revolution

REVOLUTION ORGANICS

CLASS A COMPOST

INFORMATION PACKAGE

www.aforceofnature.ca

INDEX:

Pricing and Volume commitments

Minimum order for direct purchasing is 56 yards (equal to 28 tonnes) and will deliver in a walking floor trailer at a rate of **$48/yard. Total cost per load $2,688.**

Discounts available for 10 or more loads, please contact your sales rep to discuss.

Contact information

For all sales inquiries please contact:

Chris Bouchard

Phone - **250 809 8646**

Email - **compost@wearerevolution.ca**

or

CLICK HERE TO ORDER

What is compost?

Composting is the breakdown of organic wastes (such as food waste, leaves, yard trimmings, wood and paper) by microorganisms and soil bugs into a stable, humus-like material. This same natural process is used to produce compost in commercial composting operations, but it is optimized to speed up the process and to produce a homogeneous, marketable product.

What are the benefits of using compost?

When soil is amended with compost, organic matter and nutrients are added to the soil. Because of this, compost has several important functions in the soil:

- Breaks down slowly in the soil and releases nutrients for plant use over several years. Because of this, it is often called a 'slow-release fertilizer'.
- Increases soil water holding capacity and water retention and can reduce the amount of irrigation water required.
- Contains all 17 of the essential nutrients for plant growth to help alleviate soil nutrient and micronutrient deficiencies.
- Improves soil structure which enhances plant rooting.
- Reduces soil erosion by improving rainfall and irrigation infiltration rate on crop land.
- Promotes the growth of soil microbes and fungi which is important for healthy soil.
- Increases the retention of nutrients by the soil which improves soil fertility.

How is compost used in a fertility program?

Used over time, compost can replace or reduce the requirement for chemical fertilizer in non-organic systems. It is a moderate source of all nutrients including the 3 most important nutrients, nitrogen, phosphorus and potassium. Nutrients in compost are bound within the matrix of the organic matter and are released for several years after application as the organic matter brakes down. Therefore, one application of compost will not normally provide all fertility required by a crop but if compost is applied annually for several years, the amount of nutrients released will gradually increase and should eventually meet the nutrient requirements of all but the highest demand crops such as corn.

What is Revolution Organics made of?

Our compost is primarily made up of waste fruits, vegetables and other food from supermarkets and restaurants in BC's Fraser Valley. Clean ground or chipped wood residuals are added to the food waste and blended in the correct ratio to promote rapid composting. It is then cured for at least 18-24 months to produce a high-quality Class-A compost. We are closing the waste cycle by using food to grow food!

Can Revolution Organics be used in organic farming?

Yes. Our compost meets the "Class A" criteria for compost as established by the Organic Matter Recycling Regulations. It is certified for use in organic production systems and we have been using our compost on our own PAC's certified organic farm for years. See our assurance letter on page

What is Compost Maturity?

Compost maturity refers to the presence or absence of phytotoxic compounds in the compost. Phytotoxic compounds, which include ammonia (also known as ammonium) and other volatile organic compounds, can have negative impacts on plant germination and growth. Young or immature compost can contain high levels of these compounds. As compost matures, the level of these compounds decline and compost becomes more suitable for certain applications.

Revolution Organics compost is considered an immature compost despite being composted for a minimum of 18 months. This is a POSITIVE when properly understood. As compost matures, the amount of plant-available nitrogen declines and more of the nitrogen moves into slow-release forms, taking years to be fully available. Nitrogen is the nutrient that is generally required in the largest amount by plants and is most often deficient in the soil. The reality is that immature compost is a better source of nitrogen initially and simply requires a little more management than fully mature compost (with less readily available nitrogen).

With new planting, we recommend our compost be applied 2-4 weeks before seeding or planting and worked into the soil to allow these compounds to dissipate into the soil. See our application guidelines on the following pages for more information on how to maximize your results for your specific crops.

