

## 四国談話会

2014年11月27日、28日に、育種学会四国談話会講演会(第79回)および公開シンポジウム(作物学会四国支部と共催)を香川大学農学部において開催した。それぞれの参加人数は、約20名、約80名であり、プログラムおよび講演要旨(7, 8)は下記の通りである。

◎公開シンポジウム (2014年11月27日(木) 13:00~15:45)

テーマ：「作物の生産現場における水の制御および利活用の新技術」

開会挨拶 (13:00~13:05)

### 1. 地下水位制御システム (FOEAS)

#### 1) 地下水位制御システム「FOEAS」の概要

農研機構 藤森新作氏 (13:05~13:30)

#### 2) 山口県におけるFOEASの導入とその活用への取り組み

山口県農林総合技術センター 橋本 誠氏 (13:30~13:55)

### 2. 点滴かんがいの多目的利用

点滴灌漑技術の最新情報とその多目的利用

ネタフィムジャパン 田川不二夫氏 (13:55~14:20)

### 3. 自然冷熱源の利活用

暑熱環境対策としての自然冷熱源の利活用

香川大学農学部 松村伸二氏 (14:20~14:45)

休憩10分

総合討論 (14:55~15:45)

◎日本育種学会四国談話会講演会 (第79回)

(2014年11月28日(金) 9:30~12:00)

### 1. イネコアコレクションを用いた葉形質の特徴抽出

○杉田(小西) 左江子<sup>1</sup>・西原 知里<sup>1</sup>・千崎 雄佑<sup>1</sup>・松島 淳<sup>1</sup>・桧垣 匠<sup>2</sup>・朽名夏磨<sup>2</sup> (1. 香川大院・農、2. 東大院・新領域)

### 2. シコクカッコソウと*Primula cortusoides*との種間雑種の作出

○山岡 真梨子・大橋 広明 (愛媛大農)

### 3. *Pelargonium fulgidum* と *P. oblongatum* との種間交雑後代における花色と花色素

○朝倉 健太・本藤 加奈・柿原 文香 (愛媛大農)

### 4. *Pelargonium tetragonum* の開花に伴う花色と花色素の推移

○嶋本 旭寿・本藤 加奈・柿原 文香 (愛媛大農)

5. *Pelargonium trifidum*(*Ligularia* 節)と *Ciconium* 節との種間交雑

山中 歳徳・本藤 加奈・○柿原 文香 (愛媛大農)

6. パルス電圧による放電処理が種子の発芽に及ぼす影響

○栗坂 信之<sup>1</sup>・野中 将輝<sup>2</sup>・辻田 泉<sup>3</sup>・尾崎 良太郎<sup>2</sup>・門脇 一則<sup>2</sup>

(1. 愛媛県東予地方局産業振興課, 2. 愛媛大学工学部, 3. 愛媛県農林水産研究所)

7. Potato researches in Nepal: enhancing productivity and food security.

○Rana, B. B.<sup>1</sup>, B. B. Khatri<sup>2</sup>, B. P. Sharma<sup>2</sup>, S. P. Dhital<sup>2</sup>, B. P. Luitel<sup>2</sup>, P. Bhattarai<sup>2</sup>, D. Chaudhary<sup>2</sup>, K. P. Upreti<sup>2</sup>, S. Ghimire<sup>2</sup>, T. Kawano<sup>1</sup>, M. Masayuki<sup>1</sup> (1. Faculty of Agriculture, Kochi University., 2. National Potato Research Program, NARC, Nepal)

8. Development of Potato Varieties in Nepal.

○Rana, B. B.<sup>1</sup>, B. B. Khatri<sup>2</sup>, B. P. Sharma<sup>2</sup>, S. P. Dhital<sup>2</sup>, B. P. Luitel<sup>2</sup>, P. Bhattarai<sup>2</sup>, D. Chaudhary<sup>2</sup>, K. P. Upreti<sup>2</sup>, S. Ghimire<sup>2</sup>, M. Masayuki<sup>1</sup> (1. Faculty of Agriculture, Kochi University., 2. National Potato Research Program, NARC, Nepal)

