

TBARS Research 2013 Presentation – Conclusions/Take Home Messages

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- Replace Sable with WR859CL at least partly, if not entirely!
- Other spring wheat promising (new) varieties were: CM 9004, Megantic, HY1312, AAC Proclaim/Innova.
- Spelt, Red Fife and Kamut had similar grain yields.
- Durum wheat: Enterprise, a western variety equaled Ontario's Hallmark as also Sable in grain yield.
- T200 and Bumper Triticale showed good production potential.
- Top barley varieties: Amberly, Synasolis & Oceanik. Chambly at 6t/ha grain yield in 2013 has potential!
- Malting barley: AAC Synergy out yielded Celebration.
- Oceanik in 6 row barley and TR0629, Conlon & CDC Coalition (two row) had the highest forage yield. Overall, 2 row barley gave ~1 t/ha more yield than 6 row barley varieties. However, CDC Coalition is the best dual purpose variety (silage and grain)!
- Oat varieties: Vitality, Dieter and Robust hold promise. AC Rigodon sustained high grain yields over the years.
- Grain yield of winter rye hybrids ranged from 8,120 to 9,380 kg/ha; Hazlet, Brasetto & Guttino (8,511-9,209 kg/ha) were equally good!
- TH33003R2Y soybean recorded the highest yield!
- Soybean grain yield was highest by seeding with Vitaflow treated seed at recommended PK; Rhizobium inoculants, Fertilizer N or S or B or fungicide spray or increasing PK rates didn't help in adding to the yield.
- Averaged over 5 years, disking in fall and spring/or double disking in spring equaled conventional tillage in barley yield (> zero tillage).
- Winter wheat: Keldin, Priesley, Moats & Sunrise produced higher grain yield than CDC Falcon.
- Drilling, broadcasting or banding of N produced similar grain yield, except in urea where drilling at rates >40 kg N/ha had depressed the grain yield.
- Winter wheat forage yield was up to 1t/ha higher in rotations that had corn or soybean or both.
- Averaged over 5 years, Sorrento and Fusion field peas had more sustainable yields (4.6-4.8 t/ha).
- Chickpeas: Corinne & Vanguard (Desi) and Frontier & Luna (Kabuli) produced 3.37-3.71 t/ha grain yields (averaged over 3 years). CDC Orion gave a record grain yield of 6 t/ha in 2012!
- Lentil: Rosetown & Viceroy produced the highest grain yields (~3,000 kg/ha; averaged over 3 years).
- Edible Beans (Pintoba & Earlired) could produce 3400-3500 kg grain yield/ha.

- Spring barley + winter wheat (75:85) gave ~1 t/ha extra forage yield than the 75:75 mix. PK @ 1.5 times in year 1 & N @ 1.5 times in year 2 (to wheat), could increase forage yield by 1 t/ha in each year.
- N @ 120 kg/ha and 15-24 kg S/ha could be optimum for canola. Significant positive residual effect (760 kg/ha) of S applied in previous years was noticed in timothy.
- Increase rate of AS application to alfalfa from 100 to 150 kg/ha. Potassium Sulphate isn't better than ammonium sulphate as a source of sulphur!
- Long term (older) stands of alfalfa would need application of Zinc to sustain high yields.
- Use N fertilizer blends containing urea, ESN and ammonium sulphate for grasses production and apply N @ 140 kg/ha. The combination gave 1.84 t/ha extra grass dry matter yield at an additional cost of only \$72.2/ha.
- Averaged over 5 years, ESN/urea applied in the fall (September 25) to forage grasses gave equal yield to spring applied urea. Protein content with fall applied ESN could be higher than that with fall/spring applied urea. Grass yield: Bromegrass > Timothy.
- Residual effect of urea/ESN or their blends applied to corn was not significant on the forage oats. Increase in oats yield to applied N at rates higher than 35 kg N/ha was small.
- Replacing part of N in urea with ammonium sulphate increased yield of barley for forage, but not for grain production for which ESN/or ESN + urea seemed better than urea.
- Inter-cropping berseem with oats, alfalfa and galega increased forage DMY by 1.3, 0.94 and 0.62 t/ha!
- Galega could be better forage legume than alfalfa both in terms of yield and protein content!
- MasterGraze corn produced 8.5 t/ha forage yield in 80 days. Urea + ESN (3:1) @ 100 kg N/ha produced as much yield as urea @ 200 kg N/ha (one year data only).
- Sorghum Sudangrass yield at 150 kg N/ha was 7.1 t/ha.
- Effects of lime at any of its frequency of applications (every 2, 4 or 6 years) on soybean grain yield and protein content were not significant.
- Both manure and wood ash increased soybean grain yield. However, manure resulted in the maximum yield increase (~700 kg/ha). Additional N, P, K and S didn't bring further yield improvement.
- Reed Canarygrass, Tall Fescue and Orchardgrass produced 41 %, 17 % and 12.5 % higher biomass yield than Switchgrass.
- Harvesting in fall or spring didn't affect biomass yield of grasses, except in timothy in which spring harvesting significantly reduced the yield as compared to fall harvesting.
- More work on cover crops is needed to make any valid conclusions, though it appeared that winter rye as a cover crop depressed dry matter yield of forage barley, whereas, tillage radish, turnips and red clover appeared to increase grain yield of soybean more than that of forage barley.
- Add at least one more crop between corn-wheat rotation; canola is one of the good options!

Best Wishes for the Season 2014! May you have Bumper Crops!!

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