style for approximately 15 minutes (oral presentation for 10 minutes and Q&A for 5 minutes). LCD projector should be used for research presentations (**Please bringing your own computer.**).

- In an oral talk, students try to produce your Ph. D course study from the scientific background with plain explanation. Please start your talk from the basics on your research.
- An oral presentation should be in English.
- The contents of the presentation should be written in English.
- The talking time is limited. Please deal with the details of your study at the poster presentation.

(2) Poster presentation: Students shall present the same content as oral presentations. Student will have discussion time (core time) in English. Core time of each presenter will be shown on his/her name badge provided at the reception.

* Please print the poster in size A0 (841mm x 1189mm).

* The poster must be made in English.

Please affix the poster at the specified place (shown in your name badge). If you cannot print your poster by large printer, each presenter can affix your poster to A0 (841mm x 1189mm) size of paper. Please bring printed poster and affix it to the specified paper on the presentation day.

(3) Summary of the research presentation: **Please submit a one page summary both in Japanese and English (see sample), A4 size, by e-mail (ag-rengaku@ml.adm.tottori-u.ac.jp) to the Academic Affairs Section of the United Graduate School of Agricultural Sciences (UGSAS). (Students of the Special Program for Foreign Students: submit the summary in English only. Others: both in English and Japanese).** The deadline for submission is strictly **September 20th (Wed.)**. All the summaries will be compiled to be distributed to students in advance.

(4) Special lectures: Two lectures on October 13th

(5) If you have any questions, please contact:

The office of UGSAS, Tottori University (ag-rengaku@ml.adm.tottori-u.ac.jp) or Dr. Motoichiro Kodama (mk@muses.tottori-u.ac.jp).

見本 (和文)

SAMPLE (JAPANESE)

高糖度ウンシュウミカンの栽培と水分ストレス測定および生体反応の研究

専攻名：生物生産科学科

連合講座名：農業生産学講座

氏名：

入学年度：平成16年度

配置大学名：山口大学

主指導教員名：

ウンシュウミカンは、果実肥大期から成熟期にかけ、樹体に適度な水分ストレスを与えることで、果実糖度が上昇する。生産現場では、乾燥ストレスを付与するため、樹冠下に透湿性マルチを設置し、雨水を遮ることで土壌を乾燥させることが積極的に行われている。しかし、水分ストレスが強いと、果実肥大の抑制や酸度の上昇が生じる。また、ストレスがかかっていないにもかかわらず灌水を行うと、糖度を低下させ、浮き皮の発生の原因となり、果実の商品価値が著しく低下する。そのため、マルチ被覆時期の決定や、灌水の指標となる樹体水分ストレスの測定法が必要とされている。現在、プレッシャーチャンパー法などによる最大水分ポテンシャルが、最も信頼度が高い指標となっているが、高圧ガスや専門の機器を必要とし、その測定時間が夜明け前に限られており、一般の生産現場では実用的でない。そこで、本研究では、水分ポテンシャルに変わる水分ストレスの評価方法を検討するとともに、樹体の水分ストレスに対する反応を調査した。

樹体の水分ストレス測定法として、樹液流量はグラニエ法を、樹幹含水量は、TDR法の検討を行った。グラニエ法による樹液流量は、日射量に対して非常に高い相関をもつ。また、 -1.7MP (水分ポテンシャル)程度の強い水分ストレスを受けると、弱いストレス(-0.5MP)よりも樹液流量が抑制されることが明らかとなった。TDR法による樹幹含水量も水分ストレスが強くなるに従って少なくなることを測定できた。

さらに、間接的に樹体の水分ストレスを測定するため、TDR法と熱流速式土壌水分計を用いて土壌水分を調査した。TDR法、熱流速式水分計ともに迅速に測定でき、樹体の水分ストレスを間接的に測定するのに有効である。どちらの方法とも、従来のPFセンサー等で困難であった乾燥土壌での測定も可能であるため、ウンシュウミカンの土壌水分管理に適している。このTDR法による土壌水分測定によって、花崗岩を母岩とした土壌では、土壌水分が15%以下に減少すると樹体が乾燥ストレスを受け始め、果実糖度の上昇に寄与することが明らかとなった。しかし、土壌水分が10%以下となると強いストレスとなり、果実肥大が強く抑制された。