## 7. Potato Research in Nepal: Enhancing Productivity and Food Security

Rana, B. B.<sup>1</sup>, B. B. Khatri<sup>2</sup>, B. P. Sharma<sup>2</sup>, I. P. Gautam<sup>2</sup>, S. P. Dhital<sup>2</sup>, B. P. Luitel<sup>2</sup>, P. Bhattarai<sup>2</sup>, D. Chaudhary<sup>2</sup>, K. Upreti<sup>2</sup>, S. Ghimire<sup>2</sup>, T. Kawano<sup>1</sup>, M. Masayuki<sup>1</sup> (1. Faculty of Agriculture, Kochi University., 2. National Potato Research Program, NARC, Nepal)

### Introduction

Nepal is a sandwiched country between India and China. Potato is the fifth important food crop in terms of cropping area but stands second in terms of production as well as consumption in the country. Potatoes can be grown all round the year by exploiting different agro-climatic conditions in altitudes from 75 m to 4700 m above the sea level. Therefore, it involves higher importance for the food and nutritional security for the peoples of mountainous countries like Nepal. Annual potato consumption of Nepali citizen is 65 Kilograms. The contribution of potato to the national agricultural production is 9.4%.

### Materials and Method

This paper is based on the works of National Potato Research Program, one of the commodity programs of Nepal Agriculture Research Council (NARC) and publications related to potato research in Nepal.

### Results and Discussion

Potato is, believed to be, introduced to Nepal from India during 18th century. First official attempt for potato research and development began in 1962 with the support of India government. In 1972, Potato Development Program incepted and it is relocated to Khumaltar in 1974. Nigale farm in the central high hills and Jaubari farm at eastern high hills were established during 1980 to reinforce

potato research and development. After the establishment of Nepal Agriculture Research Council (NARC) in 1991, National Potato Research Programme under NARC has been carrying out potato research activities. Swiss Development Corporation (SDC) had supported almost for 20 years at initial stage starting from 1978. However, International Potato Center (CIP) has been continuously supporting for potato research.

National Potato Research Programme has been carrying out many research activities for development: high yielding, disease and insect pest resistances, red skinned varieties adaptable to different agro-ecological regions of the country. In addition, production of virus free seed tubers through tissue culture technology. Management technologies for diseases, insect pest and weeds are performing. As a result of painstaking effort 10 varieties has been released and almost 20 varieties have been registered. Important diseases are late blight, powdery scab, black scurf and important insects are leaf minor, potato tuber moth, white grub and red ants. Cultivated land and production have been continuously rising since 1985. However, the productivity of potato in the country (13.74 t/ha) is lower than those in developed country (>40 t/ha).

## 8. Development of Potato Varieties in Nepal

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### Introduction

Potato is the most important tuber crop and a staple food for more than a billion people worldwide. There are about 5000 potato varieties in the world and they belong to eight or nine species. Besides, there are more than 200 wild species and sub species, many of which can be crossbred to introduce desirable characters in to cultivars. Lack of suitable varieties is the major production constrain. Therefore, various efforts have been made to develop early maturing, high yielding, disease and/or insect pest resistant varieties. Other priorities of varietal improvement programs are: develop product specific processing cultivars with high dry matter and low reducing sugar content along with heat and drought tolerances. Potato is a self-pollinated crop, although, substantial amount of cross-pollination also occur. After flowering, potato plants bear small green fruits (berries), each containing about 300 seeds. Plants propagated from tubers are clones of the parent, whereas those propagated from seeds produce variation.

### Materials and Method

This paper is based on the works of National Potato Research Program (NPRP), one of the commodity programs of Nepal Agriculture Research Council (NARC). In Nepal, NPRP

carries responsibility for the development of potato varieties.

### Results and Discussion

Testing and selection for plants/progenies are the fundamental processes to obtain new varieties. Germplasms introduction, especially from CIP, Lima, Peru and inter-varietal hybridization are employed for developing of new varieties. The germplasms received from CIP are first propagated under screen-house conditions, followed by preliminary evaluation in observation nurseries (PON). Preliminary evaluation is carried out under field conditions at farm of NPRP, Khumaltar and Agriculture Research Station (Hort.) Pokhara. The superior clones from PON are further tested as Initial Evaluation Trials (IETs), and later as coordinated varietal trials (CVTs) in different collaborative farms and stations throughout the country including three agro- ecological zones. Most promising lines from CVT are further tested as coordinated farmers' field trials (CFFT). CFFT are carried out at out-reach research sites of different farms and research stations. Based on the data received from IETs, CVT and CFFT, new variety is released.