Understanding and managing compost salinity

High salinity is common in certain composts including manures and manure-based composts. The sodium level of Revolution Organics compost is also relatively high due to the food waste that it is made from. Salinity is a transient problem in compost: sodium, which is the primary contributor to salinity in the compost, is very mobile in soil and will disappear from the soil with irrigation; especially over-winter precipitation. Because of the salinity level of the compost, the recommended maximum compost application rate per year is 95 bulk tonnes per hectare (42 bulk tons per acre). Higher application rates are possible but soil salinity should be monitored.

Fertilizer value of Revolution Organics

Revolution Organics compost is equivalent to a ***2-2-1*** fertilizer (nitrogen-phosphorus-potassium, as-is basis). It contains approximately 2% nitrogen, 2% phosphorus (as phosphate) and 1% potassium (or potash). These are the 3 main nutrients required by plants. The attached table contains information on compost nutrient value.

The difference between Revolution Organics compost and chemical fertilizer is that most of the nutrients in the compost are in a slow-release form and will provide nutrients to plants all season long. There will be nutrients released from the compost in the following 3 years after application.

Available nutrients in the year of application:

Nitrogen: The compost contains 2% nitrogen. Of this, approximately 15% will be available to plants in the year of application.

Phosphorus (as phosphate): The compost contains 2% phosphorus (as phosphate). Of this, 1% will be available to plants in the year of application.

Potassium or potash: The compost contains 1% potassium as potash, 50% of which will be available to plants in the year of application.

The compost also contains varying amounts of all 14 of the other essential plant nutrients including sulphur, boron, copper and zinc.

Fertilizer value of Revolution Organics compost by weight and volume:

Nutrient:	**By weight ('as-is' or bulk)**		**By volume ('as-is' or bulk)**	
	kg/tonne	**lb/ton**	**kg/m^3**	**lb/yd^3**
Total nitrogen (as N) (2%)	13	25	7.5	10
- ***Available nitrogen (as N) (15% of total nitrogen)****	2	4	1	1.5
Total phosphorus (as P_2O_5) (2%)	16.5	33	9.5	16
- ***Available phosphorus (as P_2O_5) (1% of total phosphorus)****	0.13	0.25	0.07	0.12
Total potassium (as K_2O) (1%)	7.5	15	4.4	7.5
- ***Available potassium (as K_2O) (50% of total potassium)****	4	8	2.4	4

*Estimated amount available in the year of compost application.

How can Revolution Organics be used?

The main use for compost is as a *soil amendment*. Compost can also be used as a component of potting soil for *horticultural use*. Revolution Organics compost is most suitable as a soil amendment due to the relatively high salinity and ammonium-N in the compost.

Soil amendment: Typical uses include amendment of vegetable and flower beds, perennial beds and crop land. Compost is normally incorporated with tillage into the top 6" of soil but may also be top-dressed onto the soil surface. Revolution Organics compost is excellent for this type of application. Compost should be applied to the soil at least 2-4 weeks before planting to allow ammonium-N to dissipate, or in fall. Amended areas could also be irrigated well once before planting to remove some salinity.

Horticultural uses: Typical use is a component of potting soil for use in growing plants in pots. In this type of application, the compost is typically blended with other ingredients such as sand, perlite, wood residuals or peat moss into a planting medium that is used to grow plants in pots. If used in this type of application, the salinity and ammonium-N level of the compost will limit the inclusion rate to 10-20% of the finished mix. Inclusion rate can be increased if the soil is leached with water before planting to remove some of the salinity and ammonium-N from the mix.

How often should Revolution Organics be applied?

Compost can be applied annually in small amounts to boost soil organic matter and contribute to soil fertility or can be applied less frequently at higher rates to meet specific crop nutrient requirements. Crop specific application rates can be found on the following pages.

Annual application to maintain your soil's organic matter level: An annual application rate of 25 'as-is' tonnes/ha (10 tons/acre) is recommended to maintain soil organic matter and contribute to soil fertility. This rate can be applied annually to crop land or home gardens without concern of oversupplying soil with nutrients. On dryland sites, it is recommended to re-apply compost based on soil test results for soil salinity.

