GREAT PACIFIC BIOPRODUCTS LTD.

CROP APPLICATION RATES – Pacific Natural Organic Fresh Fish Fertilizer

An after harvest or dormant season application is highly recommended for all crops and home & garden use, providing nutritional ingredients to the soil for the next growing season. Growers tell us this application is the 'best bang for the buck'. **See our commercial application rates on our Fertilizer Information page of our web site for recommended dilution rates for ground and foliar applications.**
http://www.greatpacificbio.com/section.asp?catid=138&subid=154&pageid=51
An excellent tool of soil and plant health is to check the sugar (Brix) level of the plant, based on the following recommended scale. (P=Poor; A=Average; G=Good; E=Excellent). You'll need a refractometer to measure Brix. Any drop in Brix/sugar level should be attended to with Pacific Natural. Pacific Natural will help increase the sugar in the plant and fruit.

The following crop application rates are guidelines that we have developed through trials and grower input. It is left to the discretion of the individual to try other applications depending on the crop, the existing soil fertility, local conditions, etc. We would be grateful for any feedback to keep this guide up to date.

Alfalfa

1. **10 gallons per acre after harvest.**
2. **2-3 x 3 gallons per acre foliar through spray rig or irrigation, diluted at least 50 parts water to 1 part fish concentrate.**

Almonds

1. **10 gallons per acre after harvest.**
2. **2-3 x 3 gallons per acre foliar before husk split.**

Brix Levels: P – 4; A – 6; G – 8; E – 10

Apples[1]

1. **5 gallons per acre foliar at pre-pink or petal fall.**
2. **4 gallons per acre 15-21 days after full bloom.**
3. **3 gallons per acre foliar 21-30 days later**

Brix Levels: P – 6; A – 10; G – 14; E – 18

Apricots

1. **3-4 gallons per acre foliar at petal fall.**
2. **3-4 gallons per acre 15 day later.**
3. **Fall ground application, 5 gallons per acre.**

Brix Levels: P – 6; A – 10; G – 14; E – 18

[1] For Apple and Cherry Trees – when fresh fish fertilizer is mixed with lime and sulphur (2% L, 2%S, 2% Fish + 200 gallons water per acre), the mixture can be applied foliar for thinning bloom as an effective and environmentally friendlier alternative to traditional methods. The natural oil content of our product provides a surfactant/spreader/sticker effect in addition to feeding the leaves and runoff feeding the soil. Do not apply in direct sun or heat of the day. Best to apply in evening or early morning.

Asparagus

1. **10 gallons per acre at planting to establish**
2. **15 gallons per acre second year.**
3. **20 gallons per acre third year and after.**

Brix Levels: P – 2; A – 4; G – 6; E – 8

Avacodos

1. **10 gallons per acre after harvest**
2. **2 x 5 gallon ground applications during growing season**

Brix levels: P – 4; A – 6; G – 8; E - 10

Barley (dry land)

1. **5 gallon per acre banded with seed.**
2. **5 gallons per acre foliar in spring at tillering**

Brix Levels: P – 6; A – 10; G – 14; E – 18

Barley (irrigated)

1. **10-15 gallons per acre banded with seed.**
2. **5 gallons per acre 30 days after emergence**
3. **5 gallons per acre through each 30 days for a total of 30 gallons.**

Brix Levels: P – 6; A – 10; G – 14; E – 18

Beans

1. **5 gallons per acre banded with seed.**
2. **Up to 5 gallons per acre foliar at pre-bloom.**

Brix Levels: P – 4; A – 6; G – 8; E – 10

Beans (lima)

1. **5 gallons per acre with seed.**
2. **5 gallons per acre foliar at 4th node.**
3. **5 gallons per acre at pre-bloom.**

Brix Levels: P – 4; A – 6; G – 8; E – 10

Beets

1. **10 gallons/acre after harvest**
2. **3 x 5 gallons/acre ground applications during growing season**

Brix Levels: P – 6; A – 8; G – 10; E – 12

Blackberries

1. **10 gallons per acre after harvest**
2. **1-2 gallons per acre each irrigation cycle (can be every 10-14 days up to 1 week before harvest), apply foliar by sprayer or sprinkler to runoff up to 8-10 gallons/acre total during growing season**

