# KOKKEN & The World

Vol.7 October 2007

This newsletter is published biannually by the Japan Grain Inspection Association (KOKKEN) to offer a place for the exchange of information between all the people who concern the JICA Training Course “Post-Harvest Rice Processing.” KOKKEN introduces the latest information to you from Japan and accepts the latest news from the world.

## Contents



## MAFF officer’s Greetings

Dear Readers,

I am Fuminori MIYATAKE, Assistant Director, International Cooperation Division, the Ministry of Agriculture, Forestry and Fisheries. I should like to take this opportunity to express my thoughts about the role of rice post-harvest technology in the international cooperation.

Now the Japanese Government strives and promotes the spread of rice production such as NERICA to eradicate poverty and hunger in the African region. The production calorie per unit area of rice is higher than other grain, and long preservation is also more possible; then I think the both popularization of rice production and increasing production amount will surely contribute to the hunger cancellation in poverty area in Africa. However, I have felt enough of the difficulty to raise rice production in Africa through the work of the International Cooperation Division.

If the Japanese post-harvest technology is introduced in the region where rudimentary threshing or milling is operated, the improvement of the yield will be very expected. Infrastructure building such as irrigation and road construction, control of stored-product insects, introduction of technology or improvement of system, etc. are essential for rice production and prevalence of it in Africa, for the meantime, reducing post-harvest loss is the quickest and most effective way for increasing the rice consumption amount per person to prevent starvation. If the

yield improves by 10%, there is an effect similar to increasing production by 10%.

It can be said that the technology and the information which the Japan Grain Inspection Association (KOKKEN) owns, has improved the level of the engineers in Africa and accomplished an inscrutable contribution to the cancellation of "Starvation" in Africa.

About the rice of Africa, there are some countries in the west those are not in time in production and rice import increases. On the other hand, the spread of the rice diet is needed as there are regions where the custom of eating rice doesn't exist in the east. There are a lot of hurdles that we should still exceed. In such a situation, the seed of the technology that sows through this group training is expected for the flower to bloom of trainee's home country and to extend.
Moreover, the post-harvest technology contributes to quantitative and qualitative improvement of grains for farmers' income improvement, and the Japanese technology has been made the best use in some countries in other regions including Asia.

The Japan grain Inspection Association (KOKKEN) implements the JICA group training course "Rice Post-harvest technology" for 20 years and more than 200 participants from developing countries in the world return to home with the acquired technology and information in this course. They are surely supposed to make use of the technology and contribute to the development of the agriculture in their countries.

Though the group training by KOKKEN will end this year, the technology and information that KOKKEN has are extremely important for the agriculture of developing countries. I would like KOKKEN to cooperate and have some part in an individual course in future more than now.

Yours sincerely,

Fuminori MIYATAKE,
Assistant Director,
International Cooperation Division,
Ministry of Agriculture, Forestry and Fisheries (MAFF)

## Top Announcement

We regret to inform you that this year's course will be the last one for us, KOKKEN. JICA is going to reform the course next year and KOKKEN has decided to contribute to an international cooperation in another way.
We will bring this year's course to a successful conclusion and also we would like to express our sincere appreciation to you all for the support of this course.
The course will end but our friendship will last forever.

## This year's participating countries

Bangladesh, Cambodia, Laos, Nigeria, Papua New Guinea, Philippines, Solomon, Sri Lanka, Uganda
(It is the first time that we have a participant from Solomon Islands in this course.)