Higher application rates to meet specific crop nutrient requirements: A much higher application rate of compost is required to meet specific crop nutrient requirements. Typical application rates of Revolution Organics compost to meet crop nutrient requirements range from 50 to 95 'as-is' tonnes per hectare (22 to 42 tons/acre) depending on the crop to be fertilized. The recommended maximum annual application rate is 95 tonnes per hectare (42 tons/acre) due to salinity concerns. When using these high rates, re-application of compost should occur only every 3-4 years unless soil testing indicates that the soil is deficient in nitrogen and soil salinity remains within the acceptable range.

Using Revolution Organics for the fertilization of vegetables

The recommended application rates provided in the table below are based on the compost supplying 150 kg/ha (135 lb/acre) of available nitrogen in the year of application. The compost contains enough potassium and micronutrients to meet crop demand if applied at the recommended rates but may not provide enough phosphorus in the year of application. If phosphorus deficiency is a concern, additional supplementation may be required.

Note that if your crop land is severely nitrogen deficient there may be a temporary tie up of nitrogen in the year of compost application. This can be diagnosed through soil testing. In this case, it may be necessary to provide an additional source of nitrogen in the year of application.

Vegetables - compost to apply per unit area	Weight		Volume	
	Metric	Imperial	Metric	Imperial
Per 1,000 m^2 (100m by 10m area)	7.5 tonnes	7.4 tons	13 m^3	17 yds
Per 1,000 ft^2 (100 m^2)	750 kg	1650 lbs	1.3 m^3	1.7 yd
Per 100 ft^2 or 10' by 10' area (10 m^2)	80 kg	175 lbs	35 litres	7 gallons
Per 1 m^2 (1m by 1m or 3' by 3' area)	8 kg	18 lbs	13 litres	3 gallons
Per 1 ft^2 (1' by 1' area, for individual plants e.g. per tomato or pepper plant	700 g	1.5 lb	1.2 litre	5 cups

When and how to apply: Compost should be applied in the fall or 2-4 weeks before planting and worked in to the top 6" of soil. If top-dressing around existing plants, for example around tomato plants, it should be applied in a ring 6" to 12" away from the base of the plant, and gently worked in using a hoe or hand fork to allow plant roots to find the nutrients. It should be watered in following application. For flower beds, use half of the amounts indicated in the table below. Flowers have a much lower nutrient demand, and excess nitrogen will promote green growth at the expense of flowers.

Depth of application: The compost application should be approximately *1.3 cm* deep over the whole garden area. The compost should be worked into the top 6" (15 cm) of soil.

The compost has an approximate N-P-K value of 2-2-1 (nitrogen-phosphate-potash, as-is basis), and nutrient availability in the year of application is approximately 15% for nitrogen, 1% for phosphorus and 50% for potassium. Compost has 2.3% nitrogen on dry basis, and 35% moisture. These values can be used to calculate your own application rate based on soil test results.

Because the compost acts as a slow-release fertilizer, there will be a residual effect in the 3 years following application. At the recommended application rate, the compost will release an additional 20- 30 kg/ha of nitrogen in year 2, and smaller amounts in years 3 and 4. Therefore, compost should only be re-applied every 2 or 3 years, or when soil or leaf test results indicate a need for nitrogen.

Using Revolution compost for the fertilization of garlic

The recommended application rates provided in the table below are based on the compost supplying 185 kg per hectare (165 lbs per acre) of plant-available nitrogen in the year of application. The compost contains enough potassium and micronutrients to meet crop demand if applied at the recommended rates but may not provide enough phosphorus in the year of application. If phosphorus deficiency is a concern, additional supplementation may be required.

Note that if your crop land is severely nitrogen deficient there may be a temporary tie up of nitrogen in the year of compost application. This can be diagnosed through soil testing. In this case, it may be necessary to provide an additional source of nitrogen in the year of application.

