

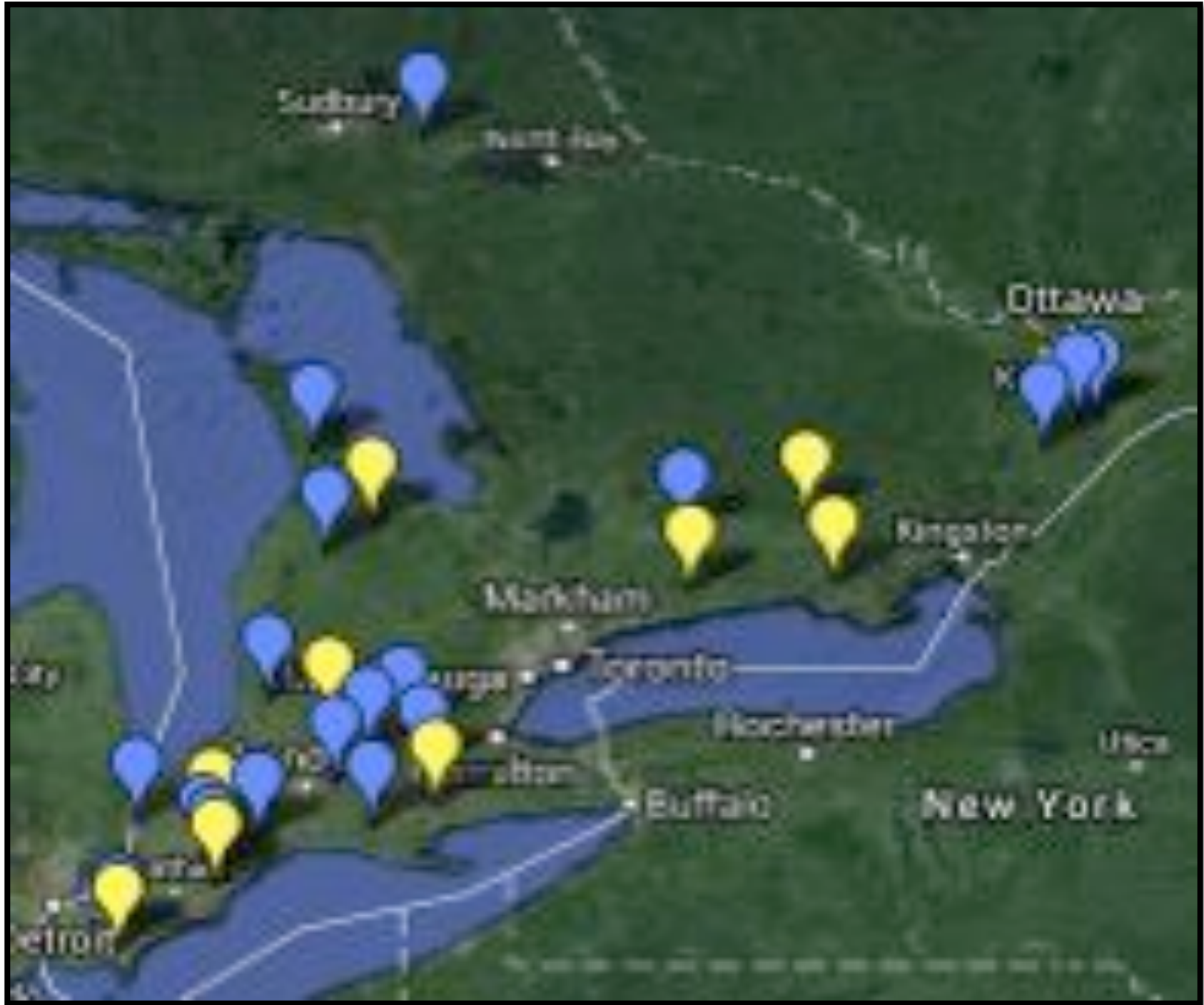
FIELD-SCALE AGRICULTURAL BIOMASS RESEARCH AND DEVELOPMENT PROJECT



Final Report
OBPC Biomass Knowledge Exchange
February 25, 2014
H. Engbers

ON-FARM RESEARCH AND DEVELOPMENT

- 2010-2013
- 28 producers with passion for participation
- Tendering applications: demonstrate producer commitment
- Strong industry support: OPG, OMAF, OFA