## This year's training schedule

【 】shows the title of each lecture.

| | | | |
|---|---|---|---|
| 1 | Sep. 6 | Opening Ceremony, Course Orientation, Evaluation Test, Individual Interview | Course Leader (Prof. Yasuhisa Seo) |
| | Sep. 7 | 1【Harvesting Machines of Rice】<br>Tsukuba Research Hall | Mr. Hidaka<br>- |
| 2 | Sep.10 | RRA | Mr. Tomioka |
| | Sep.11-13 | PCM session | Mr. Tomioka |
| | Sep.14 | Practice on Harvesting<br>Practice on Milling | JICA<br>Dr. Shimizu |
| 3 | Sep.18 | Visit MAFF<br>2【Supply-Demand Policy for Rice in Japan】 | -<br>MAFF Officer |
| | Sep.19 | Job Report Presentation<br>《welcome party》 | Course Leader |
| | Sep.20 | Inspection Business of KOKKEN<br>3【The Japanese Agricultural Cooperatives System】 | Mr. Kato<br>Prof. Shiraishi |
| | Sep.21 | 4【Rice Processing Industries in Japan】<br>Rice Cracker Producer | MAFF Officer<br>- |

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|---|---|---|---|
| 4 | Sep.25 | Tokyo Research Laboratory, KOKKEN | Mr. Yamaguchi |
| | Sep.26 | Tokyo Research Laboratory, KOKKEN<br>Central Research Laboratory, KOKKEN | Mr. Yamaguchi<br>Mr. Katsube |
| | Sep.27 | 5 [Rice Drying and Rice Dryers]<br>6 [Rice Husking and Huskers]<br>7 [Utilization of Husk] | Dr. Hachiya |
| | Sep.28 | KETT Electric Laboratory | - |
| 5 | Oct. 1 | 8 [The Theory and Technology of Rice Parboiling] | Prof. Kimura |
| | Oct. 2 | 9 [Solar Grain Drying]<br>10 [The Quality of White Rice in Japan] | Prof. Oshita<br>Mr. Mukai |
| | Oct. 3 | 11 [Easy Extraction and refining of Rice Bran Oil]<br>12 [Rice Bran Oil Manufacturing] | Prof. Takenaga<br>Mr. Igusa |
| | Oct. 4-5 | Practice on Drying | Mr. Noda |
| | Oct. 8 | Yatsugatake Agricultural School | - |
| 6 | Oct. 9 | Miso Factory / Rice Vinegar Factory | - |
| | Oct.10 | 13 [Post-harvest Losses of Rice] | Mr. Katsuragi |
| | Oct.11 | Move to Kobe | - |
| | Oct.12 | Shinmei Mill / Gekkeikan Museum | - |
| 7 | Oct.15-18 | Satake | - |
| | Oct.19 | Satake / Hiroshima Government Warehouse | - |
| 8 | Oct.22 | Otake | - |
| | Oct.23 | AIHO | - |
| | Oct.24 | JA Aichi / Farmers | - |
| | Oct.25 | Shizuoka Seiki | - |
| | Oct.26 | Move to Tokyo | - |
| 9 | Oct.29 | 14 [Dietary Life of Japan] | Prof. Hatae |
| | Oct.30 | 15 [Storage and Distribution of Rice in Japan]<br>Fukagawa Government Warehouse | Mr. Toyama<br>- |
| | Oct.31 | 16 [Basic Design of Rice Milling Facilities]<br>17 [Rice Marketing and Quality Control/ Inspection System] | Mr. Katsuragi<br>Mr. Hirashima |
| | Nov. 1 | Move to Tsukuba / Evaluation Test | - |
| 10 | Nov. 2,5 | Action Plan | - |
| | Nov. 6 | Action Plan Presentation | Prof. Seo |
| | Nov. 7 | Evaluation, Individual Interview,<br>Closing Ceremony | Prof. Seo |

## Evaluation Test for Participants

Participants are to take the evaluation test both in the beginning and end of the training course. The test is carried out to measure how much our information is transferred to participants.

Every year the average of first trial is about 65%, and finally it rises up more than 75%.

Let's try the abstracted 20 questions shown below.

(The correct answer will be published in the next number.)

