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日本熱帯農業学会第124回講演会

Ⅰ．研究発表要旨

Ⅱ．ポスターセッション要旨

Ⅲ．公開シンポジウム要旨

会場：京都大学吉田キャンパス北部構内
（農学部総合館）

2018年9月29日, 30日

日本熱帯農業学会第 124 回講演会プログラム

第 1 日　9 月 29 日（土）

開始時刻	研究発表〔発表 12 分，質疑応答 3 分〕　◎印は学生優秀発表賞審査対象			
	座長	第 1 会場 (2 階 W214 講義室)	座長	第 2 会場 (3 階 W306 講義室)
9：00	鴨下顕彦（東京大）	◎ 1. 温帯産ダイズ品種の長日処理を施した熱帯環境下での群落機能評価—収量および外観品質— *長﨑裕一[1]・Andy Saryoko[2]・Ian Surya Fitra[3]・Firdaus Puja Santana[3]・Iskandar Lubis[3]・本間香貴[4]・白岩立彦[1]（[1]京都大学大学院農学研究科・[2]インドネシア農業研究開発機関，・[3]ボゴール農科大学・[4]東北大学大学院農学研究科）	パチャキルバビル（東京農大）	◎ 13. Identification and molecular characterization of rice sheath rot complex disease in Ethiopia *Wubneh Ambachew[1,2], Keriichi Motohashi[2], Keiko T. Natsuaki[2] ([1]Graduate School of Agriculture, Tokyo University of Agriculture, [2]Ethiopian Institute of Agricultural Research, Fogera National Rice Research and Training Center)
9：15		◎ 2. ウガンダ東部における異なる時期の土壌水分ストレスが陸稲栽培品種の収量性に及ぼす影響 *斉藤雄介[1]・倉内伸幸[1]・加藤太[1]・佐々木大[1]・宮本輝尚[2]・吉野稔[2]（[1]日本大学大学院・[2]国際協力機構専門家）		◎14. Effect of Seed Priming on Germination and Physiological Response of Hot Pepper (*Capsicum annuum*) under Drought Stress Condition *Mohammad Mustafa Haris, N. Terada, A. Sanada, H. Gemma and K. Koshio (Graduate School of Agriculture, Tokyo University of Agriculture)
9：30		◎ 3. Applicability of photosynthesis efficiency for successful prediction of near-isogenic lines rice (*Oryza sativa* L.) to different planting densities. *Melkamu Tafere[1,2], Kenji Irie[2] ([1]Ethiopian Institute of Agricultural Research, Fogera National Rice Research and Training Center, [2]Graduate School of Agriculture, Tokyo University of Agriculture)	福田聖子（日本大）	◎ 15. Field Study on Production, Trade and Post-Harvest Handling of Tomato Fruit in Eastern Region of Afghanistan *Gulbuddin Gulab[1], Saidajan Attiq Abdiani[2], Naoki Terada[1], Atsushi Sanada[1], Hiroshi Gemma[1] and Kaihei Koshio[1] ([1]Graduate School of Agriculture, Tokyo University of Agriculture, [2]Nangarhar University, Faculty of Agriculture)
9：45		◎ 4. Response of groundnut (*Arachis hypogaea* L.) varieties to drought stress *Chukwunonso. S.A. Ezeah [1,2], Kenji Irie[2] and Pachakkil Babil[2] ([1]Nigeria's Federal Ministry of Agriculture and Rural Development, [2]Tokyo University of Agriculture)		◎ 16. タンザニア連合共和国モロゴロ州におけるトマト栽培と収穫後技術における現状と課題に関する事例調査 *乗松諒・真田篤史・弦間洋・小塩海平（東京農業大学大学院農学研究科）
10：00	森塚直樹（京都大）	◎ 5. On-farm manipulation of variety, water and N management to improve rice production in coastal zone of Red River Delta, Vietnam *Phan Luyen[1,2], Akihiko Kamoshita[1] ([1]Asian Natural Environmental Science Center, University of Tokyo, [2]Graduate School of Agricultural and Life Sciences, University of Tokyo)	神崎真哉（近畿大）	◎ 17. ジャボチカバ・サバラの果実肥大および種子発達様式 *大穂清隆・真田篤史・篠原 卓・小塩海平・弦間 洋（東京農業大学大学院農学研究科）

