

# Netting for Bird Control in Blueberries – A Decision-making Guide

## ***What is the Problem?***

Birds destroy an estimated 10% of the blueberry crop in North America. Some bird damage is obvious – pecked fruit that is unsuitable for fresh market or broken clusters of ripening berries torn from the bush. Less easily measured and probably more costly, are the berries that are totally consumed by birds. Large flocks of birds are capable of consuming a major portion of a blueberry crop in a few days, which is thousands of dollars per acre in lost revenue.

## ***Why Net?***

Visual and noise scaring devices keep most birds out of the crops, when properly used. However, birds can get used to these deterrents and their effectiveness is reduced. Properly installed netting above the crop gives much more protection and saves growers the frustrations they can face protecting fields that are not netted.

Noise devices that scare birds away from the crops can be annoying to residents living in the area – including urban and farming neighbours. Netting is a noiseless and effective way to protect blueberries—while promoting good neighbour relations.

## ***Making the Best Economic Decision for Netting***

This factsheet will help growers assess the economic costs and benefits of netting blueberries on their farm. Other factors — such as the suitability of nets to the overall farm management as well as the impact of noise devices on neighbour relations – should also be considered when reaching a decision on netting the crop.

Follow the following steps while filling out the worksheet on the last page with information specific to your farm. The last step will show you if it will pay to install netting.

### **STEP #1**

#### ***Investment Costs***

##### **How much money will it cost to set up the nets?**

This is the starting point in making the decision. List all costs to install netting including posts, nets, wires, and labour or custom work. Estimates for these costs are about \$2,900 per acre for large (five acres or more), regular shaped, hand-harvested fields. It costs about \$500 per acre more for smaller, irregular-shaped fields, or fields that are mechanically harvested. The material costs (nets, posts, wire) are about \$2,000 to \$2,500 per acre. These costs must be recovered over the life of the netting. But don't count all these costs in one year – see the next step.

# Blueberry Industry FACTSHEET



BRITISH  
COLUMBIA

Ministry of Agriculture,  
Food and Fisheries  
Abbotsford Agriculture Centre  
1767 Angus Campbell Road  
Abbotsford, B.C. V3G 2M3  
Phone: 604 556-3001  
Fax: 604 556-3030

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## STEP #2

### **Annual Depreciation and Interest Costs**

#### **What is the yearly cost of the investment?**

These are the costs to consider when calculating the annual investment costs. In this step, take the costs of buying the nets and installing the net-support structure, and spread them over their expected life. **Annual depreciation** is an estimate of the yearly loss in the net's value and support structure as they wear out. The support structure will last longer than the nets. The easiest way to estimate the annual depreciation is to divide the value of the nets over the expected years of use. Do the same for items in the support structure.

**Interest cost** is the interest paid on the money borrowed for netting or on the interest income that could have been earned from a different investment (e.g. another project, or bonds or term deposits). Annual interest costs vary but a typical interest rate is used in the example on the last page. The interest is usually paid on the average value of the investment over its lifetime – i.e. halfway between the new value and the totally depreciated value.

## STEP #3

### **Yearly Costs**

#### **Now much will it cost to use the nets each year?**

These are the costs for putting up and removing the nets each year, and for repairs and maintenance. Estimate these costs using a percentage of the investment costs. Usually 3% is used for investments such as netting. Labour to do this work is about 36 hours per acre each year. Unexpected costs always come up. Plan for these costs with a 5% contingency allowance.

## STEP #4

### **Risk**

#### **How much extra money is needed for uncertainty?**

Farming is always uncertain. Berry prices and yields change with annual markets and growing conditions. Also, unexpected damage can occur to the nets or support structure. But payments must still be made. Allow for these risks to make sure that payments can still be kept up should there be a minor setback.

Budget for risk as a percentage of the expected costs. This can be as little as 5% of costs for a low risk investment – or as high as 50% for high risk investment and a high debt.

## STEP #5

### **Total Annual Netting Cost**

#### **What are all the annual costs for netting?**

Add up the costs in Steps # 2, 3, and 4 to get the total cost.

### **REMEMBER CASH FLOW**

If you take out a loan for netting, be sure to look at how the payments affect your entire operation. Make sure you have sufficient funds and credit in place so you don't face a "cash crunch" situation.

If the project provides a net benefit in the long term, financing the project out of your own resources will eliminate any loan payment requirements.

## STEP #6

### **Added Annual Return**

#### **Will more money be made with the nets?**

Consider the value of the extra berries harvested from a field protected by netting, and the additional costs to harvest and sell the berries. Work through the two tables on the next page.

Table 1 shows the berries saved by netting one acre. For harvested yield per acre, use your average yield from the last five years for mature crops (8 years or more). For younger crops, average the expected yields over the next five years. A well-managed, mature Bluecrop planting can produce 18,000 – 20,000 lb./acre if hand-harvested (less if mechanically harvested). The industry average yield across all varieties is about 9,000 lb./acre (mature crop).

Table 2 gives the added annual gross returns from netting. Berry prices vary widely, but \$.75 per pound is an approximate average over the last few years for fresh and processed sales. Farmers estimate mechanical harvesting costs are about \$.09 per pound, not including the depreciation and interest costs of ownership of the machinery.

