

An Interview with 2016 IPNI Science Award Winner – Dr. Ismail Cakmak

The International Plant Nutrition Institute (IPNI) named Dr. Ismail Cakmak as the winner of the 2016 IPNI Science Award.

Since 2000, Dr. Cakmak has worked as a Professor of Plant Physiology at Sabanci University in Istanbul, Turkey. He received his B.Sc. from Cukurova University in 1980; his M.Sc. from Cukurova University in 1981; and his Ph.D. from Hohenheim University in 1988.

Cakmak is well known for his research on cereal crops and zinc nutrition. He directed a multi-institutional project, funded by the North Atlantic Treaty Organization (NATO), on the issue of zinc deficiency in Turkey (1993 to 1998). Following the identification of the zinc deficiency, zinc-containing NPK fertilizer use has increased from 0 to 600,000 t (annually) in Turkey.

The “HarvestZinc” international project was also developed by Cakmak under the HarvestPlus Program and was conducted in nine different countries (e.g., Asia, Africa, and South America). The focus was on using innovative application methods and micronutrient fertilizer combinations.

Q. Why did you launch the HarvestZinc project?

One third of the world populations suffers from micronutrient deficiencies, or hidden hunger. The problem particularly exists in the developing world where cereal consumption is very high. Our aim was to improve zinc and iodine status of the plant. There are two options, you can develop a breeding program, but that is a long-term process. The short-term solution is agronomic; we can apply zinc or iodine-containing fertilizer to the plant to enrich the edible parts of the plants quickly and it works very well.

Dr. Cakmak is also known for his work on the adverse effects of reactive oxygen species in plants that are under mineral nutrient deficiencies (e.g., zinc.). It was found that the adequate supply of mineral nutrients is critical for a plant's survival under stressful environmental conditions. He has published both research and review papers on this topic that have gained international attention.

Q. What aspect of your research has given you the most satisfaction?

In the past 30 years, I've focused mainly on zinc, a little bit on other nutrients, but mainly zinc. For the next 10 to 15 years, I will continue to focus on zinc. Again, focusing on a certain issue is very important because you can conduct more useful research, make more advancements, and generate more useful data when you have focused research.

Cakmak has authored over 160 peer-reviewed publications, received over 17,800 citations (Google Scholar), and authored/co-authored seven book chapters. He has a Hirsch Index of 69 (Google Scholar), which is a very high value within his field. He has been recognized with several awards including the Alexander von Humboldt Foundation Georg Forster Research Prize, 2007 Australian Academy of Technological Sciences and Engineering Crawford Fund “Derek Tribe Award Medal”,



the IFA-International 2005 Crop Nutrition Award and the Scientific and Technical Research Council of Turkey Science Prize. Since 2012, he has been an elected member for “The Academy of Europe” and “The Science Academy” in Turkey. Very recently, he has received the World Academy of Sciences Prize, 2016 in Agricultural Sciences.

Q. What are your thoughts on the future challenges for agronomy?

One of the points we should focus on in the future is related to the plant, we focus a lot on soil. We study potassium dynamics, concentration, uptake, and leaching. Most of the research focuses on soil data and very little on plant data. Scientists and research programs should also focus on data related to plant growth and to the potassium nutritional status of the plant.

Q. What advice would you give young scientists?

I think young scientists should always dream. Without a dream or goal, it is not enjoyable research. They should be focused. My observation today is that many scientists focus on too many topics. They should always have an idea and they have to listen to people and to farmers. The research they are doing should have some impact on society and the environment. Applied science is very important, we should not overlook it, but part of the science should have some value to the end user.

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The IPNI Science Award is intended to recognize outstanding achievements in research, extension, or education; with focus on efficient management of plant nutrients and their positive interaction in fully integrated cropping systems that enhance yield potential. Dr. Cakmak receives a special plaque along with a monetary award of US\$5,000. A committee of noted international authorities selects the recipient.

Private or public sector agronomists, soil scientists, and crop scientists from all countries are eligible for nomination. More information about the IPNI Science Award is available at <http://www.ipni.net/awards>. 