10：15		◎ 6. Salinity impact on economic efficiency of rice and aquaculture production in Rang Dong and Nghia Binh communes, Nam Dinh, Vietnam *Phan Luyen[1,2], Takeshi Sakurai[2], Nguyen Yen[3], Akihiko Kamoshita[1] ([1]Asian Natural Environmental Science Center, University of Tokyo, [2]Graduate School of Agricultural and Life Sciences, University of Tokyo, [3]Faculty of Environmental Sciences, Vietnam National University of Agriculture)		◎ 18. 液肥の窒素濃度がパッションフルーツの生長、開花数、および葉分ミネラル含量におよぼす影響 *古賀翔硫・佐藤大輝・近藤友大 (宮崎大学地域資源創成学部)
10：30		◎7. Stand Structure and Above Ground Biomass of *Rhizophora* Forest in Lampi Marine National Park, Myanmar *Win Maung Aye, Shinya Takeda (Graduate School of Asian and African Area Studies, Kyoto University)		19. 塩水による潅水がパッションフルーツの生育および果実品質におよぼす影響 *近藤友大[1]・樋口浩和[2] ([1]宮崎大学地域資源創成学部・[2]京都大院農学研究科)
10：45	竹田晋也＜京都大＞	8 . Extension methodology in disseminating agricultural innovation among farmers in legumes-based farming system at Central Dry Zone of Myanmar *Nyein Nyein Htwe and Kay Thi Khaing (Yezin Agricultural University)	松田大志＜国際農研＞	20. 露地栽培パッションフルーツにおける挿し木時期と育苗用鉢の種類が苗質，収量および果実品質に及ぼす影響 *鈴木哲也・杉浦真由・新川猛 (岐阜農技セ)
11：00		9. Migration and Its Impact on Rural Livelihoods of Myanmar *Theingi Myint and Nandar Aye Chan (Yezin Agricultural University)		21. パッションフルーツの鉢吊り下げ式養液土耕栽培の実用性と生産上の課題 *須崎徳高・駒田達哉 (三重農研紀南果樹研究室)
11:15		10. Changing agriculture practice of Ayeyarwady region: A case study of Hinthada township *Myint Thida[1], Nwe Yin Min[2], Naw Paw Thaw Thaw[3], Win Thanda Oo[4] ([1]Hinthada University, [2]Pyay University, [3]Taungoo University, [4]Yangon University)		22. 人為的な低温処理時間がアボカドの耐寒性に及ぼす影響 *木﨑賢哉・内野浩二 (鹿児島県農業開発総合センター果樹・花き部)
11:30		11. Environmental and social impact of commercial mung bean [*Vigna radiata* (L.) Wilczek] production in Myanmar *Khin Lay Swe[1] and Kazuo Ando[2] ([1]FREDA, [2] CSEAS, Kyoto University)	近藤友大＜宮崎大＞	23. サラカヤシの受粉後の高温による受精阻害に関する解剖学的研究 *松田大志[1,2]・ 宮地尚樹[1]・ 岡部公則[1]・ 樋口浩和[1] ([1]京都大学院農学研究科・[2]現国際農研)
11:45		12. Black Gram Cultivation in Ayeyarwady Delta from the viewpoint of the comparison of the Bengal Delta: a case study in Maubin Township, Myanmar Kazuo Ando[1], Khin Lay Swe[2], Myint Thida[3], Haruo Uchida[1], Yoshio Akamatsu[1] ([1]CSEAS, Kyoto University, [2]FREDA, [3]Hinthada. University)		24. ランブータン花粉の溶液保存が花粉発芽率に及ぼす影響 *香西直子[1]・島田温史[1]・緒方達志[2] ([1]鹿児島大学農学部・[2]国際農林水産業研究センター熱帯・島嶼研究拠点)

12

Black Gram Cultivation in Ayeyarwady Delta from the viewpoint of the comparison of the Bengal Delta: a case study in Maubin Township, Myanmar

