

## Welcome Address

**Toru Sato**  
**Deputy Director of FFTC**

Distinguished Guests and Scientists and Ladies and Gentlemen :

It gives me a great pleasure to be with you here at the opening of this international symposium. I should like to express my heartiest appreciation to the staff of the APWSS organizing committee who have done such an outstanding work in organizing this symposium. I should also like to express my sincere thanks to the Weed Science Society of Japan and Japan Association of Advancement of phyto-regulators for the support of this conference. On behalf of the Food and Fertilizer Technology Center, I should like to extend a cordial welcome to all the participants.

Frankly speaking, I have nothing to add to the excellent remarks of Dr. Kainuma. Indeed, this international symposium is held as a satellite symposium of the 15th Asian-Pacific Weed Science Society Conference which focuses on innovative weed management strategy for sustainable agriculture. Obviously, modern high-yielding agriculture depends greatly upon weed management and pest control technology as well as on large fertilizer applications and increase in the number of improved varieties which make this type of agriculture possible. For instance, the development of chemical weed control has enabled to achieve minimum tillage cropping of upland crops.

The same can be said about the direct sowing of paddy rice. The level of herbicide use has increased markedly in both developed and developing countries. In accordance with the demand for labour-saving agricultural technology which leads to high yield and good quality, the cost of weed control now is becoming a burden for the farmers over the Asia Pacific region. In addition, a number of other problems have arisen. We can probably assume that herbicides applied over many years may exert some adverse impact on the environment, affecting the macro- and micro-flora in and around fields, or causing the pollution of both surface water and groundwater.

New ecotypes of weeds resistant to herbicides may have developed. Nutrients from over fertilized fields often cause changes in the surrounding vegetation. Although thorough tillage using machines with a higher performance is very effective in suppressing the early growth of weeds, at the same time, it may often cause the erosion of surface soil by wind or rain. Minimum weeding which is, however, sufficient to allow good growth of crops is preferable for many environments especially slope-lands. These examples suggest that the type of weed control is closely related to other cultural practices. They also indicate the significance of integrated weed management which is less dependent on chemicals and other energy-based inputs. Weeds are very difficult to control. Their plant species are highly tolerant to adverse circumstances and often have developed diverse ingenious devices which allow them to survive while often attacked by various diseases and pests. However, I am optimistic that the discussions during this meeting on traditional weeding practices and efficient use of chemicals will pave the way for integrated weed management based on an ecological, biological and chemical approach.

I should like to thank again all the persons whose dedicated work made this meeting possible. I should also like to thank the distinguished scientists who have spent a great deal of time preparing their papers and who have come here to share with us their knowledge and experience. I hope that this meeting will provide information which will be of real help to the farmers who have enough skill and courage to practice sustainable agriculture. I also hope that the participants will have a very happy and interesting stay here in Japan.

Thank you.