Brix Levels: P – 6; A – 8; G – 12; E – 14

Blueberries

1. **10 gallons per acre after harvest**
2. **1-2 gallons per acre each irrigation cycle (can be every 10-14 days up to 1 week before harvest), apply foliar by sprayer or sprinkler to runoff up to 8-10 gallons/acre total during growing season**

Brix Levels: P – 6; A – 8; G – 12; E – 14

Broccoli

1. **10 gallons per acre after harvest**
2. **3 x 5 gallons/acre banded during growing season**

Brix Levels: P – 6; A – 8; G – 12; E – 14

Cabbage

1. **5 gallons per acre at planting.**
2. **2-3 gallons per acre 3 weeks later.**
3. **2-3 gallons per acre foliar 3 weeks later.**

Brix Levels: P – 6; A – 8; G – 10; E – 12

Cauliflower

1. **10 gallons per acre after harvest**
2. **3 x 5 gallons/acre banded during growing season**

Brix Levels: P – 6; A – 8; G – 12; E – 14

Carrots

1. **5 gallons per acre banded with seed at planting.**
2. **5 gallons per acre foliar when tops have sufficient foliage.**
3. **4 gallons per acre foliar each 30 days for a total of 30 gallons.**

Brix Levels: P – 4; A – 6; G – 12; E – 18

Celery

1. **Prepare soil at 10 gallons per acre.**
2. **3 applications at 5 gallons per acre during season.**

Brix Levels: P – 4; A – 6; G – 10; E – 12

Cherries (see thinning footnote for Apples)

1. **5 gallons per acre between petal fall and shuck.**
2. **5 gallons per acre foliar at pit hardening.**
4. **5 gallons per acre 15-21 days post harvest.**

Brix Levels: P – 6; A – 8; G – 14; E – 16

Clover

1. **5 gallons per acre at planting. No added Nitrogen necessary.**

Brix Levels: P – 4; A – 8; G – 16; E – 22

Cole Crops

1. **5 gallons per acre at planting.**
2. **5-7 gallons per acre foliar 3-4 weeks later.**
3. **5-7 gallons per acre foliar 3-4 weeks later.**

Brix Levels: P – 6; A – 8; G – 10; E – 12

Corn (Feed)

1. **12-14 gallons per acre banded with seed.**
2. **6 gallons per acre foliar 30 days after emergence.**
3. **Third application of 5 gallons per acre.**

Brix Levels: P – 4; A – 8; G – 14; E – 20

Corn (sweet)

***Most climates will require a total of 20 gallons per acre.**

1. **10 gallons per acre banded with seed.**
2. **5 gallons per acre foliar when plants are about 4" tall.**
3. **5 gallons per acre foliar when plant is 18"-20" tall.**

Brix Levels: P – 6; A – 10; G – 18; E – 24

Cranberries

1. **10 gallons per acre after harvest**
2. **1-2 gallons per acre each irrigation cycle (can be every 10-14 days up to 1 week before harvest), apply foliar by sprayer or sprinkler to runoff up to 8-10 gallons/acre total during growing season**

Brix Levels: P – 6; A – 8; G – 12; E – 14

Cucumbers

1. **5 gallons per acre at planting.**
2. **5 gallons per acre foliar 30 days later.**
3. **5 gallons per acre foliar 30 days later.**

Brix Levels: P – 6; A – 8; G – 12; E – 14

Dry Peas

1. **5 gallons per acre at planting. No extra Nitrogen necessary.**

Brix Levels: P – 8; A – 10; G – 12; E – 14

Evergreens (and ornamentals) / Christmas Trees

1. **5 gallons per acre foliar following last frost.**
2. **2-3 gallons per acre foliar after bud hardening.**
3. **Third application if necessary. No foliar spraying after late August.**

Gooseberries

1. **10 gallons per acre after harvest**
2. **1-2 gallons per acre each irrigation cycle (can be every 10-14 days up to 1 week before harvest), apply foliar by sprayer or sprinkler to runoff up to 8-10 gallons/acre total during growing season**

Brix Levels: P – 6; A – 8; G – 12; E – 14

Grapefruit

1. **10 gallons/acre after harvest**
2. **3 x 5 gallons/acre banded during growing season**

Brix levels: P – 6; A – 10; G – 14; E - 18

Grapes (juice, table and wine)

1. **Fall ground application of 10 gallons per acre, depending on soil conditions.**
2. **5 gallons per acre mid-season**
3. **5-10 gallons per acre after harvest.**