＊Kazuo Ando1　Khin Lay Swe2, Myint Thida3, Haruo Uchida1, Yoshio Akamatsu1

1: CSEAS, Kyoto University,　2 FREDA, 3, Hinthada. University

Key　Ward：Black Gram, Ayeryarwady Delta, Bengal Delta, Myanmar

ベンガルデルタとの比較の視点からみたイラワジデルタのケツルアズキ栽培ーミャンマーのマウービン郡における事例研究ー

安藤和雄1、キン・レイ・シュエ2、ミンツ・ティダ3、内田晴夫1、赤松芳郎1

Introduction

In the Tropical Monsoon Deltas in Asia, it is generally believed that rice is only dominant field crop to adjust soil and water condition. However, in Ayeyarwady Delta and Bengal Delta, pulses have been traditionally cultivated in dry season at some extent by multiple cropping with rice cultivated in rainy season. The physical environment of both the deltas, particularly, in deep water rice growing area, is not suitable to pulses　because of　two drastic environment such as flood in rainy season and dry up in dry season. Even though, under such a physical environment, the soil of flood plains or natural levee's area in the Tropical Monsoon Delta is usually rich in silt loam, which can sustain moisture available for use by crops. The farmers of both deltas have developed　unique pulses cultivation practices using this physical advantage. The trend of pulses cultivation acreage of both deltas is clearly different; according to the statistical year book, the total pulse cultivated acreage decreased from 1,702,000 acres in 1996/97　to 627,000 acres in 2010/11 in Bangladesh(BSS, 2011 year book), and that　increased from 4,809,000 acres in 1995/96 to 8,021,000 acres in 2007/2008 in Myanmar(CSO, 2008 Yearbook). On the basis of our observation in both　deltas since 1980s, the reason behind this change is due to increasing cultivation of　dry season rice in Bangladesh and dry season pulses in Myanmar. In Myanmar, in both years, the top four cultivated pulses are Black Gram or "Matpe" (1st), Green Gram or "Pediscin" (2nd) , Pigeon Pea or "Pesingon" (3rd) and Chickpea or　"Kalape"(4th). The acreage of Black Gram cultivation of Ayeyawady Region is the largest among 14 States and Regions in 2001/2002 and 2007/2008 (CSO, 2008 Yearbook) . Black Gram is most popular in Ayeyawady Delta. In Bangladesh, according to Year book of Agriculture 2012 (BBC), the top four cultivated pulses in 2007/08 and 2011/12　were Lathyrus (Grass Pea) or "Kheshari" (1st), Lentil or Masur(2nd),　"Mung" (Green Gram)(3rd)　and　"Mash Kalai" (Black Gram)(4th). Black gram and Lathyrus has been dominant in Ayeyarwady and Bengal, respectively. This presentation aims to report the change of Black Gram cultivation acreage at Myanmar national level in long term and the farmers' Black Gram cultivation practice in the study village in Maubin Township in Myanmar referring to the Lathyrus cultivation practice in Bangladesh.

Methodology

In Bangladesh, the field works were conducted by Ando and Uchida through JICA projects such as JOCV of Ando in Noakhali district from 1978 to 1981 and JICA joint study projects of Ando and Uchida　in several districts including Tangail, Mymenshingh and etc., from 1986 to 1996 periodically. In Myanmar, long term observation was done by Khin and Myint and the intensive field work on cropping systems of Black gram has been done by Ando, Khin, Myint, Akamatsu in May, Sept. Nov.

2017 and Feb. 2018 for each few days in the study village namely Nga-gyi-ga-yet, Maubin Township. Khin and Ando conducted the extensive field work in the other villages of Maubin Township in 2005/2006 for Black Gram growing season. The PRA (Participatory Rural Appraisal) was employed for the filed works.

