**Conclusions and Recommendations from LUARS Research 2021\***

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* Grow Rednet that gave highest grain (5.69 MT/ha) and straw (7.01 MT/ha) yield among the new Canadian Western Red Spring (CWRS) wheat varieties. It also has an elevated resistance to Fusarium Head Blight. Two other good CWRS varieties are AAC Wheatland (that has Midge resistance) and AAC Brandon. Midge is not an issue in our area; however what if it comes? Three years average grain yields from AAC Wheatland and AAC Brandon were 5.12 and 4.93 MT/ha, respectively.
* Replace part of the area under CDC Bow (2 row barley) with AB Brewnet (also a two row barley variety). Averaged over 2020-2021, the two varieties gave similar grain yields (CDC Bow 6.55 MT/ha and AB Brewnet 6.52 MT/ha), but straw yield was 1.42 MT/ha higher from AB Brewnet than that from CDC Bow.
* For forage (silage) production, grow AAC Bell, a two row feed/forage barley variety, that gave 11.29 MT/ha dry matter forage yield with 11.3 % protein or CDC Copper, a two row dual purpose (malting and feed) barley variety that recorded 11.34 MT/ha dry matter forage yield with 10.5 % protein. Forage dry matter yield from CDC Bow was 10.15 MT/ha with 12.1 % protein.
* Oat growers could try CDC Endure (grain yield 5.59 MT/ha) in 2022, which seemed to out yield AC Rigodon (5.48 MT/ha) in grain yield.
* Winter wheat growers could continue with AAC Gateway that had three years average grain yield of 6.05 MT/ha. Mark Veurink obtained 2.8 MT/acre (= 7 MT/ha) grain yield from AAC Gateway last year.
* McKeller winter barley produced the highest grain yield (4.52 MT/ha). Yield could be better with the new seed. The seed used by us was several years old.
* Averaged over three years, grain yield from the four winter rye varieties (Guttino, Hazlet, Bono and Brasetto) were similar and ranged from 3.99 MT/ha in Brasetto to 4.45 MT/ha in Guttino.
* Among the 26 soybean varieties, S001-D8X(4.46 MT/ha), S007-A2XS (4.43 MT/ha), and Hart R2X(4.32 MT/ha) recorded the highest grain yields!
* Averaged over 2019 to 2021, there was no significant difference in the grain yields of the 10 edible bean varieties (for details, see LUARS Annual Report 2021).
* Liberty canola varieties that topped in the seed yield in descending order were L252, L340PC and L230/P501L.
* In Roundup Ready canola varieties, CS2600CR-T gave the highest seed yield (4.32 MT/ha) followed closely by LR344PC (4.03 MT/ha) that has both Liberty and Roundup resistance traits. CS2500CL appeared to be the best Clearfield canola variety.
* There was no significant difference in the dry matter yield from alfalfa varieties. However, considering the RFV and protein content, Response WT and WL319HQ (Roundup Ready) could be recommended for cultivation on farms.
* Sainfoin produced 753-1,060 kg/ha higher dry matter yield than other forage legumes (alfalfa, Galega and red clover). A 25-30% mix of Sainfoin with alfalfa can overcome bloat problems from alfalfa. Farmers may therefore consider growing it in mixture with alfalfa.
* In corn silage varieties, highest dry matter yields were recorded with DKC26-40RIB (24.9 MT/ha) and PS 2320 RR (24.8 MT/ha). Since the ADF and NDF values were lowest and the TDN and Energy values were highest (indicating an excellent palatability) in PS 2320 RR, corn growers could prefer PS 2320 for cultivation on their farms. Its seed is available at DLF Pickseed dealers.
* Kernza, a perennial cereal, could be a good choice for cultivation in mixture with alfalfa.
* Wheat following canola supplied with N @ 270 kg/ha or more could do without application of N!
* Urea superU showed good promise in canola and produced highest seed yield @ 270 kg N/ha. Based on two years average, 270 kg N/ha could be recommended for canola production.
* Manipulator spray in AAC Wheatland wheat or Synasolis barley didn’t increase the grain yields, though it depressed the plant height by 3 cm. Neither Manipulator nor Moddus improved AAC Brandon wheat or Boroe barley grain yields; though the PGRs lowered the plant height by 4-5 cm. Increasing N rate from 80 to 160 kg N/ha didn’t increase grain yields of wheat and barley.
* Lowering the rate of NPK fertilizers application from 100 % to 50 % lowered the grain yield of winter rye by 1 MT/ha. Grain yields weren’t affected significantly with variation in seed rates from 50 to 75 to 100 % of recommended seed rate.
* Canola seemed to benefit from winter rye cover cropping (by 0.59 MT/ha seed yield). However, winter rye cover cropping without application of NPK fertilizers to winter rye didn’t increase yields of canola/other crops as compared to the fallow (no cover cropping).
* EXCELIS MAXX treated urea showed some promise in canola. New fertilizers Apex/and Top Phos and Biostimulants (FL Gold, IYRS and Genea) didn’t prove to be beneficial.
* MAP + MST wasn’t better than ammonium sulphate as a source of S for canola.
* Ammonium sulphate @ 12 kg S/ha + SYMTRX S10 @ 24 kg S/ha gave higher seed yield of canola than ammonium sulphate at equal rate of S (36 kg S/ha). However, when the two fertilizers were compared individually @ 36 kg S/ha, ammonium sulphate gave higher seed yield than SYMTRX S10.
* Lentils didn’t respond to application of N, P, K and S.
* Highest alfalfa dry matter yield (7,450 kg/ha) was obtained by missing one row after every two rows and S @ 48 kg/ha – half applied in early spring and half after the first cut.
* Fungicides (Stratego, Prosaro and Cramba) spray in wheat, barley and oats didn’t affect the diseases incidence or grain yields. Oats out yielded barley and wheat.
* Increasing seed rate by 25-50 % didn’t help in arresting yield loss by delay in seeding winter rye from September 25 onwards.
* Averaged over crops (wheat, barley, soybean and canola), EcoTea seed treatment didn’t affect grain/seed, straw and biomass yields.
* Borage was hit by a killing frost on October 21 at peak flowering and didn’t set seeds.
* Two winter canola varieties (Mercedes and Inspiration) didn’t survive during our winter.
* Organic matter (3.8 %) and pH (5.8) were lowest with annual cropping as compared to long term forage legumes or grasses cropping (organic matter 5.3-5.6 and pH 6.0-6.5). However, longer term alfalfa and Galega minimized the P (6 ppm) and K (58 ppm) contents of the soil.

*Best of Luck for the Season 2022!*

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