

Decision support system to increase water use efficiency in paddy production

THE INTERRELATIONSHIP of water use in the soil-crop-atmosphere with respect to the farming practices, the availability and economic of water, the input cost and the profitability are attributes of the intertwined complexity in rice production. The value accorded to water has changed with the rapid national development. A conflict of interest over water use between agriculture and other uses has become more acute, and should be resolved to codify knowledge. The application of IT to solve the burning issues of limited resource, and the role of water to supply the limited land for a greater output of rice with minimum capital input and environmental degradation, is warranted. A DSS model was developed based on the ranges of possibilities of water use efficiency in rice production, derived from a combination of field experiments and publications. The model addresses

the efficiency of water use in rice production, allowing users to estimate the possible limits, giving an intuitive feeling and “what if” situation for several probable scenarios. It explicitly deals with the aspect of water productivity for irrigation (WPI) due to variation in farming practices, giving tangible values relating yield, and water use, and the economic implications. It works on the frameworks of the boundary limit of the components of water balance at a farm level and the yield from selected crop varieties and farming practices. This model will help farm managers and policy makers to make fair judgement on the value of water in rice production and the realistic limits of water use efficiency limit.

News source: **MARDI, Malaysia**

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Pasta made from root crops

SEVERAL root crops can be processed into pasta. Specifically, ubi or yam (*Dioscorea alata*), gabi or taro (*Colocasia esculenta*), and carrot (*Daucus carota* L.) can be processed into pasta or noodles. Researchers M.P. Guanzon et.al. of the Sultan Kudarat Polytechnic State College, Sultan Kudarat, Philippines, found that noodles made from root crops could be stored for 4-5 months. The steps in processing root crops into noodles are as follows: Wash the different kinds of root crops in tap water to remove the dirt. Boil the roots. Peel the cooked roots and cut them into thin slices. Blend each kind of root separately to make a puree. Mix 250 g of each puree and 750 g wheat flour in a mixing bowl. Slowly add small amounts of water to dampen the mixture in a Hobart mixer. Knead thoroughly. Pass the kneaded dough through a noodle machine. Place 65 g in the frying pan for deep frying. Let the noodles cool, pack

them in polyethylene bags, then seal. Repeat these steps separately for each kind of root crop.

Gabi noodles are whitish in color, while noodles made of ubi are pale purple. Strands of these noodles are long, firm and tender, and are acceptable in general appearance and characteristics. Carrot noodles have an attractive yellow color, and the strands are just right in size, length, firmness and tenderness. They were found acceptable in terms of flavor and smell. Returns on investment were 78% for ubi, 74% for gabi and 68% for carrot.

News source: **The Philippine Council for Agriculture, Forestry and Natural Resources Research and Development**

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Insect pests of temperate fruit trees in Vietnam

TEMPERATE fruits such as plums, peaches and apples are becoming more important in high mountaineous regions in the north of Vietnam, to raise farm incomes and diversify of agriculture. In order to implement pest control programs for fruit trees in this region, surveys were carried out to identify the different kinds of pest. The following results were obtained.

1. Plum trees: In total, 66 insects and mites were identified, including *Phorodon humuli*, *Brachycaudus cardui*, *Colaspoides* sp., *Platymycterus sieveci*, *Phyllobius* sp., *Bactrocera dorsalis*, *Bactrocera pyrifolida*, *Tetranychus* sp., and *Polyphagotarsonemus latus*. Plum aphids, red mites and white mites were also found to be important. Twenty-six species of enemies of plum aphids were detected, most of which (22) belonged to the family *Coccinellidae*. To control

plum aphids, an IPM program was successfully carried out during 1998-2000. Aphid populations fell from 1,366 to 23 aphids per 100 leaves. Meanwhile, fruit yields increased from 54.5 to 69.1 kg/tree. Fruit quality was also much improved.

2. Peach trees: In total, 21 species were identified, including *Bactrocera dorsalis*, and *Bactrocera pyrifolida*.
3. Apple trees: In total, 16 species were identified, including *Erisoma lanigerum*, *Rhynchites* sp., and fruit weevils.

News source: **Department of Agriculture and Forestry Extension, MARD**

For further information: Journal of Agriculture and Rural development.

Development of automatic transplanting system for pot seedlings

THE SYSTEM consists of a pot supplying device, a soil filling device, a drilling device, and a transplanter. The pot supplying device provides pots by means of a pneumatic actuator. The soil filling device is capable of handling pots of different sizes. The drilling device makes holes into which seedlings are planted. The transplanter can plant 4 seedlings at one time. Pots 64 mm in diameter and 64 mm high held 104.0 g soil; pots 76 mm in diameter and 70 mm high held 165.2 g soil; and pots 89 mm in diameter and 78 mm high held

256.6 g soil. This transplanting system could produce 1,200 potted seedlings per hour, and the success rate of transplanting was about 96%.

News sources: **National Agricultural Mechanization Research Institute (NAMRI), Rural Development Administration, Suwon441-707, KOREA**

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