Result and Discussion

The Black Gram cultivation of Myanmar was not large extent in the past, but in 1990s its cultivation acreage has started to increase (see Figure1 source: Agricultural Statics and Statistical Year Book of Myanmar), because of international export market (with India, Japan, Indonesia, UAE, Thailand etc. in Jan.-May 2013, source: San Thein and San San Yi, 2016, Myanmar Pulses Production, Trade and Technology: Issues and Prospects, Internet Slide Version). The farmers of our study village, Maubin Township informed us that they cultivate Black gram for Market sale, but not for self-consumption. The acreage of the cultivation practice of Black Gram has also changed in Maubin Township (See Fig.1 and Tab.1. source: Agricultural Office of Maubin Township). Black Gram is cultivated in dry season by multiple cropping systems with rice in rainy season in the study village. The villagers have conducted the three cultivation practices such as " Ye-like- pe", " Khoke-Phone-pe" and "Htun-pe" . The literally meanings are "Htun-pe" ; "pulses growing after land preparation with plough and harrow", "Khoke-Phone-pe" : "cutting the rice stubble and covering the soil surface by the rice stubble" , "Ye-like-pe" : "pulse growing together with soil water" . "Htun-pe" practice is to sow the ~~seed of~~ Black Gram seeds after harvesting rice and the land is prepared with plough and harrow. The other two practices are to sow the Black Gram seeds in the rice growing field before rice harvesting. The rice stubble is not cut in "Ye-like-pe" and the field of "Ye-like-pe" has enough moisture, some time water in soil surface, but the field of "Khok-Phone-pe" is usually no water and drier than the field of "Ye-like-pe". The acreage of "Htun-pe" practice has increased ~~instead of~~ while the other two practices have declined. This change may have been caused by rice variety change and better yield of Black Gram. The drastic decreasing of "Ye-like-pe" may have been mainly owing to extension of combine harvester for rice cultivation. The weed cutter has been used to cut rice stubble in "Khone-Phone-pe" practice recently. The "Ye-like-pe" practice is much similar of Lathyrus cultivation in Bengal Delta.

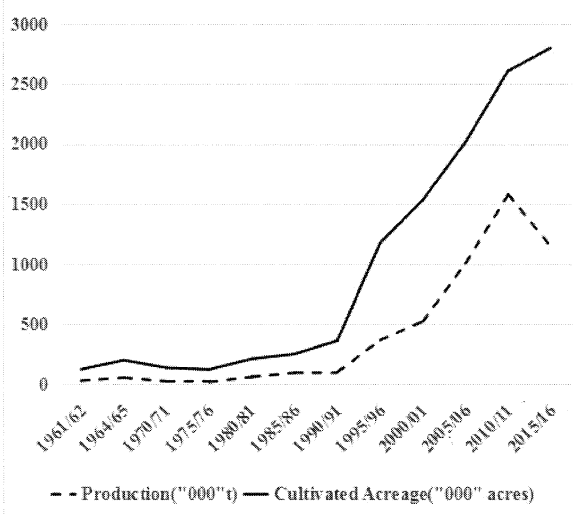

Figure1 Production and Acreage of Black Gram Cultivation in Myanmar from 1961/62 to 2015/16

Table 1 Acrage of Three Practice of Black Gram in Maubin Township (acres)

Year	Ye-like	Khoke-Phone	Htun-pe	Total
1996-97	13,215	14,500	8,073	35,788
1997-98	12,305	14,210	20,136	46,696
1998-99	11,706	13,105	18,447	43,258
1999-00	11,201	12,526	19,382	43,109
2000-01	10,354	12,245	19,843	42,442
2001-02	10,226	12,136	22,551	44,913
2002-03	10,025	11,205	24,273	45,503
2003-04	9,536	9,325	29,203	48,064
2004-05	9,260	10,726	37,849	57,835
2005-06	8,210	10,210	65,369	83,789
2006-07	7,950	12,750	50,248	70,948
2007-08	7,860	14,689	70,210	92,759
2008-09	7,795	11,466	71,510	90,771
2009-10	7,690	12,885	70,198	90,773
2010-11	7,615	11,554	71,625	90,794
2011-12	7,510	8,172	75,123	90,805
2012-13	7,450	11,962	71,382	90,794
2013-14	5,285	9,653	75,857	90,795
2014-15	4,850	8,425	77,545	90,820
2015-16	4,705	7,570	78,630	90,905

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