

## Late Planting of Spring Cereals

### What is the yield potential for late-planted spring cereals?

Based on Manitoba Agricultural Services Corporation (MASC) data collected between 2010-2019, yield potential for late-planted spring cereal crops varies by area of the province and crop type (see tables below). By the 4<sup>th</sup> week of May, yields for spring wheat (Canadian Western Red Spring – CWRS) range from 60-92% of maximum. For oats and barley planted in the last week of May, yields range from 60-95% and 58-84% of maximum, respectively. Yield of grain corn planted in the last week of May ranges from 61-92% of maximum.

Table 1: Relative yield (% of maximum) of spring wheat, barley, oat, and grain corn reported to MASC during each sowing week in Manitoba for the period of 2010-2019.

Seeding Date (Month:Week)	Manitoba			
	(All Risk Areas)			
	Wheat	Barley	Oat	Grain Corn
<05	100	99	100	94
1:05	95	100	96	100
2:05	87	91	90	94
3:05	79	81	78	84
4:05	73	71	83	76
1:06	67	64	74	-
2:06	59	54	64	-
3:06	51	51	40	-

Table 2: Relative yield (% of maximum) of spring wheat reported to MASC for each sowing week and risk area for the period of 2010-2019.

Seeding Date (Week:Month)	Risk Area															
	1	2	3	4	5	6	7	8	9	10	11	12	32	14	15	16
<05	100	100	100	99	100	100	99	85	100	100	100	100	100	100	83	-
1:05	86	95	97	100	95	98	100	100	100	95	99	93	94	86	100	100
2:05	77	84	86	94	88	89	93	94	95	90	89	89	87	76	94	114
3:05	75	76	76	85	84	81	86	85	83	82	86	87	85	66	83	99
4:05	71	72	75	78	83	74	81	73	75	71	78	85	81	60	74	92
1:06	66	68	65	66	68	67	73	71	69	69	76	81	80	60	72	70
2:06	65	57	60	67	57	61	75	65	58	51	58	46	47	53	67	63
3:06	45	55	57	49	53	53	70	29	51	25	52	38	55	36	42	64

Table 3: Relative yield (% of maximum) of barley reported to MASC for each sowing week and risk area for the period of 2010-2019.

Seeding Date (Week:Month)	Risk Area															
	1	2	3	4	5	6	7	8	9	10	11	12	32	14	15	16
<05	86	100	100	100	92	100	100	100	100	100	100	100	100	94	72	0
1:05	100	87	100	95	100	84	94	87	97	92	93	90	96	100	96	0
2:05	93	79	90	91	97	79	86	88	89	89	86	74	84	89	100	100
3:05	83	66	83	80	89	73	88	77	80	90	78	78	80	73	89	28
4:05	76	58	79	70	82	64	84	60	70	71	60	63	72	58	77	76
1:06	66	55	68	67	76	57	64	57	65	59	55	77	56	57	56	37
2:06	53	43	56	46	58	50	59	55	51	66	37	49	62	44	48	21
3:06	67	36	47	47	60	50	58	57	49	39	39	60	51	30	38	38

Table 4: Relative yield (% of maximum) of oat reported to MASC for each sowing week and risk area for the period of 2010-2019.

Seeding Date (Week:Month)	Risk Area															
	1	2	3	4	5	6	7	8	9	10	11	12	32	14	15	16
<05	100	100	100	100	100	100	100	61	80	100	100	100	100	100	84	0
1:05	98	93	83	95	97	97	91	76	100	95	99	96	98	86	100	0
2:05	95	93	86	90	91	93	90	93	97	88	86	79	93	83	96	100
3:05	91	80	87	90	85	83	87	100	80	73	78	82	79	68	84	187
4:05	81	78	69	80	73	66	73	85	72	64	60	87	82	59	77	95
1:06	69	68	62	72	56	58	65	74	65	58	53	72	66	49	70	86
2:06	68	57	56	64	56	47	58	72	51	48	49	55	68	45	49	67
3:06	62	52	49	57	43	38	46	60	49	32	33	51	42	36	46	73

Table 5: Relative yield (% of maximum) of grain corn reported to MASC for each sowing week for each risk area for the period of 2010-2019.

Seeding Date (Week:Month)	Risk Area												
	1	2	3	4	5	6	10	11	12	32	14	15	
<05	83	88	97	100	100	100	100	100	100	100	100	55	
1:05	100	100	100	95	87	55	91	95	94	99	100	89	
2:05	90	87	92	92	86	81	88	85	92	95	91	93	
3:05	78	81	72	81	80	58	75	84	92	92	84	100	
4:05	72	74	92	73	63	61	64	77	84	88	67	66	
1:06	44	69	52	73	52	20	72	51	83	69	94	-	
2:06	-	124	-	57	87	-	88	-	87	-	86	-	
3:06	-	-	-	80	-	-	56	-	79	-	73	-	

For a map illustrating MASC risk areas: [https://www.masc.mb.ca/masc.nsf/maps\\_risk\\_areas.html](https://www.masc.mb.ca/masc.nsf/maps_risk_areas.html)

