



# Seabuckthorn productivity in Northern Quebec

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## Introduction

- The Saguenay-Lac-Saint-Jean area (Northern Quebec, Canada) is host of a variety of wild fruit species that are well adapted to the climatic conditions of this region. Some of these species, like blueberries and cranberries, are grown and contribute greatly to the economy of the region.
- There is growing interest in the cultivation of small fruits and some species seem to offer a high potential for production and marketing.

## Objective

The objective of this study is to evaluate the adaptation, the development and the productivity of different cultivars of *Hippophae rhamnoides* (seabuckthorn) in a Northern agricultural area.

## Materials and methods

- Location: AAFC, Research Farm, Normandin, Quebec, Canada (48° 50' N, 72° 32' W).
- Climatic zone: 2b.
- Eleven female and five male cultivars were planted in 2006 for a total of 240 plants.
- Seabuckthorn population was 1250 trees ha<sup>-1</sup>
- Male trees represent 10% of all the trees planted.
- Within-row spacing was 2 meter. The row spacing was 4 m.
- Fruits were harvested by cutting the fruit-bearing branches from the shrubs. These branches were frozen to separate the berries.

## Results and discussion

- Fruit yields and fruit weight in 2010 and 2011 are presented in Table 1.
- Fruit yields in 2010 ranged between 2 247 kg ha<sup>-1</sup> and 14 762 kg ha<sup>-1</sup> and between 1 502 kg ha<sup>-1</sup> and 11 993 kg ha<sup>-1</sup> in 2011. The cultivar Russian Sunshine had high fruit yields with 12 983 kg ha<sup>-1</sup> and 11 993 kg ha<sup>-1</sup> of fruits in 2010 and 2011 respectively.
- Russian Orange and Indian Summer fruit yields were lower in 2011 compared to 2010. These cultivars seemed to be more affected by the harvesting method than the other cultivars.
- Weight of 25 fruit was also obtained to determine average fruit weight. Fruit size ranged between 240 and 744 mg per fruit in 2010 and between 242 and 824 mg per fruit in 2011.
- For both years, fruit weight of Russian Sunshine (744 mg and 824 mg respectively) was higher than the other cultivars.



Cultivars	2010		2011	
	Yields (kg ha <sup>-1</sup> )	Fruit weight (mg per fruit)	Yields (kg ha <sup>-1</sup> )	Fruit weight (mg per fruit)
Askola	5879 bc	240 d	5729 b	338 d
Frugana	4863 bc	384 c	4423 bc	436 c
Hergo	4820 bc	248 d	4557 bc	320 d
Indian Summer	3529 bc	420 c	1502 c	408 c
Leikora	4431 bc	436 c	3676 bc	708 b
Russian Orange	14762 a	585 b	5895 b	692 b
Russian Sunshine	12983 a	744 a	11994 a	824 a
Salicifolia	2499 c	243 d	5021 bc	312 d
Siberain Splendor	2926 bc	660 b	3909 bc	720 b
Sinensis	2247 c	243 d	6592 b	242 e
Star of Altaï	7402 b	630 b	5297 b	876 a

Means with the same letter are not significantly different according to Duncan's Multiple Range test ( $P \leq 0.05$ )



## Conclusion

The results showed that seabuckthorn is well adapted to the climatic condition prevailing in Northern Quebec and average fruit yields could be as high as 12 000 kg ha<sup>-1</sup> depending on the choice of cultivar and production year.

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