CO-OPERATOR FIELD PLOTS

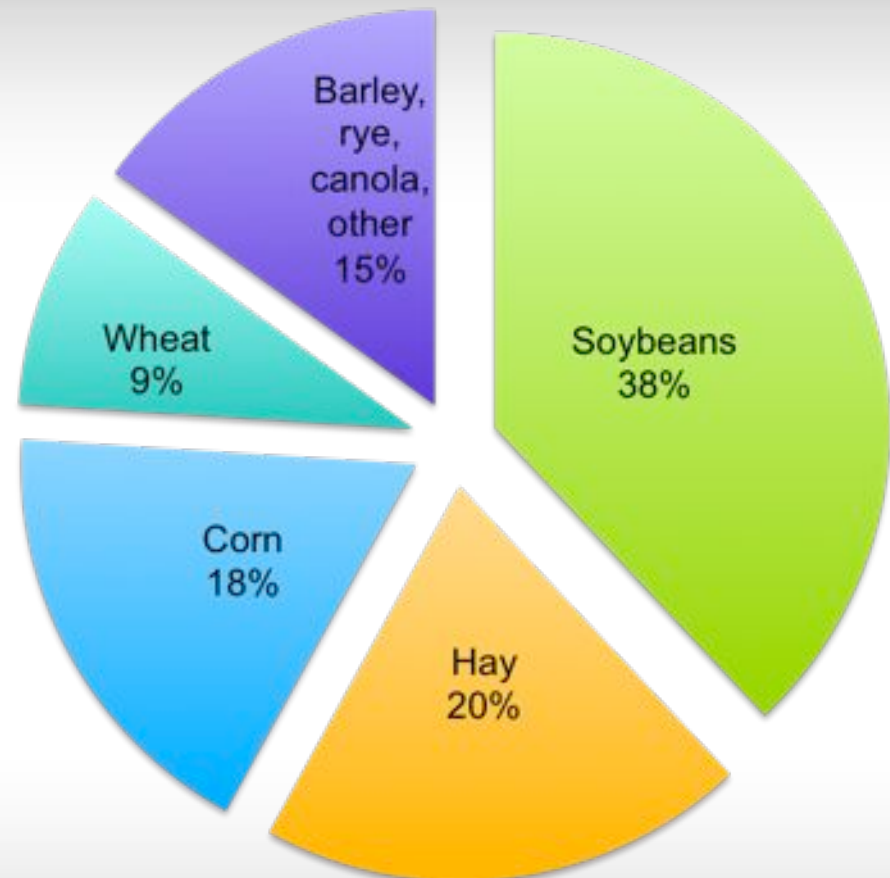
- 725 ac: Switchgrass, Miscanthus, Tallgrass Prairie
- Grower surveys, grower reported yields and harvest moistures, verified yield with hand harvested samples
- Seeded grasses:
 - Cave-in-Rock or native ecovars
 - Broadcast or grass seed drill
- Miscanthus:
 - Nagara
 - Modified transplant planter

5 KEY LESSONS FOR SUCCESSFUL PRODUCTION

1. Take the time to select and prepare fields
2. Planting timing is key to success for the next 10-20 years
3. Controlling weeds in the first years of establishment is essential, the first years are not “plant and forget”
4. No specialized equipment necessary and could provide opportunities for custom operators beyond traditionally busy times
5. Growing biomass grasses on lower quality land may result in reduced yield potential and greater time to maximum yield- still great opportunities but keep in mind

FIELD SELECTION/PREPARATION

- Field preparation specific to cropping system being displaced
- Chemical burn-down
- Tillage: dependent on past crop but as little as possible



