

## Fertility Guidelines for Haskap Grown in Ontario

There are currently no Ontario fertility recommendations for haskap. The following tables for nitrogen (N), phosphorus (P), potassium (K) and lime applications are guidelines only and are provided for reference based on similar common crops and published research on haskap in other jurisdictions (note: lime, phosphorus and potassium should always be applied according to a soil test).



### Nitrogen (N):

Apply fertilizer in split applications starting just prior to bud break continuing to mid-July or at the end of fruiting with no more than 25 kg N/ha in any one application. Refer to Table 1 for season total nitrogen application guidelines for haskaps based on plant density and age.

Do not exceed 85 kg of actual nitrogen per ha per season regardless of number of plants per ha. The following are approximate values for low and high density plantings. For densities in between these values, use an intermediate rate. The exact amount of nitrogen to apply is a function of soil nitrogen level, cultivar, soil moisture, etc.

Plant Age (Years)	Low Density (1900 plants/ha)	High Density (4000 plants/ha)
	Actual nitrogen per plant (g)	
1	12.5	12.5
2	25	12.5
3	35	21
>4	45	21

#### Calculating the Amount of Fertilizer to Apply

##### Example:

Fertilizers come in many different formats. This example will use urea (46-0-0). You require 25 g of actual nitrogen per plant and will use urea with 46% nitrogen (46-0-0). Note: the numbers on the fertilizer bag represent percent (%) Nitrogen-Phosphorus-Potassium (N-P-K).

##### Calculation:

Amount of urea fertilizer required g/plant  
 = (g/plant nutrient ÷ % nutrient in fertilizer) x 100  
 = (25 g/plant ÷ 46% N) x 100  
 = 54 g/plant of urea is needed for 25 g actual nitrogen

## Phosphorus (P) and Potassium (K):

**Table 2: Phosphate Guidelines for New and Established Haskaps Based on OMAFRA Accredited Soil Tests for Similar Bushberry Crops (based on OMAFRA Publication 360, Guide to Fruit Production, 2016-2017)**

Soil Test (ppm P)*	Rating <sup>1</sup>	Phosphate (P <sub>2</sub> O <sub>5</sub> ) <sup>2</sup> required (kg/ha)	
		New Plantings	Established Plantings
0-3	HR	140	100
4-5		130	90
6-7		120	80
8-9		110	70
10-12		100	70
13-15		90	60
16-20		MR	70
21-25	60		40
26-30	50		30
31-40	40		20
Above 40	LR		0

\*0.5M sodium bicarbonate extract test method.

<sup>1</sup>HR, MR, LR, RR, and NR denote, respectively, high, medium, low, rare and no probabilities of profitable crop response to applied nutrient.

<sup>2</sup> Where manure is applied, reduce fertilizer applications according to the amount and quality of manure.

**Table 3: Potassium Guidelines for New or Established Haskaps Based on OMAFRA Accredited Soil Tests for Similar Bushberry Crops (based on OMAFRA Publication 360, Guide to Fruit Production, 2016-2017)**

Soil Test (ppm K)*	Rating	Potassium (K <sub>2</sub> O) <sup>2</sup> required (kg/ha)
0-15	HR	130
16-30		120
31-45		110
46-60		100
61-80		90
81-100		80
101-120		MR
121-150	60	
151-180	40	
Above 180	LR	0

\*1 M ammonium acetate extract test method.

<sup>1</sup>HR, MR, LR, RR, and NR denote, respectively, high, medium, low, rare and no probabilities of profitable crop response to applied nutrient.

<sup>2</sup> Where manure is applied, reduce fertilizer applications according to the amount and quality of manure.

## Lime:

In Canada, haskap is grown in a range of soil pH from 5.5 - 8.0. However, as with most horticultural crops, a pH range of 6.0 and above is typically suitable for plant growth. Ground limestone is traditionally used to correct soil acidity and is easiest to apply prior to crop establishment. In the case of perennial crops it can be difficult to incorporate large amounts of limestone after crop establishment. Applying and incorporating split applications of total recommended lime over multiple years will help distribute the lime more uniformly over a pre-existing planting and make it easier when working around perennial crops such as haskap. Soil pH and buffer pH will be provided on your soil test. The soil pH value indicates the current pH status of the soil. If the soil pH is lower than optimum, the buffer pH value is used to calculate lime requirements according to Table 4. Note: Full effects of lime may not be realized for up to three years after application.

## Lime:

Table 4: Lime Requirements to Correct Soil Acidity (based on OMAFRA Pub 360, Guide to Fruit Production 2016-2017)				
Buffer pH	Ground Limestone Required (t/ha)*			
	Target soil pH = 7.0 <sup>1</sup>	Target soil pH = 6.5 <sup>2</sup>	Target soil pH = 6.0 <sup>3</sup>	Target soil pH = 5.5 <sup>4</sup>
7.0	2	2	1	1
6.9	3	2	1	1
6.8	3	2	1	1
6.7	4	2	2	1
6.6	5	3	2	1
6.5	6	3	2	1
6.4	7	4	3	2
6.3	8	5	3	2
6.2	10	6	4	2
6.1	11	7	5	2
6.0	13	9	6	3
5.9	14	10	7	4
5.8	16	12	8	4
5.7	18	13	9	5
5.6	20	15	11	6
5.5	20	17	12	8
5.4	20	19	14	9
5.3	20	20	15	10
5.2	20	20	17	11
5.1	20	20	19	13
5.0	20	20	20	15
4.9	20	20	20	16
4.8	20	20	20	18
4.7	20	20	20	20
4.6	20	20	20	20

\*Based on Agricultural Index of 75.

<sup>1</sup> Liming to pH 7.0 is recommended only for club-root control on cole crops.

<sup>2</sup> Add lime if soil pH is below 6.1.

<sup>3</sup> Add lime if soil pH is below 5.6.

<sup>4</sup> Add lime if soil pH is below 5.1.