Brix Levels: P – 8; A – 12; G – 16; E – 20

Grapes (raisins)

Brix Levels: P – 60; A – 70; G – 75; E – 80

Grass Seed (irrigated)

1. **10-16 gallons per acre in three applications, Foliar**

Grass Seed (dry land)

1. **3 gallons per acre banded at planting.**
2. **4-8 gallons per acre in two foliar applications.**

Hazelnuts

1. **10 gallons per acre after harvest.**
2. **2-3 x 3 gallons per acre foliar before husk split.**

Brix Levels: P – 4; A – 6; G – 8; E – 10

Hops

1. **5 – 10 gallons per acre to ground in late fall.**
2. **3 x 5 gallons/acre foliar during growing season.**

Brix Levels: P – 8; A – 12; G – 16; E – 20

Kohlrabi

1. **10 gallons/acre after harvest**
2. **3 x 5 gallons/acre ground applications during growing season**

Brix Levels: P – 6; A – 8; G – 10; E – 12

Lemons/Limes

3. **10 gallons/acre after harvest**
4. **3 x 5 gallons/acre banded during growing season**

Brix levels: P – 4; A – 6; G – 8; E - 12

Lentils

1. **3-5 gallons per acre at planting. No other Nitrogen necessary.**

Brix Levels: P – 4; A – 6; G – 10; E – 12

Lettuce (Iceberg/Green Leaf/Red Leaf/Romaine)

Brix Levels: P – 4; A – 6; G – 8; E – 10

Malting Barley

1. **3 gallons per acre with seed.**
2. **3 gallons per acre foliar at tillering.**

Brix Levels: P – 6; A – 8; G – 14; E – 18

Melons

1. **5 gallons per acre at planting.**
2. **5 gallons per acre foliar 30 days later.**
3. **5 gallons per acre foliar 30 days later.**
4. **No other nitrogen necessary.**

Brix Levels: P – 8; A – 12; G – 14; E – 16

Mint

If irrigated, can be applied trough sprinkler system during watering cycle, purge with water at end of cycle.

1. **2-3 gals per acre after harvest in fall.**
2. **2-6 gallons per acre per week for a total of 15 gallons per acre, until early July.**

Brix Levels: P – 4; A – 6; G – 8; E – 10

Nectarines

1. **3-4 gallons per acre foliar at petal fall.**
2. **3-4 gallons per acre 15 days later.**
3. **5 gallons per acre fall ground application recommended.**

Brix Levels: P – 6; A – 10; G – 14; E – 18

Oats

1. **3 gallons per acre with seed.**
2. **3 gallons per acre foliar at tillering.**

Onions

1. **10 gallons per acre banded with seed.**
2. **5 gallon per acre foliar 30 days later.**
3. **5 gallon per acre foliar each 30 days for a total of 25-30 gallons.**

Brix Levels: P – 4; A – 6; G – 8; E – 10

Oranges

1. **10 gallons/acre after harvest**
2. **3 x5 gallons/acre banded during growing season**
3. **Brix levels: P – 6; A – 10; G – 16; E - 20**

Pasture (dry land)/Sorghum

1. **3-5 gallons per acre foliar per cutting, diluted at 50:1.**

Brix Levels: P – 6; A – 10; G – 22; E – 30

Pasture (irrigated)/Sorghum

1. **Foliar or through irrigation system.**

Crop	Condition	Season	Rate - 50:1
Alfalfa	Any	Any	2-3 gal per acre
Alfalfa/Grass	50% grass	Any	4-10 gal per acre
Grass, low yield	Poor	Short	2-6 gal per acre
Grass, high yield	Poor	Short	4-8 gal per acre
Grass, low yield	Good	Short	6-10 gal per acre
Grass, high yield	Good	Short	14-20 gal per acre
Grass, low yield	Poor	Long	4-8 gal per acre
Grass, high yield	Poor	Long	8-12 gal per acre
Grass, low yield	Good	Long	10-18 gal per acre
Grass, high yield	Good	Long	24-30 gal per acre

Brix Levels: P – 6; A – 10; G – 22; E – 30

Pecans

1. **10 gallons per acre after harvest.**
2. **2-3 x 3 gallons per acre foliar before husk split.**

