

Niagara - October 2011:

The final month of the 2011 growing season brought above-normal temperatures and rainfall, following the similar trend seen throughout September. The growing degree day accumulation during the month of October was slightly above normal, although there was essentially no accumulation during the last half of October (Fig 1). Accumulated growing degree days for the entire 2011 growing season totaled 1441 for Vineland and 1583 for Virgil, well above the normals of 1320 and 1375, respectively. This is not surprising as day-time temperatures averaged above normal for the fifth month in a row, with average daily maximums approximately 1 ℃ above normal in October. Daily minimums were also above normal in Niagara East, but slightly below normal in Niagara West (Fig 2-5). Most stations fell below -2 ℃ on one or more nights between October 27th and 30th.

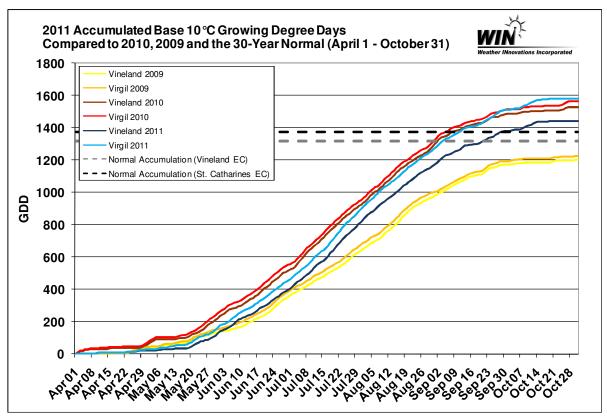


Figure 1: Growing Degree Days

The Niagara region received approximately 100 mm of rainfall this month. Rainfall totals across the stations ranged from 80.2 mm at Vineland Cherry Ave to 117.8 mm at West Lincoln. Overall, monthly rainfall averaged 147% of normal for Niagara West and 144% of normal for Niagara East (Fig 6 and 7). The above-normal rainfall resulted from an above-normal number of rain events: an average of 5 days above normal in both Niagara West and Niagara East (Fig 8 and 9). The wet harvest period included a 7-day stretch of continuous rainfall occurring between September 28 and October 4. A few days of temperatures rising above 25 °C following these rains added to the harvest challenges.