### **CASH FLOW PROBLEMS?**

- If you do the work yourself, omit a portion of the labour cost when calculating the annual netting cost (see worksheet on the last page).
- If you are currently using other crop protection devices, subtract this operating cost from the annual netting cost. This could be as much as \$200/acre/year.

**Table 1. Berries Saved By Netting (lb./acre)**

		Berry loss without nets				
		10 %	20 %	30 %	40%	50%
Harvested yield/lb.	20,000	2,000	4,000	6,000	8,000	10,000
	16,000	1,600	3,200	4,800	6,400	8,000
	12,000	1,200	2,400	3,600	4,800	6,000
	8,000	800	1,600	2,400	3,200	4,000

**Table 2. Added Annual Gross Return by Netting (\$/acre)**

		Berry price \$/lb (the amount shown in brackets is the contribution to gross return, which is the berry price minus the \$.45/lb cost of harvesting the berries)				
Berries saved by netting (lb/acre)	Berry Price →	.65	.85	1.05	1.25	
	Contribution →	(.20)	(.40)	(.60)	(.80)	
6,000		1,200	2,400	3,600	4,800	
5,000		1,000	2,000	3,000	4,000	
4,000		800	1,600	2,400	3,200	
3,000		600	1,200	1,800	2,400	
2,000		400	800	1,200	1,600	
1,000		200	400	600	800	

**NET** (arrow pointing to 1.25 (.80))

**BREAK EVEN POINT** (arrow pointing to 2,000 yield row)

**DO NOT NET** (arrow pointing to 1,000 yield row)

**STEP #7**

**Break Even Point**

**Will the nets pay?**

This is where the added annual cost of netting just equals the added annual gross return by netting. Nets are worth putting up if the added return is greater than the annual cost of netting.

It pays to net if your added annual gross return is in the unshaded area of Table 2. Subtract the annual netting cost of \$765 (from Step #6, Column (6) on the next page) to find out how much extra money (net return) would be made by netting.

## Will Nets Pay on Your Farm?

This is an example for budgeting the cost of netting one acre of blueberries\*. Input your costs to see if netting will pay for you.

### STEP #1 AND #2. INVESTMENT COSTS, ANNUAL DEPRECIATION, AND INTEREST

Item	(1) Investment Costs		(2) Expected Life (years)	(3) Annual Depreciation (1) ÷ (2)		(4) Annual Interest @ 6% (1) x 50% x 0.06	
	Example (\$/acre)	Your Farm		Example (\$/acre)	Your Farm	Example (\$/acre)	Your Farm
Nets	1,500		7	214		45	
Poles (68)	250		10	25		8	
Wire and hardware	500		10	50		15	
Installation labour (22.5 hours/acre)	225		10	23		7	
Attaching nets (20 hours/acre)	200		7	29		6	
Supervision and misc. (15 hours/acre)	225		10	23		7	
<b>TOTAL</b>	2,900			364		88	

### STEPS #3, #4, AND #5. TOTAL ANNUAL NETTING COST

Item	Calculation Method	Annual Operating Cost	
		Example (\$/acre)	Your Farm
Labour – spring	9 hr. x \$10/hr	90	
Labour – fall	6 hr. x \$10/hr	60	
Repair and maintenance	\$2,700 x 3%	81	
Depreciation	From above table	364	
Interest	From above table	88	
<b>SUBTOTAL</b>		683	
Contingency	\$683 x 5%	34	
Risk	\$683 x 7%	48	
<b>TOTAL</b>		765	

### STEP #6. ADDED ANNUAL RETURN

	(1) Berries Saved by Netting	(2) Berry Price	(3) Harvest Cost	(4) Berry Price Minus Harvest Cost (2) – (3)	(5) Added Annual Return (1) x (4)	(6) Annual Netting Cost (from above table)	(7) Net Return Over Costs (5) – (6)	(8) Net? Yes if (7) positive, No if (7) negative
<b>Example</b>	3,200 (lbs/acre)	0.75 (\$/lb)	0.45 (\$/lb)	0.30 (\$/lb)	960 (\$/acre)	765 (\$/acre)	195 (\$/acre)	Yes
<b>Your Farm</b>								

\* Costs are based on a five-acre planting that is hand-picked. For smaller acreages, irregular shaped fields, or fields set up for mechanical harvesting, the annual netting costs increase by \$80/acre or more.

## For more information...

#### BCMAFF contacts:

Mark Sweeney, Berry and Nut Specialist,  
Telephone: 604 556-3056  
Bert van Dalfsen, Mechanization Engineer,  
Telephone: 604 556-3109  
Lorne Owen, Farm Management Specialist,  
Telephone: 604 556-3091

#### BCMAFF references on bird netting

(available from the Abbotsford Agriculture Centre):

- Suppliers of Bird Control Materials and Equipment for B.C. Growers. 1998.
- Installation of Bird-Proof Netting for Horticultural Crops. Engineering Notes. 1992.
- Integrated Bird Management – Blueberries. June 2000.
- Netting for Bird Control in Grapes – A Decision-making Guide. January 2002.
- Netting for Bird Control in Cherries – A Decision-making Guide. January 2002.