Professor Kozo Ishizuka – An Appreciation from the Asian-Pacific Weed Science Society (APWSS)

By Dr. Nimal Chandrasena, Editor-In-Chief, APWSS

The APWSS has lost another one of its stalwarts, a former President, Professor Kozo Ishizuka, who passed away in April 2026. He was cremated on 8 April.

In the following tribute, I am noting down some personal memories, because he was a friend whom I deeply respected. I am also well aware that he was a friend and mentor to many other weed scientists as well, before he retired from the *Department of Applied Biochemistry* at the *University of Tsukuba* around 2000.

As a professor, he led his Department's research, leaving behind a significant corpus of work. Kozo was one of the most important researchers in Japan who worked on uptake, translocation and mode of action and metabolism of herbicides.

His well-published research portfolio shows that he was indeed an early pioneer in Japan who worked with the cutting-edge plant physiology and biochemistry research tools and techniques that emerged in the late-1970s through to the 1990s. He was also very keen on the differential responses of weedy 'biotypes' or 'ecotypes' to herbicides, which was an important area of study in those days.

Most important to APWSS was the leadership he gave to Japan and the Society three decades ago. Kozo Ishizuka was APWSS President from 1993 to 1995 and organized the 15th APWSS Conference in Japan, at Tsukuba, which was held from 24 to 28 July. As our readers know, the APWSS, formed in 1967, is currently in its 59th year of existence.

Professor Ishizuka was a very private person. We were unable to visit him in subsequent visits to Japan, despite making frequent enquiries. His obituary, from the family, received via the *Weed Science Society of Japan* (WSSJ), reads as follows:

> *[Obituary] We are deeply saddened to announce that Professor Ishizuka passed away on April 6th, 2026. We offer our heartfelt condolences. He was 93 years old.*
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> *In accordance with Professor Ishizuka's will, there will be no funeral service, and all offerings such as condolence money, flowers, and incense are declined. Therefore, respecting Professor Ishizuka's wishes, his family did not hold a funeral service, and he was cremated on April 8th by only his eldest daughter and eldest son. Furthermore, his family requested that we convey to everyone that Professor Ishizuka deeply appreciated the kindness shown to us during his lifetime, but they have firmly declined any memorial services. Therefore, we will not be holding a formal farewell ceremony. However, we understand that Professor Ishizuka would be pleased if you could each find an opportunity to offer a toast or other tribute.*

Kozo was a generous host who encouraged international exchanges across the Asian-Pacific region. When I was at the University of Colombo, I visited his Department at Tsukuba University twice, in 1989 and 1992. On both occasions, we spent hours discussing matters related to weeds and their management, especially the uptake, translocation and mode of action of herbicides, among other matters related to Weed Societies.

Herbicides were my speciality, too, in the early days, and there was much to discuss, I recall, especially the use of cell lines to study herbicide metabolism. As shown by Ishizuka's research (see later), he was extremely active in many areas of herbicide biochemistry and was happy to share that knowledge with other scientists.

In 1989, I informed him of the imminent plans in Sri Lanka to found the Weed Science Society of Sri Lanka (WSSSL), which occurred a year later, in 1990. I invited Kozo to visit Sri Lanka as our Chief Guest at the founding event of the Sri Lankan Society. However, his commitments at home did not allow him to travel at that time. Instead, Dr. Jiro Harada, another eminent Japanese weed scientist, from *Akita Prefectural University,* came to Sri Lanka and did the honours.

Kozo Ishizuka – a generous host. With the Editor, in 1992

The photo shows Dr. Hiroshi Matsumoto, the Editor (Dr. Nimal Chandrasena) and Professor Kozo Ishizuka in front of his Department at Tsukuba University in 1989.

Where Kozo Ishizuka's heart was is clear in the lead article of the first issue of the Japanese *Journal of Weed Biology and Management* (WBM), 2001; 1: 15–19, in which he explained the value and function of a learned Society and the Journal of such a Society. These views resonate with the much older APWSS and our Journal, which commenced in 2019.

THE FUNCTION OF THE LEARNED SOCIETY AND THE SOCIETY JOURNAL

> *The society journal is generally understood as one of the most important activities of a learned society. A learned society has firstly to provide opportunities for the exchange of information on research and investigation in relevant fields of science, resulting in the establishment of a new, independent speciality.*
>
> *Moreover, a society has a function also to promote and encourage the development of new areas of approach by the introduction of technologies and ways of thinking gathered from other fields of science.*
>
> *Another function of a learned society would be to take responsibility for evaluating priority and protecting the originality of the members' research and investigation from other claims. The Society journal should guarantee this evaluation and protection.*

In his article, Kozo Ishizuka recognized that the fast-emerging economies and agricultural research in Asian-Pacific countries could benefit greatly from technology exchange and transfer from developed countries.

Having had close connections with several developing countries, he was keen to promote knowledge-sharing, particularly on rice weed management and other areas of research between Japan and those countries, for mutual benefit. For this to occur, he advocated for increased international cooperation and information exchanges throughout the region, as follows.