Normal (Vineland EC) 11.1 17.8 23.1 26.5 25.1 20.9 14.1 Winona 10.8 17.4 24.7 31.5 28.2 23.1 15.5 Grimsby 10.7 17.5 24.8 30.8 27.3 22.4 15.2 West Lincoln 10.8 17.8 24.3 30.4 27.0 22.2 14.8 Lincoln Fly Road 10.8 17.7 24.6 30.7 27.4 22.4 14.9 Beamsville 11.4 17.8 24.6 30.3 27.1 22.3 15.1 Lincoln Hwy 8 11.0 17.3 24.6 30.7 27.4 22.1 15.2 Vineland Cherry Ave 11.4 17.7 24.5 29.6 26.6 22.1 15.3 Vineland Escarpment 11.4 18.0 24.5 30.0 27.3 22.3 15.5 Jordan Hwy 8 12.1 18.6 25.1 30.5 27.5 22.7 15.5		Apr	May	June	July	Aug	Sept	Oct
Grimsby 10.7 17.5 24.8 30.8 27.3 22.4 15.2 West Lincoln 10.8 17.8 24.3 30.4 27.0 22.2 14.8 Lincoln Fly Road 10.8 17.7 24.6 30.7 27.4 22.4 14.9 Beamsville 11.4 17.8 24.6 30.3 27.1 22.3 15.1 Lincoln Hwy 8 11.0 17.3 24.6 30.7 27.4 22.1 15.2 Lincoln Lakeshore 11.0 17.1 24.7 30.8 27.8 22.4 15.5 Vineland Cherry Ave 11.4 17.7 24.5 29.6 26.6 22.1 15.3 Vineland Escarpment 11.4 18.0 24.5 30.0 27.3 22.3 15.2 Jordan Hwy 8 12.1 18.6 25.1 30.5 27.5 22.7 15.5 Jordan Harbour 11.2 17.3 24.2 29.9 27.3 22.4 15.5 <	lormal (Vineland EC)	11.1	17.8	23.1	26.5	25.1	20.9	14.1
West Lincoln 10.8 17.8 24.3 30.4 27.0 22.2 14.8 Lincoln Fly Road 10.8 17.7 24.6 30.7 27.4 22.4 14.9 Beamsville 11.4 17.8 24.6 30.3 27.1 22.3 15.1 Lincoln Hwy 8 11.0 17.3 24.6 30.7 27.4 22.1 15.2 Lincoln Lakeshore 11.0 17.1 24.7 30.8 27.8 22.4 15.5 Vineland Cherry Ave 11.4 17.7 24.5 29.6 26.6 22.1 15.3 Vineland Escarpment 11.4 18.0 24.5 30.0 27.3 22.3 15.2 Jordan Escarpment 11.5 18.3 24.7 31.3 28.2 23.0 15.5 Jordan Hwy 8 12.1 18.6 25.1 30.5 27.5 22.7 15.5 Jordan Harbour 11.2 17.3 24.2 29.9 27.3 22.4 15.5<	Vinona	10.8	17.4	24.7	31.5	28.2	23.1	15.5
Lincoln Fly Road Beamsville Lincoln Hwy 8 Lincoln Lakeshore Vineland Cherry Ave Vineland Escarpment Jordan Escarpment Jordan Hwy 8 Lincoln Lakeshore 11.4 17.8 17.8 24.6 30.7 27.4 22.4 14.9 24.6 30.7 27.4 22.1 15.2 24.6 30.7 27.4 22.1 15.2 24.7 30.8 27.8 22.4 15.5 24.5 29.6 26.6 22.1 15.3 24.7 31.3 28.2 23.0 15.5 Jordan Hwy 8 12.1 18.6 25.1 30.5 27.5 22.7 15.5 Jordan Harbour	Grimsby	10.7	17.5	24.8	30.8	27.3	22.4	15.2
11.4 17.8 24.6 30.3 27.1 22.3 15.1	Vest Lincoln	10.8	17.8	24.3	30.4	27.0	22.2	14.8
Lincoln Hwy 8 Lincoln Lakeshore Vineland Cherry Ave Vineland Escarpment Jordan Escarpment Jordan Hwy 8 Lincoln Lakeshore 11.0 17.3 24.6 30.7 27.4 22.1 15.2 24.7 30.8 27.8 22.4 15.5 24.5 29.6 26.6 22.1 15.3 24.5 30.0 27.3 22.3 15.2 25.1 30.5 27.5 22.7 15.5 30.7 27.4 22.1 22.1 22.1 22.1 22.1 22.1 22.1 22	incoln Fly Road	10.8	17.7	24.6	30.7	27.4	22.4	14.9
Lincoln Lakeshore 11.0 17.1 24.7 30.8 27.8 22.4 15.5 Vineland Cherry Ave 11.4 17.7 24.5 29.6 26.6 22.1 15.3 Vineland Escarpment 11.4 18.0 24.5 30.0 27.3 22.3 15.2 Jordan Escarpment 11.5 18.3 24.7 31.3 28.2 23.0 15.5 Jordan Hwy 8 12.1 18.6 25.1 30.5 27.5 22.7 15.5 Jordan Harbour 11.2 17.3 24.2 29.9 27.3 22.4 15.5	Beamsville	11.4	17.8	24.6	30.3	27.1	22.3	15.1
Vineland Cherry Ave 11.4 17.7 24.5 29.6 26.6 22.1 15.3 Vineland Escarpment 11.4 18.0 24.5 30.0 27.3 22.3 15.2 Jordan Escarpment 11.5 18.3 24.7 31.3 28.2 23.0 15.5 Jordan Hwy 8 12.1 18.6 25.1 30.5 27.5 22.7 15.5 Jordan Harbour 11.2 17.3 24.2 29.9 27.3 22.4 15.5	incoln Hwy 8	11.0	17.3	24.6	30.7	27.4	22.1	15.2
Vineland Escarpment 11.4 18.0 24.5 30.0 27.3 22.3 15.2 Jordan Escarpment 11.5 18.3 24.7 31.3 28.2 23.0 15.5 Jordan Hwy 8 12.1 18.6 25.1 30.5 27.5 22.7 15.5 Jordan Harbour 11.2 17.3 24.2 29.9 27.3 22.4 15.5	incoln Lakeshore	11.0	17.1	24.7	30.8	27.8	22.4	15.5
Jordan Escarpment 11.5 18.3 24.7 31.3 28.2 23.0 15.5 Jordan Hwy 8 12.1 18.6 25.1 30.5 27.5 22.7 15.5 Jordan Harbour 11.2 17.3 24.2 29.9 27.3 22.4 15.5	ineland Cherry Ave	11.4	17.7	24.5	29.6	26.6	22.1	15.3
Jordan Hwy 8 12.1 18.6 25.1 30.5 27.5 22.7 15.5 Jordan Harbour 11.2 17.3 24.2 29.9 27.3 22.4 15.5	ineland Escarpment	11.4	18.0	24.5	30.0	27.3	22.3	15.2
Jordan Harbour 11.2 17.3 24.2 29.9 27.3 22.4 15.5	ordan Escarpment	11.5	18.3	24.7	31.3	28.2	23.0	15.5
	ordan Hwy 8	12.1	18.6	25.1	30.5	27.5	22.7	15.5
Rockway 11.9 18.5 24.8 30.1 27.3 22.6 15.3	ordan Harbour	11.2	17.3	24.2	29.9	27.3	22.4	15.5
1110 1110 2110 2111 2111 2111	łockway	11.9	18.5	24.8	30.1	27.3	22.6	15.3