***Select True / False or A, B, C***

| | |
|---|---|
| ***[Harvesting Machines of Rice]***<br>**1.** Harvesting losses by a combine are head loss, threshing loss and separating loss. | True False |
| ***[Practice on Milling]***<br>**2.** The rubber roll huller consists of two rubber rolls rotating in the opposite direction at different peripheral speed. | True False |
| ***[The Japanese Agricultural Cooperative System]***<br>**3.** Japanese agricultural co-operatives keep the character of private enterprises and nonprofit organizations. | True False |
| ***[Tokyo Research Laboratory & Central Research Laboratory, KOKKEN]***<br>**4.** Water-extracted acid degree rises in rice as storage period becomes long.<br>**5.** The organophosphorus agricultural chemicals are used as herbicide. | True False<br>True False |
| ***[Rice Drying and Rice Dryers]***<br>**6.** Cracking of rice kernels during drying is due to the steep gradient of the moisture content caused by drying between the surface and the interior of kernels. | True False |
| ***[Rice Husking and Huskers]***<br>**7.** The husking of paddy is carried out in the friction force. | True False |
| ***[Utilization of Husk]***<br>**8.** It is possible to produce combustible gas from paddy husk. | True False |
| ***[Kett Electric Laboratory]***<br>**9.** The maximum temperature difference allowed between a rice sample and a moisture tester should be within ( A 2, B 5, C 10)℃. | A B C |
| ***[The Theory and Technology of Rice Parboiling]***<br>**10.** The nutritional value of parboiled rice is higher than milled rice. | True False |

| | |
|---|---|
| ***[Solar Grain Drying]***<br>**11.** Drying constant is generally a function of grain temperature under the condition of thin layer drying. | True False |
| ***[The Quality of White Rice in Japan]***<br>**12.** Quality standard of marketed white rice by rice distributors in Japan regulates that the maximum limit of broken grain is<br>A 15% B 8% C 3%. | A B C |
| ***[Extraction and refining of rice bran oil]***<br>**13.** It is about 2.8MPa. that the minimum pressure breaks the cell wall of rice bran and bran oil flows out among the bran granules. | True False |
| ***[Rice Bran Oil Manufacturing]***<br>**14.** What pretreatment should we adopt before the rice bran oil extraction?<br>A reducing to powder<br>B cooking (wet heating and drying)<br>C steeping in water | A B C |
| ***[Practice on Drying]***<br>**15.** The pause of drying decreases the unevenness of moisture content inside individual paddy kernels and reduces the cracking rate of kernels. | True False |
| ***[Post-Harvest Losses of Rice]***<br>**16.** Post-harvest technology is defined as meaning collectively the technology pertaining to the overall series of processes that agricultural product goes through from the harvesting to the consumption or utilization as food/ processed product. | True False |
| ***[Satake Corporation]***<br>**17.** Rice whitener has 2 types; abrasive type and friction type. | True False |
| ***[Shizuoka Seiki Co., Ltd.]***<br>**18.** As the flat bed type grain dryer does not circulate the grains, the hot air temperature of it must be set higher than that of the recirculating batch type grain dryer. | True False |
| ***[Dietary Life in Japan]***<br>**19.** Rice is supply source of protein for people who eat it a lot, because rice contains 6-7% protein in it. | True False |
| ***[Basic Design of Rice Milling Facilities]***<br>**20.** When proper dried paddy has been husked and polished to be milled rice, the ratio of the weight between milling rice and paddy is called the milling yield. Generally the milling yield from Japanese short grain is around 72%, which is lower than that from long Indica grain. | True False |

## Activity of KOKKEN Laboratories

### *Confirm Rice Variety?*

Identification of Rice Varieties by DNA Analysis

### *Verify Food Safety?*

Pesticides Residues Analysis, Analysis of Mycotoxins

Heavy Metal Analysis, Microorganism Test

Packaging Test, Additives Test,

United Changing Inspection of Gene

### *Check Quality?*

Nutritional Component Inspection

Quality Inspection

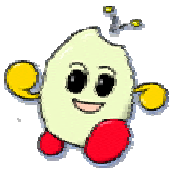
Rice Freshness Determination

### *Conform to Food Specifications?*

JAS Registration

Inspection of domestically-produced Sugar

Nutritional Component Inspection of Rice and Wheat



Your contribution is highly welcome.
K.K.

KOKKEN & The World Vol.7 October 2007
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