今後、樹体の水分ストレスが、どの程度(水分ポテンシャル)で樹液流量や光合成に影響を与えるか試験を進め、ウンシュウミカンの乾燥ストレスに対する反応を明らかにするとともに、グラニエ法やTDR法を用いた水分ストレス診断が可能か検討を行う。また、それらの方法でストレス診断が可能な場合は、新たな方法による水分ストレス診断の指標を作成を行う。

見本 (英文)
SAMPLE (ENGLISH)

Research of cultivation, water stress measurement, and biological reaction
of high sugar degree 'Satsuma Mandarin'

Course : Bioproduction Science
Division : Agricultural Production Science
Name :
Entrance : 2004 (Oct.)
University : Yamaguchi University
Major Supervisor :

Satsuma Mandarin puts from the fruits dilation period at maturity, gives tree a moderate moisture stress, and the fruits sugar degree rises. On the production site, the soil is positively dried by setting up the moisture permeability multi under the tree crown to give a dry stress and interrupting rain water. However, it rises about control and the acid degree of the fruits dilation when the moisture stress is strong. The sugar degree is decreased when an excessive sprinkling water is done when the stress is small, and it causes the peel puffing. As a result, the commercial value decreases. Therefore, the metrology of the index tree moisture stress of the decision and sprinkling water at the multi coating time is needed. The maximum water potential by the pressure chamber method etc. needs a high-pressure gas and a special equipment, limited the measurement time to predawn, and is the most unpractical though is a high index reliability now on a general production site. Then, the method of evaluating the water stress that changed into the moisture potential was examined, and the reaction to the moisture stress of tree was investigated in this research.

As a water stress measuring method of a tree, sap flux performed the Granier method and trunk tree water content examined the TDR method. The sap flowing quantity by the Granier method has a very high correlation for the quantity of solar radiation. Moreover, when the water potential that about -1.7MP is strong was received, it became weak and clearer than stress (-0.5MP) the control of the sap flowing quantity. The tree trunk water content by the TDR method was able also to measure decreasing strengthened the moisture stress.

In addition, to measure the water stress of tree indirectly, the soil moisture was investigated with TDR method and a heat flow velocity type soil moisture meter. It is effective to be able to measure both TDR methods and the heat flow velocity type moisture meters promptly, and to measure the moisture stress of tree indirectly. In the granite wall rock, The soil moisture's decrease tree's beginning to receive a dry stress to about 15%, and contributing to the rise of the fruits sugar degree by the soil moisture measurement by this TDR method became clear. However, it became a strong stress when the soil moisture became 10% or less, and the fruits dilation was controlled strongly.

The examination is advanced, the reaction to a dry stress of Satsuma Mandarin is clarified, and whether the moisture stress diagnosis that uses the Granie method and the TDR method is possible will be examined in the future. in how water potential the water stress of tree influences the sap flowing quantity and photosynthesis. Moreover, when it is possible, the index of the water stress diagnosis by a new method is made.

平成29年9月7日

「科学コミュニケーション」送迎バスを申込された方へ

鳥取大学農学部連大学務係

- ・10月25日(水) 10時50分までに鳥取大学、13時00分までにJR松江駅南側松江ユニバーサルホテル本館に集合してください。
集合時間後、すぐに出発しますので遅刻のないようお願いします。
- ・10月27日(金) 解散後、松江駅南側(松江ユニバーサルホテル本館横) 経由で鳥取大学まで送迎します。
- ・乗車予定の変更・当日のアクシデント等ありましたら、必ず鳥取大学農学部連大学務係(0857-31-5446)へ連絡してください。

To Bus service users between Tottori University and Training Institute via Matsue station

- ・ Oct. 25 (Wed) The bus will depart for Training Institute from Tottori University to Training Institute via Matsue Station.
Please gather at Tottori University by 10:50 or in front of Matsue Universal Hotel main building which is located south side of Matsue Station by 13:00.
The bus will depart from each gathering location on time, so please be punctual.
 - ・ Oct. 27 (Fri.) The bus will depart for Tottori University via Matsue Station from Training Institute after the seminar
 - ・ Please be sure to let us know beforehand in case you'll change your schedule.
- Academic Affairs Section of the United Graduate School of Agricultural Sciences, Tottori University. (Tel: 0857.31.5446)