Table 6: MASC seeding date deadlines for spring cereal crops. Crops must be seeded by the indicated seeding deadline to be eligible for full AgriInsurance coverage. Crops seeded in the extended seeding period will still be insured, but at a reduced coverage level. For all crop deadlines: [https://www.masc.mb.ca/masc.nsf/crop\\_seeding\\_deadlines.html](https://www.masc.mb.ca/masc.nsf/crop_seeding_deadlines.html)

Crop	Full Coverage	Extended Coverage
Barley	June 20	None
Oat	June 20	None
Spring Wheat (all types)	June 20	None
Grain Corn <sup>1</sup>	Area 1: June 6 Area 2: May 30 Area 3: May 30 Area 4: May 30 ITA: May 30	Area 1: June 7 – 11 Area 2: May 31 – June 4 Area 3: May 31 – June 4 Area 4: May 31 – June 4 ITA: None

<sup>1</sup>Grain corn insurance areas: [https://www.masc.mb.ca/masc.nsf/map\\_grain\\_corn.pdf](https://www.masc.mb.ca/masc.nsf/map_grain_corn.pdf)

### Should crop type and variety change when planting late?

If facing a late planting scenario, farmers will have to consider crop type and variety selection with a focus on maturity and disease package.

#### *Wheat, Oat, Barley*

If seeding is delayed beyond late May, farmers should consider selecting an earlier maturity variety with may reduce the risk of damage from fall frost or excess weathering.

Increased disease pressure often associated with delayed planting needs to be considered when selecting a variety. Late-seeded oats will be more susceptible to barley yellow dwarf, a viral disease carried and spread by aphids, and crown rust. If your crop plans includes oats, select varieties with some resistance to these diseases.

Late planted (after June 1) wheat may be more susceptible to fusarium head blight (FHB). Choose varieties that have some resistance to FHB. Late planted wheat is also more susceptible to leaf rust, so farmers should try to avoid varieties that are susceptible to leaf rusts. Consider foliar fungicides if rust is observed or conditions are conducive for FHB infection.

Days to maturity and disease resistance information for spring wheat, oat, and barley varieties can be found in Seed Manitoba 2020 - [https://www.seedmb.ca/digital-edition/seed-manitoba\\_2020-01-01/](https://www.seedmb.ca/digital-edition/seed-manitoba_2020-01-01/).

#### *Grain Corn*

Farmers can stay with their planned hybrids until the last week in May, if they are confident that there is enough soil moisture for plants to emerge quickly. Regardless of seeding date, it is important to choose appropriate hybrids for your area and expected corn head unit (CHU) accumulation. At the end of May, farmers should consider switching to hybrids with a shorter CHU requirement to reduce the risk of fall frost influencing yield and quality increases. Information on corn hybrids in Manitoba can be found in the Manitoba Corn Committee Corn Hybrid Performance Trial results - <https://manitobacorn.ca/wp-content/uploads/2019/11/COVER-MCC-Brochure-2019.jpg>.

### Should seeding rate change when planting cereals late?

### *Wheat, Oats, Barley*

Farmers should increase their seeding rates to target the high end of the recommended plant population when seeding is delayed in order to shorten the time to maturity and account for decreased tillering. To optimize yield potential, target plant populations should be:

Crop Type	Target Plant Population (plants/ft <sup>2</sup> )
Spring wheat	23-28
Oat	18-23
Barley	22-25

### *Grain Corn*

A final population of 30,000 to 36,000 plants per acre is generally recommended. Optimal plant populations can vary with the choice of hybrid, management practices, the growing environment, and from field to field. In delayed planting situations, farmers should still select a target plant population based on those factors listed above.

Once their target plant population is chosen, farmers need to consider the planting rates required to achieve their target. If soil conditions with late planting are better for emergence than those with earlier planting dates, slightly fewer seeds may be needed to obtain a given final plant population. If soils are still cold and wet, a planting rate 10% higher than the desired final stand is recommended.

### **Should planting depth change when planting cereals late?**

#### *Wheat, barley, oats*

Under most conditions, a planting depth of 1.5 to 2.5" is recommended for oats, barley, and wheat. Planting deeper than 3" when soils are cold can reduce emergence and plant vigour. However, as the planting season progresses and as soils warm and dry, ensure seed is placed firmly into moisture but no deeper than 3".

#### *Corn*

A planting depth of 1.5-2" is recommended for corn. Planting deeper than 2", especially when soils are cool can significantly delay emergence.

### **Other Planting Considerations**

Planting when soils are too wet is not advised, regardless of the date, as it can lead to soil compaction. Yield reductions resulting from "mudding seed in" may be much greater than those resulting from a slight planting delay.

Farmers should also pay attention to planting speed when planting grain corn. Higher planting speeds can cause seed misplacement (skips and doubles, variable seeding depth) which can result in uneven emergence and possible yield reductions. In corn production, uniform emergence is critical for maximizing yield potential.

One final point for farmers to think about is their cost of production (COP). If farmers calculated their COP using a 100 bushel per acre oat crop, they may need to rework their economics using lower projected yields normally seen with a later planting date. Using updated numbers may make the decision easier when deciding to keep corn in the rotation or not based on profitability.