Garlic - compost to apply per unit area	Weight		Volume	
	Metric	Imperial	Metric	Imperial
Per hectare (10,000 m^2)	95 tonnes	93 tons	160 m^3	215 yds
Per acre	35 tonnes	34 tons	65 m^3	85 yds
Per 1,000 m^2 (100m by 10m area)	9 tonnes	9 tons	15 m^3	22 yds
Per 1,000 ft^2 (100 m^2)	1 tonne	1 ton	1.5 m^3	2.2 yds
Per 100 ft^2 or 10' by 10' area (10 m^2)	95 kg	200 lbs	160 litres	35 gallons
Per 1 m^2 (1m by 1m or 3' by 3' area)	10 kg	22 lbs	16 litres	3.6 gallons

When and how to apply: If you are applying to rows (rather than broadcasting over the entire field), you should calculate the application rate based on row width. For example, for a 50 cm wide row, use the 1m^2 volume (16 litres) and spread it over a 50cm by 2m length in the row to calibrate your application. Compost should be applied in the fall 2-4 weeks before planting and worked in to the top 6" of soil. If applied in spring onto an existing stand of garlic, compost should be side-dressed along rows at least 6" from plants and shallowly tilled in.

Depth of application: The application rate recommended will be a layer approximately ***1.5 cm*** deep (approximately ¾ ").

The compost has an approximate N-P-K value of 2-2-1 (nitrogen-phosphate-potash, as-is basis), and nutrient availability in the year of application is approximately 15% for nitrogen, 1% for phosphorus and 50% for potassium. Compost has 2.3% nitrogen on dry basis, and 35% moisture. These values can be used to calculate your own application rate based on soil test results.

Because the compost acts as a slow-release fertilizer, there will be a residual effect in the 3 years following application. At the recommended application rate, the compost will release an additional 20- 30 kg/ha of nitrogen in year 2, and smaller amounts in years 3 and 4. Therefore, compost should only be re-applied every 2 or 3 years, or when soil or leaf test results indicate a need for nitrogen.

Using Revolution compost for the fertilization of vineyards

The recommended application rates provided in the table below are based on providing 100 kg per hectare (90 lbs per acre) of plant-available nitrogen in the year of application. The compost also contains enough potassium and micronutrients to meet crop demand if applied at the recommended rates but may not provide enough phosphorus in the year of application. If phosphorus deficiency is a concern, additional supplementation may be required.

Note that if your crop land is severely nitrogen deficient there may be a temporary tie up of nitrogen in the year of compost application. This can be diagnosed through soil testing. In this case, it may be necessary to provide an additional source of nitrogen in the year of application.

Vineyards - compost to apply per unit area	Weight		Volume	
	Metric	Imperial	Metric	Imperial
Per 1,000 m^2 (100m by 10m area)	5 tonnes	5 tons	8.5 m^3	11 yds
Per 1,000 ft^2 (100 m^2)	500 kg	1100 lbs	1 m^3	1 yd
Per 100 ft^2 or 10' by 10' area (10 m^2)	50 kg	110 lbs	85 litres	20 gallons
Per 1 m^2 (1m by 1m or 3' by 3' area or per grape vine)	5 kg	11 lbs	9 litres	2 gallons

When and how to apply: If applying on a new vineyard area, compost should be applied at least 4 weeks before planting (or the previous fall) and tilled in to the top 6" of soil. If amending an existing vineyard, compost should be broadcast at least 12" away from the base of plants. If you are applying to rows, you should calculate the application rate based on row width. For example, for a 50 cm wide row, use the $1m^2$ volume (9 litres) and spread it over a 0.5m by 2m length in the row to calibrate your application. If possible, it is recommended that the compost is tilled into the top 2-3" of soil to retain nitrogen and allow roots to access nutrients.

Depth of application: The application rate recommended will result in a layer approximately ***1 cm*** deep (½ "). If you apply a significantly deeper layer than this, you may oversupply the plants with nitrogen.

The compost has an approximate N-P-K value of 2-2-1 (nitrogen-phosphate-potash, as-is basis), and nutrient availability in the year of application is approximately 15% for nitrogen, 1% for phosphorus, and 50% for potassium. Compost has 2.3% nitrogen on dry basis, and 35% moisture. These values can be used to calculate your own application rate based on soil test results.