Figure 2: Niagara West – Maximum Temperatures

	Apr	May	June	July	Aug	Sept	Oct
Normal (St. Catharines EC)	12.2	19.4	24.3	27.1	25.9	21.5	14.9
St. Catharines Glass Ave	12.0	18.5	25.4	30.6	27.5	23.0	15.5
St. Catharines Third Ave	12.0	18.2	25.8	31.3	27.9	23.2	15.7
St. Catharines Fifth St	12.2	18.9	25.4	30.8	27.7	23.0	15.5
West St. Catharines	12.6	19.4	26.0	31.0	28.1	23.2	15.8
Niagara College	12.6	19.3	26.2	32.6	28.7	23.7	15.9
St. David's Bench	12.6	19.4	25.9	31.5	28.4	23.5	16.0
Niagara Airport	12.3	19.2	25.9	32.2	28.4	23.4	15.8
Virgil	12.6	19.2	25.5	30.8	28.0	23.0	15.7
Virgil East	12.5	18.7	25.1	31.0	27.6	22.9	15.6
NOTL Irvine Road	11.7	18.2	25.1	31.0	27.6	22.4	15.0
Lakeshore	11.3	17.5	24.8	29.8	27.2	22.2	15.2
Parkway	12.4	18.8	25.4	30.8	27.6	23.0	15.7
Queenston	13.4	20.0	26.1	31.0	27.9	23.4	16.0
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Figure 3: Niagara East - Maximum Temperatures



	Apr	May	June	July	Aug	Sept	Oct
Normal (Vineland EC)	2.3	7.5	13.1	16.9	16.3	12.5	6.4
Winona	2.0	8.0	13.6	17.9	16.2	12.8	6.2
Grimsby	1.4	8.0	12.6	16.3	14.2	11.2	4.5
West Lincoln	1.8	8.3	13.4	17.3	14.8	11.9	4.9
Lincoln Fly Road	2.1	8.3	13.6	17.7	15.6	12.6	5.7
Beamsville	2.5	8.8	14.4	18.6	17.0	13.5	7.0
Lincoln Hwy 8	2.1	8.3	14.0	18.6	16.6	12.9	6.5
Lincoln Lakeshore	2.3	8.2	14.0	17.8	16.2	12.9	5.9
Vineland Cherry Ave	1.9	8.1	13.6	17.6	16.0	12.2	5.6
Vineland Escarpment	2.2	8.6	14.1	18.3	16.6	13.1	6.3
Jordan Escarpment	2.1	8.8	13.7	17.4	15.6	12.6	5.6
Jordan Hwy 8	2.4	8.8	14.2	18.3	16.7	13.1	6.6
Jordan Harbour	2.0	8.1	13.8	17.7	15.6	12.2	5.7
Rockway	2.0	8.5	13.7	17.7	16.1	12.6	5.8

