**LUARS Research 2023 – Varieties and Practices that can continue on or can be taken to farms\***

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* Six row barley varieties: *Chambly*, *Synasolis* and *Amberly* could be recommended for cultivation on farms for grain production. *Synasolis* could be preferred over others because of its highest straw yield (in addition to high grain yield). Farmers can continue or start growing *PSL Kerns* (that outyielded *Synasolis* and also *CDC Bow* at LUARS) on their farms! For forage production, considering the dry matter yield, *Amberly*, *Oceanik*, *Boroe* and *AB Tofield* (a dual purpose grain and forage variety) can be recommended.
* Two row barley varieties: Considering the grain yield from the past three years, *CDC Bow*, *AAC Synergy* and *CDC Copeland* are recommended for cultivation on farms. For forage production, considering the dry matter yield and RFV over three years, *CDC Copper* can be recommended! *CDC Copper* is a dual-purpose variety (grain and forage production).
* Spring wheat varieties: Area producers could grow *AAC Starbuck*, *Brandon*, *Rednet* and *AAC Wheatland VB*. *AAC Starbuck* and *AAC Wheatland* could be preferred, if high straw production is also a consideration.
* Oat Varieties: Oat growers could try growing *AAC Kongsore*, *Kalio*, and *AAC Excellence* in 2024.
* Winter wheat varieties: Farmers could continue with *AAC Gateway* and could try *AAC Vortex*.
* Farmers may try cultivating *McKeller* winter barley.
* Farmers can continue growing *Hazlet* winter rye and try a new variety *KWS Serafino*.
* Area producers could grow *Bourke R2X* and *Lono R2* soybeans on their farms!
* Canola: Area growers could try cultivating *P501L*, *P506ML* and *Invigor® L350PC* (listed in descending order of seed yield) on their farms in 2024!
* Those who decide to grow RR canola, could choose the new variety *DK901TF* for cultivation on their farms.
* Those who decide to grow Clearfield canola should prefer *5545CL* that recorded the highest seed yield over the past three years.
* Alfalfa varieties: Considering the dry matter yield, protein content and RFV, *Response WT*, *Elite* and *AAC Trueman* can be recommended for cultivation on farms. Farmers could also try *Revolution MD* and *Shockwave BR*.
* Silage corn varieties: Considering the yield from 2021 and 2023, *DKC26-40RIB*, *DKC29-89RIB* and *DKC30-07RIB* could be recommended for cultivation on farms!
* Sorghum Sudangrass Varieties: Farmers could choose *SS2 BMR* that registered the highest dry matter yield (10.8 MT/ha) in two cuts.
* *Sorghum Sudangrass* seeded at 50, 75 and 100 % of the recommended seeding rate (45 kg/ha) produced similar dry matter yields (4,948 – 5,255 kg/ha). However, seeding *Sorghum Sudangrass* at 100 % of the recommended seeding rate is recommend because at thisseeding rate it had the highest protein content (20.7 %) and the RFV value (165).
* Combined cultivation of *alfalfa and sainfoin* that outyielded other forage mixtures could be recommended!
* Wheat and barley should be seeded as early as possible in spring and could be supplied with up to 160 kg N/ha and sprayed with growth regulators (*Moddus/Manipulator*) on the varieties susceptible to lodging and with fungicides (at least *Stratego* and *Prosaro*, if not *Stratego*, *Prosaro* and *Caramba*) to cover the risk of foliar fungal diseases and FHB.
* Fungicides (*Stratego*, *Prosaro* and *Caramba*) spray on cereals could lower the Septoria and FHB disease rating to zero! A minimum of two fungicides (*Stratego* and *Prosaro*) should be sprayed on the cereals.
* Considering both the seed and the straw yields, farmers could try application of N to canola @ 270 kg N/ha; two third from urea and one third from ESN.
* Farmers can try replacing *ESN* (44-0-0) with *PurYield* (45-0-0), if *PurYield* is less costly than ESN.
* S to canola should be applied @ 36 kg S/ha either through *ammonium sulphate* alone or through blends of *ammonium sulphate* and *MAP + MST*. *MAP + MST* or its blends with *ammonium sulphate* had a significant positive effect on the seed yield of the third crop of canola.
* Farmers could also try applying 36 kg S/ha to canola - 1/3rd of S through *SymTRX10* (10 % S and 16 % organic matter) and 2/3rd S from *ammonium sulphate*. *SymTRX10* alone was no better than *ammonium sulphate*!
* *Alfalfa needs 36 kg S/ha to produce maximum economic dry matter yields.* Farmers could try seeding alfalfa by missing one row after every two rows; in 2 out of 3 years the practice gave higher yield than seeding at regular 15 cm row spacings.
* Seed treatment of wheat with *EcoTea* @ 4 gram/kg seed is recommended. Averaged over three years, the practice increased wheat grain yield by 1.22 MT/ha, straw yield by 1.32 MT/ha and biomass yield by 2.49 MT/ha). There was no yield benefit of treating barley, canola and soybean with *EcoTea*. Might sound surprising, but that’s what it is!
* Farmers could try soil application of *Holganix 800+* @ 0.625 l/ha before seeding canola. The practice increased the canola seed yield by 1.07 MT/ha, straw yield by 2.06 MT/ha and biomass yield by 3.13 MT/ha at LUARS. Surprisingly, wheat and barley didn’t benefit from the application of *Holganix 800+*.
* Winter rye cover crop seemed to lower the seed yield of the following canola crop by more than half a MT/ha. Therefore, avoid growing winter rye cover crop before seeding canola!

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