Because the compost acts as a slow-release fertilizer, there will be a residual effect in the 3 years following application. At the recommended application rate, the compost will release an additional 20- 30 kg/ha of nitrogen in year 2, and smaller amounts in years 3 and 4. Therefore, compost should only be re-applied every 2 or 3 years, or when soil or leaf test results indicate a need for nitrogen.

Using Revolution compost for the fertilization of orchards

The recommended application rates provided in the table below are based on providing 135 kg per hectare (120 lbs per acre) of plant-available nitrogen in the year of application. The compost also contains enough potassium and micronutrients to meet crop demand if applied at the recommended rates but may not provide enough phosphorus in the year of application. If phosphorus deficiency is a concern, additional supplementation may be required.

Note that if your crop land is severely nitrogen deficient there may be a temporary tie up of nitrogen in the year of compost application. This can be diagnosed through soil testing. In this case, it may be necessary to provide an additional source of nitrogen in the year of application.

Orchards - compost to apply per unit area	Weight		Volume	
	Metric	Imperial	Metric	Imperial
Per 1,000 m^2 (100m by 10m area)	7 tonnes	7 tons	11 m^3	15 yds
Per 1,000 ft^2 (10m by 10 m or 100 m^2)	700 kg	1500 lbs	1.2 m^3	1.5 yds
Per 100 ft^2 or 10' by 10' area (10 m^2)	70 kg	150 lbs	100 litres	25 gallons
Per 1 m^2 (1m by 1m or 3' by 3' area)	7 kg	15 lbs	12 litres	2.5 gallons

When and how to apply: If applying on a new orchard area, compost should be applied at least 4 weeks before planting (or the previous fall) and tilled in to the top 6" of soil. If applying to existing orchard, compost should be evenly distributed around all trees. Compost should be applied in a ring 12" from the base of trunk out to the dripline.

Depth of application: It is recommended, if possible, to till the compost into the top 1-2" of soil to retain nitrogen and allow roots to access nutrients.

The compost has an approximate N-P-K value of 2-2-1 (nitrogen-phosphate-potash, as-is basis), and nutrient availability in the year of application is approximately 15% for nitrogen, 1% for phosphorus, and 50% for potassium. The compost has 2.3 % nitrogen on dry basis, and 35% moisture. These values can be used to calculate your own application rate based on soil test results.

Because the compost acts as a slow-release fertilizer, there will be a residual effect in the 3 years following application. At the recommended application rate, the compost will release an additional 30-45 kg/ha of nitrogen in year 2, and smaller amounts in years 3 and 4, as well as small amounts of other nutrients. Therefore, compost should only be re-applied every 2 or 3 years, or when testing or growth problems indicate a need for nitrogen.

Report Number: C20261-10268
Account Number: 01112

A & L Canada Laboratories Inc.

2136 Jetstream Road, London, Ontario, N5V 3P5
Telephone: (519) 457-2575 Fax: (519) 457-2664

C20261-10268

To: ELEMENT MATERIALS TECHNOLOGY CANADA
19575-55A AVENUE
UNIT 104
SURREY, BC V3S 8P8
Attn: SURREY LOCATION
604-514-3323

For: 1446131

P.O. Number: POC127276

Reported Date:
Printed Date: Sep 21, 2020

COMPOST REPORT

Sample Number	Lab Number	pH	Lime Index	Available Organic Matter %	Phosphorus P ppm	Potassium K ppm	Magnesium Mg ppm	Calcium Ca ppm
1446131-1	**57493**	**6.3**	**6.5**	**27.0**	**602**	**4273**	**652**	**3789**

Sulfur S ppm	Zinc Zn ppm	Manganese Mn ppm	Iron Fe ppm	Copper Cu ppm	Boron B ppm	Sodium Na ppm	Nitrate-N NO3-N ppm	Soluble Salt ms/cm	Nitrogen (Total) (%)	Moisture %
257	**28.7**	**33**	**223**	**1.0**	**2.0**	**2197**	**5**	**7.2**	**2.25**	**24.2**

