



## Digvir S. Jayas, PE

**Digvir S. Jayas, PE, ASABE Fellow**, is the recipient of the 2023 John Deere Gold Medal for establishing horizontal grain drying principles for uniform and energy-efficient drying and for developing engineering practices to reduce significant grain storage losses globally.

Jayas is the president and vice-chancellor of the University of Lethbridge and distinguished professor emeritus of the University of Manitoba (UM). Jayas provides leadership to the University of Lethbridge. Jayas supervises graduate students and postdoctoral fellows and runs a research program dealing with drying, handling and storage of grains as well as digital image processing for automation of quality monitoring and grading of grains/foods.

Jayas has demonstrated through experimental studies and by developing mathematical models that insect movement in bulk grain can be modelled as diffusion phenomenon. This has allowed simultaneous solution of heat, moisture, gas, and insect movement in bulk grain and has helped in the development of an integrated mathematical model of stored-grain ecosystems. His team is leading global development of mathematical models of stored-grain ecosystems. He was first to demonstrate experimentally that the resistance to airflow through bulk grain in the horizontal direction is about one half of the resistance to airflow in the vertical direction. Results from his research have been incorporated in the standards of the ASABE, informing design of grain drying, handling, and storing systems. He has also developed a technol-

ogy to control insects using carbon dioxide. This technology is used by organic farmers and many grain handling facilities to control insects in grain. He also led the development of Canadian Wheat Board Center for Grain Storage Research at the UM.

As a 42-year member of ASABE, Jayas has served on several committees of ASABE and other organizations. He served as the president of the Agricultural Institute of Canada, the Canadian Institute of Food Science and Technology, the Canadian Society for Bioengineering, Engineers Canada, Engineers Geoscientists Manitoba, and the Manitoba Institute of Agrologists. He has also served in leadership roles for the Natural Sciences and Engineering and Engineering Research Council of Canada; TRIUMF; RESOLVE; and the UM's Smartpark.

Jayas has authored or coauthored over 1000 articles including 435 peer-reviewed journal papers, 14 books, and 61 chapters in books. He has received many professional awards including from the Agricultural Institute of Canada, Royal Society of Canada, Canadian Academy of Engineers, Engineering Institute of Canada, and the ASABE. He is fellow of 14 technical and professional societies.