TECHNOLOGY EXCHANGE AND TRANSFER IN ASIA-PACIFIC REGION

> *It could be said that weed science in Japan, for instance, seems very advanced and well-developed. But as agriculture in Japan actually faces many changes ahead and is much influenced by international economics and domestic urbanization, weed management in arable, as well as non-arable, land is expected to further develop in various directions. Even in rice paddy agriculture, there are still many difficulties to be overcome.*

There is a host of experiences and technologies, new or traditional, in agriculture in the Asia-Pacific region, which the Japanese themselves should learn more about, and the Japanese should promote exchanges and transfers among countries and areas in the region. In the region, there are many common issues in agriculture, and it may be profitable to compare examples.

As with information on weed propagation, the impacts of herbicides on human environments, such as the fate of herbicides in soils and water, the contamination of the surroundings and toxic effects on fisheries should also be compared among local areas. At present, there are accumulations of excellent research, investigations and technical information, which deserve to be valued highly.

Researchers, working on weed management or weed science in the region, have their own criteria for the evaluation of research and investigations.

In addition, there is unfortunately no internationally authored academic journal with a pre-review system, covering the Asia-Pacific region, whereas ***Weed Science*** *and* ***Weed Technology*** are *issued by the Weed Science Society of America and* **Weed Research** *by the European Weed Research Society, respectively, and each of them takes responsibility for the development of weed science and technology in each region.*

The WBM was born in 2000, and it is likely that Kozo Ishizuka may have been one of the strongest voices within the WSSJ at that time. In our case, it took another 19 years before the APWSS launched our own Journal **Weeds**. However, clearly, Professor Ishizuka should be remembered as a significant figure within our APWSS community and by the Japanese Weed Science Society. His vision, generosity and leadership gave direction and assistance to the development of the careers of many younger scientists, including mine.

We should gratefully remember his contributions and thank him for being a pillar of strength for the APWSS over a long period.

Some of Kozo Ishizuka's early research articles include the following:

Matsumoto, H. and Ishizuka, I. (1984). Effect of Temperature on Metabolism of Simetryn in Rice Cultivars. *Weed Research* (Japan), Vol. 29: 159-163.

Hisajima, S., Ishizuka, K., Yoeup Paek, K., Namwongprom, K. and Subhadrabandhu, S. (1989). "Multiple Shoot Induction from Seeds of Japanese Chestnut (*Castanea crenata* Sieb. et Zucc) and Successive Shoot Multiplication In Vitro". *Agriculture and Natural Resources* 23 (3)::267-272.

Matsumoto, H., Nishi, S., Ishizuka, K. (1991). Action of Thiocarbamate Herbicide Dimepiperate on Plant Metabolism. *Journal of Weed Science and Technology*, 36 (3): 257-265.

Lee, J. J., Matsumoto, H. and Ishizuka, K. (1992). Light involvement in oxyfluorfen-induced protoporphyrin IX accumulation in several species of intact plants. *Pesticide Biochemistry and Physiology*, 44 (2): 119-125.

Sakoda, M., Usui, K., Ishizuka, K., Harada, N., Ono, H., Uda, H. and Hasegawa, K. (1993). Structure-activity relationships of raphanusanins and their analogues. *Phytochemistry*, 32 (6): 1371-1373.

Pornprom, T., Matsumoto H., Usui, K. and Ishizuka, K. (1994). Characterization on Oxyfluorfen Tolerance in Selected Soybean Cell Lines. *Pesticides Biochemistry & Physiology*, 52(2): 107-114.

Seo, Shigemi, Ishizuka, Kozo and Ohashi, Yuko. (1995). Induction of Salicylic Acid β-Glucosidase in Tobacco Leaves by Exogenous Salicylic Acid. *Plant and Cell Physiology*. 36. 447-453.

Sunohara Y., Matsumoto H., Usui K. and Ishizuka K. (1996). Ethylene Action Inhibitors Suppressed Clomeprop Metabolite [2-(2,4-Dichloro-m-tolyloxy)Propionic Acid]-Induced Electrolyte Leakage from Radish Roots. *Weed Research* (*Japan*), 41(3): 234-240.

Pornprom T., Usui K., Matsumoto, H. and Ishizuka, K. (1994). Absorption and Metabolism of Oxyfluorfen in Tolerant Soybean Cells Weed Research (Japan), 39(3): 180-182.

Rho, Y.-D.; Matsumoto., H., Usui, K. and Ishizuka K. (1996). Involvement of Foliar Absorption and Translocation in Differential Response between *Bidens tripartita* and *B. frondosa* to Bensulfuron Methyl. *Weed Research* (*Japan*), 41:.211-215.

Deng, Fan, Usui, Kenji, Shim, Ie, Kobayashi, Katsuichiro and Ishizuka, Kozo. (1997). Difference in glutathione content, glutathione S-transferase activity and GS-pretilachlor content between rice and early watergrass seedings. *Journal of Weed Science and Technology*. 41. 295-301.

Ishizuka, K. (2001), Roles of the new journal. Weed Biology and Management, 1: 15-19.