**Take Home Messages from LUARS Research 2024\***

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**Best Varieties – Grain/Seed Crops:**

* AAC Cranbrook, Esma and Synasolis barley varieties could be recommended for cultivation on farms.
* Among the malting barley varieties, CDC Copper, which is a dual purpose variety (both grain and forage production), could be recommended for cultivation on farms. Its seed could be procured from FP Genetics!
* Area producers could grow AAC Westking, Brandon and AAC Wheatland VB spring wheat varieties.
* Mixed cultivation of wheat varieties is not recommended!
* Oat growers could try growing AAC Kongsore and Akina for grain production and AAC Reid for straw/and forage production!
* AAC Coldfront may be preferred for winter wheat cultivation.
* Considering both grain (8.24 MT/ha) and straw (9.92 MT/ha) yields, KWS Serafino winter rye can be recommended for cultivation on farms!
* Winter barley and winter canola didn’t survive Thunder Bay winter.
* NSC Culross RR2X, EXP008-23XF and S007-A2XS soybean varieties could be recommended for cultivation on farms!
* Among flax varieties, CDC Esma, CDC Sorrel and CDC Dorado could be recommended for cultivation on farms.
* Area growers could try cultivating Invigor® L340PC, DKLL-82SC and Invigor® L350PC Liberty canola varieties on their farms in 2025!
* Though I generally don’t recommend growing Roundup Ready Canola, those who decide to grow RR canola, could choose DK902TF for cultivation on their farms.
* Those who wish to grow Clearfield canola could prefer 5545CL.

**Best Varieties – Forage Crops:**

* Considering the dry matter yield, protein content and RFV, Boroe, CDC Bow, Synasolis and CH1209-1 barley can be recommended for forage production!
* Considering the dry matter yield and protein content over three years, CDC Copper malting barley can be recommended for forage production!
* Considering both the dry matter yield and the protein yield, Revolution MD alfalfa could be recommended for cultivation on farms!
* Higher yield and higher protein content in Galega than in alfalfa, could make Galega a better fodder choice than alfalfa!
* Trefoil produced significantly lower dry matter yield than Galega and alfalfa.
* Considering the yield from the three years, DKC29-89RIB and DKC30-07RIB could be recommended for silage corn production!
* Considering the total dry matter yield, protein content in the first cut and RFV in both the cuts, SS2 BMR sorghum Sudangrass can be recommended for cultivation on farms! Optimum seed rate in sorghum Sudangrass was found to be 70 kg/ha.
* Among the forage legumes mixture or legume grass mixtures, mixed cultivation of Grazing Alfalfa (75% seed rate) and AAC Sainfoin (25% seed rate) produced the highest dry matter yield.

**Fertilizer Management Practices and Growth Regulators/Biostimulants (Grain/Seed crops):**

* Wheat should be seeded as soon as possible in the spring, 80 – 120 kg N/ha was sufficient for wheat production and no Manipulator spray was required for a dwarf wheat variety such as AAC Wheatland.
* Farmers should try to seed barley by May 15, and apply 80 kg N/ha. Manipulator/Moddus spray should be done only if there is a risk of lodging. Lodging risk increases with late seeding and at increased rate of N (160 kg N/ha).
* Barley could be preferred to wheat in a dry year.
* UtrishaTM N that is claimed to fix atmospheric N in plants didn’t increase wheat grain, straw and biomass yields.
* Application of 36 kg S/ha; 12 kg/ha from ammonium sulphate and 24 kg/ha from MAP + MST proved better than either of the two fertilizers applied alone @ 36 kg S/ha for canola production and for its residual effect on the following wheat and canola crops; i.e. in the canola-wheat-canola cropping system.
* Averaged over 2023 and 2024, application of urea @ 60 kg N/ha + ESN @ 60 kg N/ha at seeding gave the highest grain (6.77 MT/ha), straw (11.8 MT/ha) and biomass (18.3 MT/ha) yields of winter wheat.
* Considering both the seed and the straw yields, farmers could try application of N @ 270 kg N/ha to canola; two third from urea and one third from ESN. Averaged over 4 years, 270 kg N/ha gave higher seed yield than 180 kg N/ha.
* Averaged over 2023 and 2024, in an experiment on N sources and blends @ 180 kg N/ha, highest seed (4.45 MT/ha) and biomass (12.1 MT/ha) yields were obtained with Urea @ 120 kg N/ha + PurYield @ 60 kg N/ha. Farmers can try replacing ESN with PurYield, if PurYield is less costly than ESN.
* Application of B at rates higher than 1 kg/ha didn’t increase the canola seed yield over 1 kg B/ha.
* TAPP, a new P fertilizer, was not better than conventional P fertilizer for wheat and canola production.

**Bio Products/Other Agronomic Practices:**

* Winter rye, winter wheat, spring wheat, spring barley, canola and soybean didn’t benefit much from the application of Holganix 800+(a bacterial product).
* Fungicides (Stratego, Prosaro and Caramba) sprays lowered Septoria and FHB ratings in spring cereals. However, their benefit for cereals yield increase was uncertain except in oats, where these resulted in a significant increase in grain, straw and biomass yields. Fungicides sprays are however recommended in all cereal crops to cover the risk of loss in yield due to diseases infection.
* Three years results show that winter rye cover cropping lowered the grain/seed yields of the spring crops (wheat, barley, canola, soybean, flax and lentils) as compared to the fallow plots.
* Maximum yield of winter wheat was obtained by its seeding on August 25 and that of winter camelina by its seeding on September 5.

*For details, please check LUARS Annual Report 2024.*

*\*Note presented at the AGM of the TBSCIA at Rosslyn Hall, Thunder Bay, on December 10, 2024!*