Figure 4: Niagara West - Minimum Temperatures

	Apr	May	June	July	Aug	Sept	Oct
Iormal (St. Catharines EC)	2.1	7.8	13.3	16.4	15.7	11.6	5.6
t. Catharines Glass Ave	2.1	8.5	14.0	17.5	15.7	12.6	5.7
t. Catharines Third Ave	2.1	8.0	13.9	17.5	15.9	12.6	5.7
t. Catharines Fifth Ave	2.1	8.6	13.8	17.5	15.8	12.5	6.0
Vest St. Catharines	2.4	8.8	13.6	17.0	15.6	12.6	5.9
liagara College	2.6	9.2	13.3	17.2	16.1	13.1	6.5
t. David's Bench	2.3	9.1	13.8	17.8	16.3	13.0	6.1
liagara Airport	2.2	9.0	14.2	18.1	16.2	13.3	6.1
'irgil	2.3	9.1	14.1	18.0	16.0	13.2	6.2
irgil East	2.1	8.5	13.6	17.2	15.4	12.6	5.5
IOTL Irvine Road	2.2	8.6	14.1	18.3	16.6	13.3	6.3
akeshore	2.2	8.4	14.0	17.9	16.1	13.2	6.2
Parkway	2.0	8.5	13.6	17.3	15.9	13.0	5.9
Queenston	2.4	9.0	13.9	17.8	15.9	13.2	6.4

Figure 5: Niagara East - Minimum Temperatures



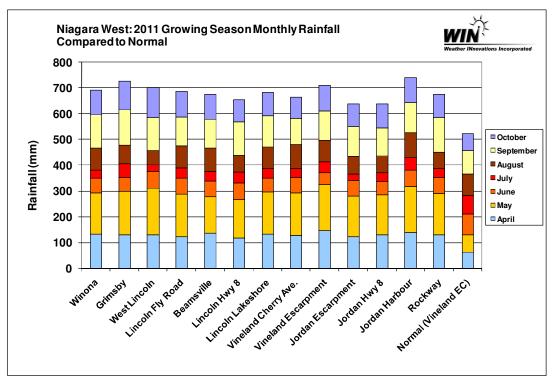


Figure 6: Niagara West - Accumulated Rainfall

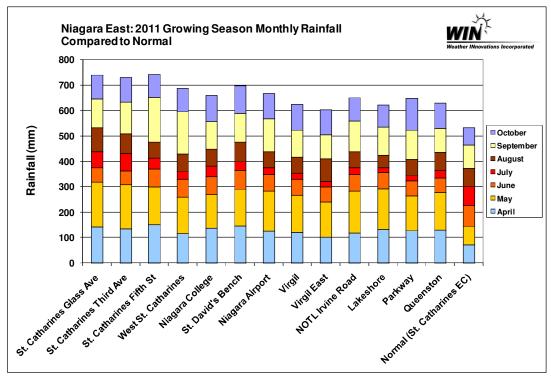


Figure 7: Niagara East - Accumulated Rainfall



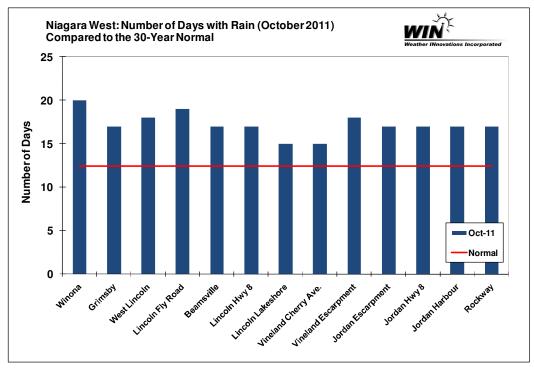


Figure 8: Niagara West - Days with Rainfall

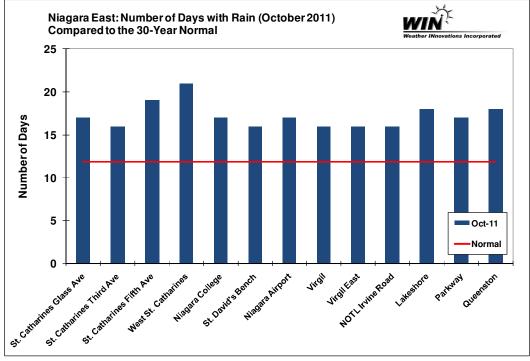


Figure 9: Niagara East - Days with Rainfall