

CO₂: helping you get the perfect balance

Plant growth requires the correct balance of carbon dioxide (CO₂), water, light, and temperature. Very often greenhouses contain too little carbon dioxide during the day to achieve optimal growth, especially in the winter. Greenhouses without CO₂ enrichment do not have enough CO₂, which does not lead to maximum yield. Greenhouses that do use CO₂ enrichment, on the other hand, achieve the balance that the plants require, and the growth is **optimal**.

With our ecological UNI-CORN CO₂ generator, your greenhouse will benefit the exclusive VITAGRA technology. There currently exist CO₂ enrichment methods, but these use fossil fuels like natural gas and propane, and are environmentally unfriendly. The UNI-CORN™ generator uses a new technology to produce its CO₂ using corn as a *biofuel*. This just means that the generator burns corn, but there's more to it than that. Burning biofuel causes the generator to have no negative impact on the environment. The CO₂ that already exists in our atmosphere is trapped in corn when it grows. When we burn this corn, the CO₂ is simply released once again into the atmosphere. When fossil fuels are burnt, the CO₂ given off was not in the atmosphere before. In the end, burning fossil fuels causes more CO₂ to be in the atmosphere, and thus global warming occurs.



Obtain the balance you need without harming the environment.

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Getting the Balance Right

With natural CO₂



UNI♦CORN

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Advantages of the UNI-CORN generator:

It's fuelled by organic combustible (corn) which is two times less expensive than the propane and 75% of natural gas cost (see comparative table).

Absolutely no risk of ethylene (C₂H₄) production. Ethylene, which causes early flower senescence, is produced by the imperfect combustion of fossil fuels.

Up to 25 % of the initial purchase and installation cost can be contributed by the REDI (Renewable Energy Deployment Initiative) program of Natural Resources Canada

The equipment is very safe as the heat is ventilated and diffused, which makes an overheat problem non-existent.

It does not require additional ventilation, modification or frequent calibration.

Simple, mobile and flexible, VITAGRA exclusive to UNI-CORN will allow greenhouse growers to focus on their crops.

The generator has an extended warranty (5 years for internal combustion chamber in addition to a one year warranty for electronic parts).



Combustible	Qty of CO ₂ per Kg	Price per unit	Production cost of 1Kg of CO ₂
Propane	0.33 kg	42¢/ litre	27¢/kg of CO ₂
Natural gas	0.37 kg	47¢/ cubic meter	24¢/kg of CO ₂
Corn	0.58 kg	150\$/ metric ton	9¢/kg of CO ₂

Sources:

Propane: Propane Gas Association Group
Natural Gas: Metropolitan Gas, November '00
Corn: (\$135/ton of corn + \$15 freight) FPCCQ and Statistics Quebec, March '99

Frequently Asked Questions

What's the impact of this new corn generator on crops?

It has tremendous impact on quality and quantity of the crops.

It accelerates plant growth.

Pollination is not affected, and can still carry on as per usual.

It does not affect biological control.

How often does the generator need to be refilled?

The generator only needs to be refilled once a day (1 refill = 65 pounds (30 kg) of corn). 1000-ppm concentrations can be reached and maintained in a 100' x 100' greenhouse within 45 minutes.

Can the concentration of CO₂ be controlled?

Yes, the generator contains an electronic micro-controller that gives a stable flow of CO₂. In addition the controller is linked to a CO₂ probe that preserves the desired level.

What kind of corn does the generator require?

The generator uses regular corn that usually contains approximately 12% humidity. Usually the best prices are at the end of fall harvest.

Is the generator approved?

The machine is licensed by Warnock-Hersey, Mtl, QC. As per ULCS627 APFI (March 1993).

Is there a financing plan for CO₂ corn generator?

Yes, funds are available via the FCC (Farm Credit Corporation) subject to credit approval.

When were these tests conducted?

Our experiments began in 1995. Most growers have noted that plants were highly responsive to CO₂ enrichment generated by corn. The results showed approximately 20% increase of yields of tomatoes as well as all other green house products.