**Lakehead University Agricultural Research Station (LUARS) Thunder Bay**

*Dr. Tarlok Singh Sahota CCA*

**A brief history:**

* LUARS was known as TBARS (Thunder Bay Agricultural Research Station) before it was taken over by LU in April 2018.
* TBARS was opened by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) on 1st August 1990; though the first plots were laid out in 1991.
* OMAFRA transferred the TBARS to the University of Guelph in 1996.
* University of Guelph closed TBARS in October 2002.
* Area farmers resented closure of TBARS, organized themselves into Thunder Bay Agricultural Research Association (TBARA), a not for profit corporation.
* TBARA opened TBARS in April 2003 with one million dollars funding from the Northern Ontario Heritage Funds Corporation (NOHFC) with the condition that 75 % funding will be provided by NOHFC and 25 % will be contributed by TBARA, either in kind or in cash.
* TBARA didn’t retain the Researcher at TBARS, though retained the two Technicians. Position for the researcher was advertised in 2003, some 80 candidates applied but no one was selected. TBARA readvertised Research and Business Manager’s position in October 2003, interviews were held in December 2003 and Dr. Tarlok Singh Sahota, current Director LUARS, was hired.
* Dr. Sahota took over TBARS in January 2004 and was promoted to Director of Research and Business in 2008. Dr. Sahota was able to obtain funding for two terms of three years each from the NOHFC. NOHFC became strict for in cash contributions with each funding term. TBARS had always had carry over funds at the end of each funding term due to earned research dollars by Dr. Sahota through collaborative research projects and industry contribution.
* In 2015, NOHFC demanded 50 % cash contribution from TBARA for further funding to TBARS. It wasn’t possible for TBARA to raise 50 % cash funding at its own and the situation came to closure of TBARS.
* Dr. Sahota met Dr. Andrew Dean, VPRI, LU quite a few times in 2015 asking Dr. Dean to take over TBARS.
* With Public pressure on politicians for continuity of TBARS, OMAFRA gave $200,000 funding to TBARS for its operations in 2016 and 2017 and later in fall 2017 OMAFRA announced $1.65 million funding to LU for taking over and operating TBARS for 5 years.
* LU took over TBARS in April 2018, renamed it LUARS and kept the staff at that time including Dr. Sahota Director LUARS and two Technicians.
* LUARS has completed first funding term from OMAFRA in March 2023 and has signed an agreement with OMAFRA for the same amount of funding this summer.

**Mission Statement:**

*LUARS is committed to the establishment, operation, promotion and transfer of agricultural research for the further development and diversification of the agricultural industry.*

**LUARS Staff**: Please see at: <https://www.lakeheadu.ca/centre/luars/who>

**LUARS Research Partners**: Please see at: <https://www.lakeheadu.ca/centre/luars/funding-research>

**Topics of Research**: LUARS has been doing research and extension broadly on the following topics:

* Evaluation and introduction of new crops for diversification of the farming systems
* Evaluation and introduction of new high yielding, disease(s) and lodging resistant crop(s) varieties.
* Better Nutrient Management Practices for increased yields and quality of produce, and minimizing environmental impacts.
* Evaluation of new agricultural products including nutrients sources, Plant Growth Regulators, bio-stimulants and other bioproducts for improved yields and soil health.
* Other Agronomic practices.

**A short video on LUARS could be seen at**: <https://www.youtube.com/watch?v=l6h4A5PhQ1o>

**Main Contributions of LUARS:**

* Identification and remediation of sulphur, zinc and boron deficiencies.
* Diversification of cropping systems: LUARS introduced several crops (winter cereals – wheat, rye and triticale, Hard Red spring wheat, durum wheat, malting barley, canola, flax, sorghum Sudangrass and Galega) in the area.
* Based on winter wheat data from LUARS, Agricorp included winter wheat in the list of crops for Crop Insurance.
* Development and introduction of alternate tillage systems that reduced fuel and time consumption by 30-40 %.
* LUARS has about 20 years data on straw production from different crops/crop varieties. Straw is used as a bedding material for the cattle.
* LUARS introduced dozens of crop varieties. Every year farmers have been changing or adding new crop varieties to their crop mix.
* Introduction of new fertilizers such as ESN and Ammonium Sulphate; LUARS was the first in ON to initiate research on ESN in field crops in 2006.
* Better nutrient management practices such as applying nitrogen (N) from multiple N sources (urea, ESN and ammonium sulphate) rather than a single source of N (the practice is followed all over ON) and seed row placement of ESN. The practice(s) not only improved crop yields (up to 0.4 MT/acre in canola) but also the protein content, especially in alfalfa/grasses lowering the need for supplemental feed.
* Due to addition of high yielding varieties and better nutrient management practices, crop yields consistently improved over the years. For example, cereal crops grain yield rose from 1-1.5 MT/acre in 2004 to 2.5-3.0 MT/acre in 2022. Canola seed yield has been averaging ~1.5 MT/acre; 0.5 MT/acre higher than the Provincial average.
* Since there is no OMAFRA Specialist in the area, Director LUARS who is also a Certified Crop Advisor is the only expert in the area available to farmers for taking informed decisions.
* LUARS has provided other researchers from LU to conduct their research at LUARS.
* Training/guiding of Students – during the past 5 years:

-16 MSc students from the Faculty of NRM completed their Summer Internship at LUARS who were trained in small plots research.

-4 MSc students and one PhD student worked at LUARS/and farmers field for their theses. Two MSc and one PhD student have completed their degrees. Director LUARS was a co-supervisor with Brian McLaren for all these students.

**Awards/Honours obtained by Dr. Sahota, Director LUARS in the recent past:**

* Canadian Society of Agronomy (CSA) Fellow 2018
* Distinguished Agronomist Award 2021
* Induction to the Ontario Agricultural Hall of Fame 2022-2023. Dr. Sahota was the first one to be inducted into this program from Thunder Bay, since 1980.