INTERPRETATION

CEC		Percent Base Saturation				Proportional Equivalents (meq)				Cation Ratio		C/N Ratio
meq/100g	% BS	% K	% Mg	% Ca	% Na	K	Mg	Ca	Na	Mg/K	Ca/Mg	
45.2	**99.1**	**24.23**	**11.86**	**41.90**	**21.13**	**10.96**	**5.36**	**18.95**	**9.55**		**4:1**	**14.0**
Optimum Range:		3 - 5	8 - 20	60 - 80		0.5 - 1.3				7:1	5:1	

Compost

* Results reported on a dry weight basis.
The results of this report relate to the sample submitted and analyzed.
* Crop yield is influenced by a number of factors in addition to soil fertility.
No guarantee or warranty concerning crop performance is made by A & L.

Results Authorized By: **Ian McLachlin, Vice President**

REPORT NO.
C20261-70003

ACCOUNT NUMBER
01112

A & L Canada Laboratories Inc.

2136 Jetstream Road, London, ON, N5V 3P5 Tel: (519) 457-2575 Fax: (519) 457-2664

TO:ELEMENT MATERIALS TECHNOLOGY CANADA INC.
19575-55A AVENUE
UNIT 104
SURREY, BC V3S 8P8

FOR:1446131-1

ATTN:Surrey Location
Phone:604-514-3322
Fax:604-514-3323

Compost Analysis Proficiency Testing Program

CERTIFICATE OF ANALYSIS

PROJECT NO:
PO#:POC127276
LAB NUMBER:2617004
SAMPLE ID:1446131-1

SAMPLE MATRIX:COMPOST
DATE SAMPLED:2020-09-16
DATE RECEIVED:2020-09-17
DATE REPORTED:
DATE PRINTED:2020-09-25

PARAMETER	RESULT	UNIT	DETECTION LIMIT	METHOD REFERENCE
Nitrogen (Total)	2.5	%	0.1	TMECC.04.02-D
Ammonia (NH3/NH4-N)	2487.69	ug/g	.01	Colourimetric
Total Organic Matter @ 550 deg C	59.92	%	0.10	LOI@550C
Moisture	24.18	%	0.10	TMECC.03.09-A
Compost Stability Index	8	---		TMECC.05.08-B
Respiration-mgCO2-C/g OM/day	BDL	mgCO2-C/gOM/day	0.01	TMECC.05.08-B
Respiration - mgCO2-C/g TS/day	BDL	mgCO2-C/gTS/day	0.01	TMECC.05.08-B

Comment:
Maturity Index: 8 - Inactive, highly matured compost, very well aged, possibly over-aged, like soil; no limitations for usage.

Results reported on a dry weight basis
* - accredited test
BDL - Below detectable levels
The results of this report relate to the sample submitted and analyzed.

C20261-70003

Results Authorized By:

Haifeng Song, Ph.D., C.Chem. Lab Director

Revolution Organics Quality Assurance Statement

Revolution Organics is the producer of premium Class A Compost. The Compost is produced from source separated organics, collected at the source by Revolution, and wood chips produced on and from the 700 acre Revolution Ranch. Inputs used to produce the Class A compost meet the requirements of Organic Production Systems Permitted Substances List. The production process for Class A compost meets the requirements of the Organic Matter Recycling Regulation (OMRR) going through a rigorous time, temperature and tracking process. Initially the feedstock is allowed to heat up to 55 degrees Celsius prior to entering the pathogen reduction phase. During the pathogen reduction phase each windrow is turned 5 times in a 15 day period to ensure all material receives equal heat treatment. Next the vector attraction reduction period is achieved by maintain temperatures above 45 degrees Celsius for a 14 day period. The final stage is curing where the class A compost is stored in curing piles for approximately 18 months prior to being processed through a screening system to achieve the desired end product. During this process the material is tested for fecal coliforms and trace elements. Test results routinely meet the threshold levels identified in OMRR due to the clean feedstock used to make the Class A product.

We are proud of the Class A compost produced on Farm, as a testament Revolution Ranch is a Certified Organic Farm under the Pacific Agricultural Certification Society (PACS). Revolution has been utilizing the Class A compost on our CO Farm since April 7, 2012 with fantastic results.