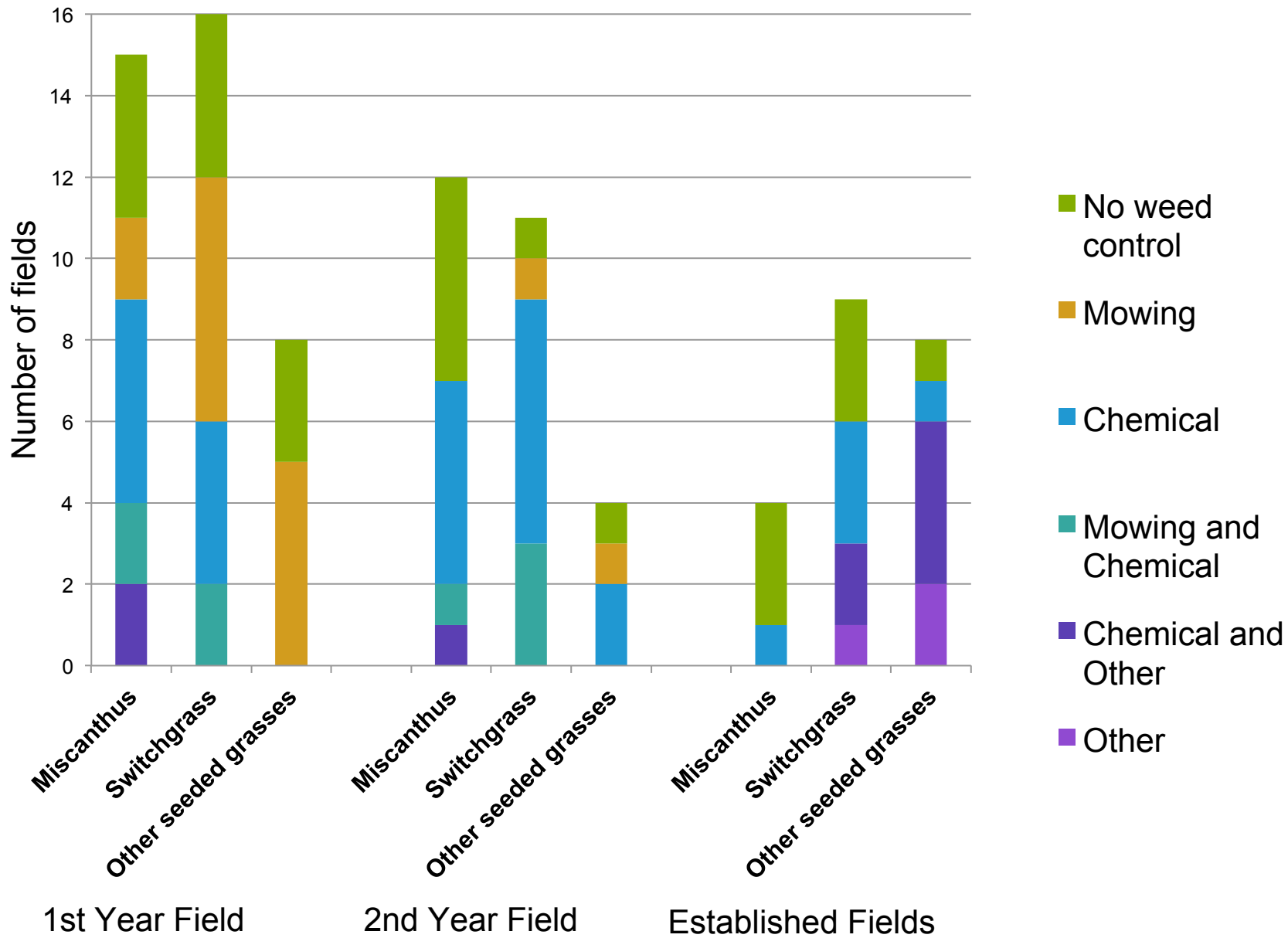
PLANTING DATE

Late June



Mid July





HARVESTING

- Cutting
- Drying
- Baling



GROWER REPORTED YIELDS

Species	Age of crop (yrs)	Yield (kg DM ha ⁻¹ ± SD)
Miscanthus	2	7506 ± 5831.7
	≥3	18377 ± 3651.1
Switchgrass	2	2211 ± 1282.1
	≥3	3615 ± 2965.4
Indiangrass	≥3	5571 ± 1081.9
Big bluestem	≥3	4015 ± 2916.8

HARVEST MOISTURE

Growth Year	Harvest Timing	Percent Moisture (\pm SD*)		
		Miscanthus	Switchgrass	Other seeded grasses
2010	Spring	10.0	6.1	
2011	Spring	12.8 \pm 3.95	6.8 \pm 0.87	11.9 \pm 5.00
2012	Fall	18.0	16.0 \pm 1.27	15.1 \pm 0.57
	Spring**	8.1 \pm 1.09	8.4 \pm 0.88	8.8

MARKET DEVELOPMENT

- Need For:
 - Product Specifications (Quality Control)
 - Long-Term Contracts
 - Predictable Pricing that Considers Risk

KNOWLEDGE GAPS

- Further research required
 - Variety selection
 - Control of perennial grass weed pressure
 - Fertility requirements
 - Time to full yield potential in a range of soil and climactic conditions
- Productive capacity challenges will be developed by Ontario farmers as markets evolve

THANKS TO PARTNERS

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