Brix Levels: P – 4; A – 6; G – 8; E – 10

Peaches

1. **5 gallons per acre foliar at petal fall.**
2. **5 gallons per acre 15 days later.**
3. **5 gallons per acre fall ground application recommended.**

Brix Levels: P – 6; A – 10; G – 14; E – 18

Pears

1. **5 gallons per acre foliar at pre-pink or petal fall.**
2. **4 gallons per acre 15-21 days after full bloom.**
3. **3 gallon per acre foliar 21-30 days later.**

Brix Levels: P – 6; A – 10; G – 12; E – 14

Peppers (Bell/Hot)

Brix Levels: P – 4; A – 6; G – 8; E – 12

Potatoes

1. **10 gallons per acre after harvest**
2. **Vegetative- from seed plant to beginning of tubers: band 10-12 gallons per acre with seed.**
3. **Tuber formation- tuber form, flower onset: 5-6 gallons per acre foliar.**
4. **Tuber enlargement- 5-6 gallons per acre at each stage.**
5. **Maturity- vine withers: 5-6 gallons per acre foliar.**

Brix Levels: P – 6; A – 8; G – 10; E – 14

Prunes & Plums

1. **10 gallons per acre after harvest**
2. **3-4 gallons per acre foliar at petal.**
3. **3-4 gallons per acre 15 days later.**

Raspberries

1. **10 gallons per acre after harvest**
2. **1-2 gallons per acre each irrigation cycle (can be every 10-14 days up to 1 week before harvest), apply foliar by sprayer or sprinkler to runoff up to 8-10 gallons/acre total during growing season**

Brix Levels: P – 6; A – 8; G – 12; E – 14

Rhubarb

1. **10 gallons per acre at planting to establish plant.**
2. **15 gallons per acre second year.**
3. **20 gallons per acre third year and after.**

Ryegrass (perennial)/Sorghum

1. **3-4 gallons per acre banded with seed.**
2. **4 gallons per acre sprayed early September.**
3. **8 gallon per acre sprayed in Spring.**

Brix Levels: P – 6; A – 10; G – 22; E – 30

Rutabegas

1. **10 gallons/acre after harvest**
2. **3 x 5 gallons/acre ground applications during growing season**

Brix Levels: P – 6; A – 8; G – 10; E – 12

Seed Grasses, Cover Crops

1. **Plant with 3-5 gallons per acre top-dressed or banded.**
2. **3-5 gallons per acre each 30 days up to 15 gallon total.**

Brix Levels: P – 6; A – 10; G – 22; E – 30

Spring Wheat

1. **3 gallons per acre with seed.**
2. **3 gallons per acre foliar at tillering.**

Squash

1. **5 gallon per acre at plant.**
2. **5 gallon per acre foliar 30 days later.**
3. **5 gallon per acre foliar 30 days later.**

Brix Levels: P – 6; A – 8; G – 12; E – 14

Strawberries

1. **10 gallons per acre after harvest.**
2. **5 gallons per acre with new planting.**
3. **5 gallons per acre foliar at pre-bloom.**
4. **5 gallons per acre foliar for crown building.**

- **Determine normal yield for the area.**
- **Split applications between banding with seed and foliar spraying of a maximum of 5 gallons per acre per application.**
- **Use 1 gallon of Pacific Natural per ton of product for climate and area.**

Brix Levels: P – 6; A – 10; G – 14; E – 16

Tomatoes

1. **5 gallons per acre at soil preparation.**
2. **5 gallons per acre foliar 3 weeks later.**
3. **5 gallons per acre before fruit set.**

Brix Levels: P – 4; A – 6; G – 8; E – 12

Turnips

1. **10 gallons/acre after harvest**
2. **3 x 5 gallons/acre ground applications during growing season**

Brix Levels: P – 6; A – 8; G – 10; E – 12

Walnuts

1. **10 gallons per acre after harvest.**
2. **2-3 x 3 gallons per acre foliar before husk split.**

Brix Levels: P – 4; A – 6; G – 8; E – 10

Winter Wheat

1. **5 gallons per acre banded with seed.**
2. **5 gallons per acre foliar in spring at tillering.**

Brix Levels: P – 6; A – 10; G – 14; E – 18

Zucchini

1. **5 gallons per acre soil preparation.**
2. **5 gallons per acre foliar 30 days later.**
3. **5 gallons per acre foliar 30 days later.**

Brix Levels: P – 6; A – 8; G – 12; E – 14

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