**Dos and Don’ts for the Season 2019**

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Genetics, weather/environment and management are the three key factors that govern production potential of a crop. While we can hardly do much about aberrant weather (such as 80 mm or more rain pouring in a single day or no rain at all during peak crop water requirement stages), we can manage the other two factors to achieve maximum economic yields.

**Buying cheap seed rarely works!** Select crop varieties best suited to your local agro-climatic conditions. While $250/MT seed of an old/prevalent variety may seem attractive to $800/MT seed of a new high yielding variety, it may not yield as much as the new variety. Remember you aren’t spending $800/acre. Calculate the extra seed cost per acre from the new variety and compare it with likely extra yield. If the latter’s value exceeds extra seed cost, go for the new variety. New and better varieties are added each year of which producers can take advantage. However, don’t discard a time tested variety that has been giving consistently high yield just for the sake of a new variety. Put some acres under the new variety for evaluation against the time tested variety to decide upon extended cultivation of new variety next year(s).

**Nutrient Management**: Gone are the days when maximum economic yields could be obtained with NPK alone. Sulphur (S) and micronutrients such as zinc, manganese and boron are becoming increasingly important. In crops such as canola, response to N may not be recorded unless S is applied. Follow 4R Nutrient Management (Right source, Right rate, Right place and Right time)/ and application of nutrients in balanced amounts. Higher rates of one nutrient may require higher amounts of other nutrients. Or, excessive application of one nutrient may limit the availability of others. For example, excessive P apart from having an environmental impact would restrict availability of micronutrients especially zinc and manganese. While farmers usually test soils for P, K Ca and Mg; not everyone goes for testing nitrate N, S and micronutrients. Nitrate N in early spring/or late fall (when soil temperature is below 100 C) could help in precisely estimating the N requirements of a crop. Use of Variable Rate Technology could make for the efficient use of nutrients. Seed row placed liquid/or solid fertilizers at recommended rates help the crops to take a healthy early start. ESN (polymer coated urea) is very safe N source for seed row placement; slowly released N from ESN will be taken by roots directly without any losses. Research at Thunder Bay has shown that entire amount of N could be applied to crop plants in the seed row as ESN without any deleterious effect on seedlings/or crops. Use of multiple sources of N such as manure, ESN, ammonium sulphate and urea (all at seeding/or pre seeding) could obviate the need of later application of N. Thunder Bay producers have been following this approach and have been getting bumper crops with consistently high yields (often record breaking) every year.

**Be prepared for new/or increasing threats to crop production!** Club Root has been reported in Ontario. One canola plant was found infected with Club Root in a Clearfield canola variety in our research plots at Thunder Bay. Bring in Club Root resistant canola varieties (L255PC, L241C and L135C) for cultivation in 2019 and follow crop rotations and sanitary measures (clean the implements from the carry over soil from the infested fields; Club Root spreads from spores in the soil). Swede Midge has threatened canola cultivation in NE Ontario and was also noticed in canola fields at Thunder Bay during 2018. The attack comes at bolting (5-6 leaf stage) when the pest ruins the floral buds by sucking sap from the buds. A Chlorpyriphos spray just before bud formation stage was found to kill the Swede Midge at Thunder Bay. A protective spray of Chlorpyriphos (effect will last for 15 days) in season 2019 without even noticing the pest may be advisable. Spray second time if need be. Fungicides sprays to control foliar fungal diseases and Fusarium Head Blight in cereals pays to maximize economic grain and straw yields with clean straw. Western Bean Cut Worm, Gibberella Ear Rot and Stripe Rusts are challenges in Corn Belt of Ontario. Go for resistant varieties and other protective/control measures.

**Overcome other production constraints!** Low soil pH would limit yields of most crops. Apply lime to acidic soils, preferably in the fall and cultivate soils after lime application to increase the volume of soil reacting with lime. Use Dolomitic lime if your soils are deficient in magnesium. Lack of drainage would be a constraint to timely seeding in spring and getting adequate yields. Tile drain all your fields. Grow more than one variety of a single crop with few days of difference in maturity to spread farm operations and also to increase horizontal and vertical resistance to crop diseases. If only a single variety is grown on a farm/or in an area, the loss will be much more if a disease comes in an epidemic form. Allocating part of the canola acres to non shattering varieties (for direct combining) and part to varieties that will need swathing before combining could help spreading harvest operations and minimizing shattering losses in canola. Dry down weeds by Roundup spray well before combining crops. Maintain proper harvest interval after herbicides sprays. Keep your bins/silos clean for storage of crop produce. Keep separate bins for your own seeds. Keep scouting your crops at critical stages and take appropriate measures if you notice any biotic or abiotic production constraint.

**The Final Word**: Consult your peers who did better than you. Consult a specialist or a researcher or a CCA in your area or even outside your area; more so if the advice is free of cost. Good Agronomic advice could add 30 % to income (Gabrielle Ferguson CCA, Ontario Farmer, February 3, 2009)! The CCAs sign a code of ethics and will not make any wrong recommendations to you knowingly!

*May you have bumper crops with bin bursting yields in 2019!*

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