

TBARS Research 2010 Presentation-Conclusions/Recommendations

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- Red Fife grain yield under organic system was 65 % of that from Sable. Grain protein content in Sable (17.3 %) was ~1% higher than in Red Fife, but ~1 % point lower than Superb/Kamut (18.1/18.2 %).
- Seed treatment with mycorrhizal fungi didn't improve the organic wheat grain yield.
- Spring wheat: Batiscan yielded a little better than Sable (3)*.
- ESN up to 120 kg N/ha could be safely applied with spring wheat seed at seeding. However, it didn't prove better than urea in grain yield.
- N @ 0-40 kg/ha was enough for spring wheat grown after alfalfa, soybean and silage corn, whereas 80 kg N/ha was required for wheat grown after wheat/ or barley (2).
- Oceanik (6,101 kg grains/ha) and Encore (6,059 kg grains/ha) that out yielded other varieties could be added to spring barley portfolio by growers (3).
- Two row barley varieties (CDC Coalition, Bentley) exceeded 6 row barley varieties in forage yield by over 1 t /ha. CDC Coalition proved to be the best dual purpose variety (7,219 kg/ha forage and 5,256 kg/ha grain yield) (2).
- Try growing barley and peas in alternate rows for (500 kg/ha) higher grain yield than barley alone and a saving of 20-40 kg N/ha (3).
- Only AC Jordon/AC Morgan could equal or beat AC Rigodon in oats grain yield (3)!
- In field peas, Cutlass/CDC Trucker gave the highest grain yield (~5,000 kg/ha) (3).
- Chickpeas grain yields were: Kabuli: 2,100-2,400kg/ha; Desi: 2,750-2,900 kg/ha.
- Viceroy recorded the highest grain yield (1828 kg/ha) in Lentils.
- Row direction didn't significantly affect the soybean grain yield that declined with increase in row spacing from 6" to 30" (3). NSC Warren was the best soybean variety! Conventional tillage appeared to be better than zero tillage in soybean (2).
- Seed placement of 20 kg P₂O₅ as MAP and 9 kg S as Ammonium sulphate produced the highest canola seed yield (3572 kg/ha). Increasing seed placed S from 9 to 18 kg/ha reduced crop stand and yield more so at 40 kg P₂O₅.
- Canola seed yield from Microessential S15 or Rapid Release Sulphur or coated MAP was low.
- August 25 to September 15 was the optimum window for seeding winter wheat; grain yield from CDC Buteo was ~500-700 kg/ha lower than that from CDC Falcon, CDC Ptarmigan and CDC Raptor (3).
- *Winter wheat/rye/triticale could produce more than double the forage yield of spring barley (5,746 kg/ha). Winter barley (McKellar) produced 1.6 times higher forage yields and nearly double the grain yield (5,845 kg/ha) as compared to spring barley (Cyane-3,129 kg grains/ha)!*
- Winter wheat/rye seeded in spring could produce ~6,000 kg/ha forage DM yield, with 20-21 % protein content.
- ESN and urea equaled in grain yield of winter wheat. Urea @ 30 kg N/ha at seeding and 90 kg N/ha in spring gave the highest grain yield of winter wheat.
- Urea, ESN or their blends in different proportions had no significant difference on silage corn yield.
- ESN/urea applied in the fall (September 25) to grasses gave equal forage dry matter yield to urea applied in spring (2).

- Residual effect of ESN on timothy yield was better than urea; it meant 500 kg/ha extra yield (as compared to urea).
- For better timothy/grasses yields, apply 20 % of N as ammonium sulphate and 80 % N as urea! (2)
- Urea @ 20 kg N/ha added ~600 kg/ha to alfalfa yield. Urea supplemented with elemental S (ES) equaled ammonium sulphate (AS) in alfalfa yield (1,300 kg/ha more than the check-without N or S). Protein content was $AS \geq \text{urea} + ES > \text{check!}$ (3)
- Alfalfa yield (5.7 t/ha, 5th year) from NPKSB was 1.7 times higher than with PK-OMAFRA Recommendation (3.3 t/ha). Sulphur and boron were more critical for alfalfa than any other nutrient (6)!
- Application of P and K didn't improve alfalfa yield in a soil with 16 ppm P and 81 ppm K (3).
- Berseem (100 %) + oats (70 %) improved forage yield by ~1.5 t/ha as compared to oats alone at 100 % seed rate (2).
- Wood ash increased the available soil micronutrients, better than lime/or manure (7).
- Frequency of lime, or wood ash applications (every 2 or 4 years) didn't affect barley yield; though for higher availability of nutrients in the soil, application of wood ash after every 2 years was better than that from its application after every 4 years (3).
- Solid dairy manure increased barley grain yield by ~500 kg/ha and wood ash by 800 kg/ha. The manure improved soil P and K more than wood ash (3)! Wood ash could be used in lieu of manure in the fields at a distance from the barns.
- Temperate grasses equaled switchgrass in biomass/bio-energy production.
- Winter cereals straw resulted in higher biomass/bio-energy production than switchgrass. Winter triticale (variety Luoma) straw produced the highest biomass/bio-energy amongst winter and spring cereals, temperate grasses and switchgrass!

**Figures in () indicate number of years over which conclusions are drawn! Observations based on a single year data aren't followed by ().*

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