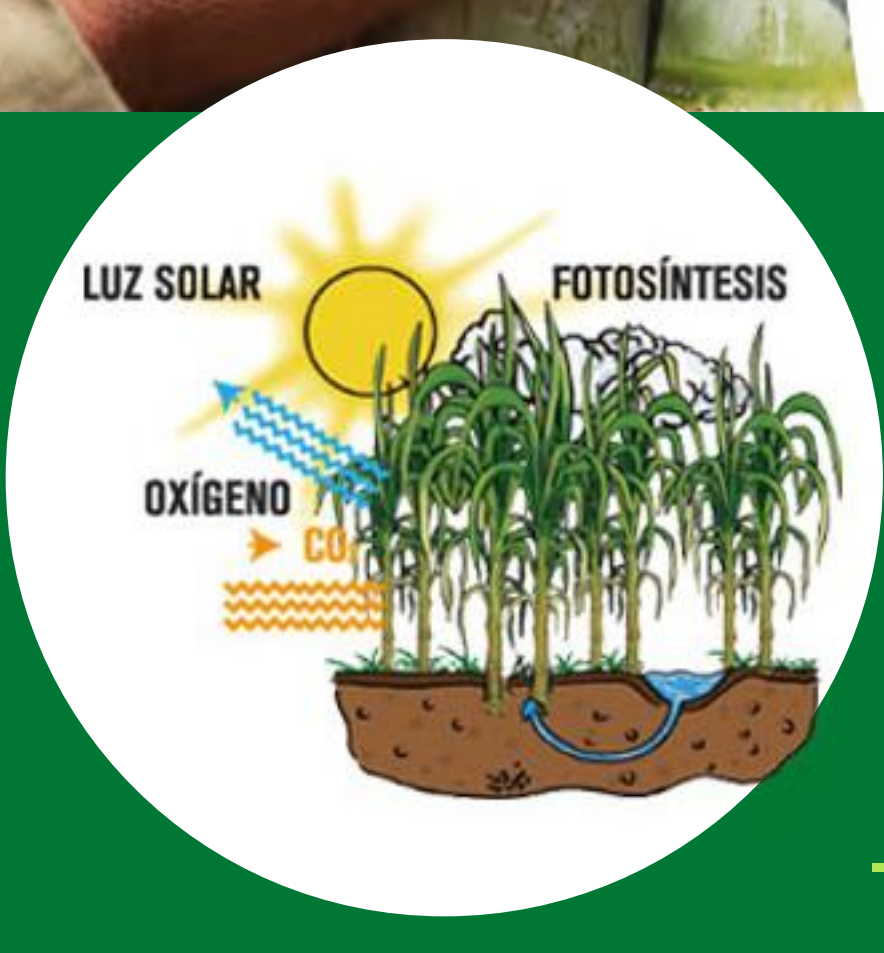
INGENIO PROVIDENCIA S.A.

Ingenio Providencia

Processes



Countryside

It includes all the manual and mechanized agricultural works required by the sugarcane crops, including the design, adaptation, preparation, planting and raising of the plantations until their harvest.

The Company has linked more than 34,000 gross hectares planted in sugar cane, and directly manages 13,800. The rest is managed by the sugar cane suppliers.

The field is adapted to make the cane production more efficient, improving irrigation and surface drainage, cultivation and this way facilitate the harvest. For this, a topographic survey is required with high precision equipment like thee Total Station, GPS (Global Positioning System), RTK (Real Time Kinematic), which facilitates the design and calculation of earthworks.

In new fields for the cultivation of sugar cane, we start with cleaning residues and then we level using crawler tractors or instrumented scrapers with GPS leveling systems. Afterwards, depending on the soil texture, which is verified with the maps of physical variability in the field, the soil is prepared with tire tractor, starting with two passes of sub-soiling, one in the direction of the slope and another across the first in an angle of 15 degrees, a pass of harrow and one or two passes with the rake.

When a soca is renewed, located leveling is performed, using the productivity map as a complementary tool. The first task is grubbing that is made with two passes with a horrow, then with the sequence tasks of subsoiling, plowing and raking. Thus the land is ready for the furrowing job that prepares the soil to receive the seed; this is done with a three-way implement coupled to a tractor autonomously guided by autopilot technology.

Planting is made with the sugar cane variety best suited to the agro-ecological zone and soil series and is done in two manners:

a) Mechanized planting: The seed cutting is done with a harvester and the planting is done with a equipment that fertilizes, plants and covers the seed. This task is done on autopilot.

b) Manual planting: It is made with pieces of cane from the seedbeds; these have a special handling, looking pure and healthy varieties. For the establishment of the seedbeds, the seed packets are treated in a chamber of hot water at 51 degrees Celsius for one hour to prevent viral diseases. Then, stalk pieces of 60cm long are cut, each with two or three healthy buds, and these will be the new plants. From seven to eight tons of seed are placed per hectare planted. Afterwards, it is manually or mechanically covered with a soil layer of five centimeters thick and the germination irrigation is applied either by furrows or by spraying.
Every 12 or 15 days, irrigation of germination is done in its early stages. Once the cultivation is settled, raising irrigation is done, approximately every 30 days.

The weed management in conventional canes is chemically performed twice, at 30 and 60 days approximately on plants and once again at 45 days approximately, in socas, and when necessary manual control is done with specialized staff for this task.

In the area cultivated by Providencia, the provisions of organic farming are followed, the weed control is done manually or mechanically or combining both systems.

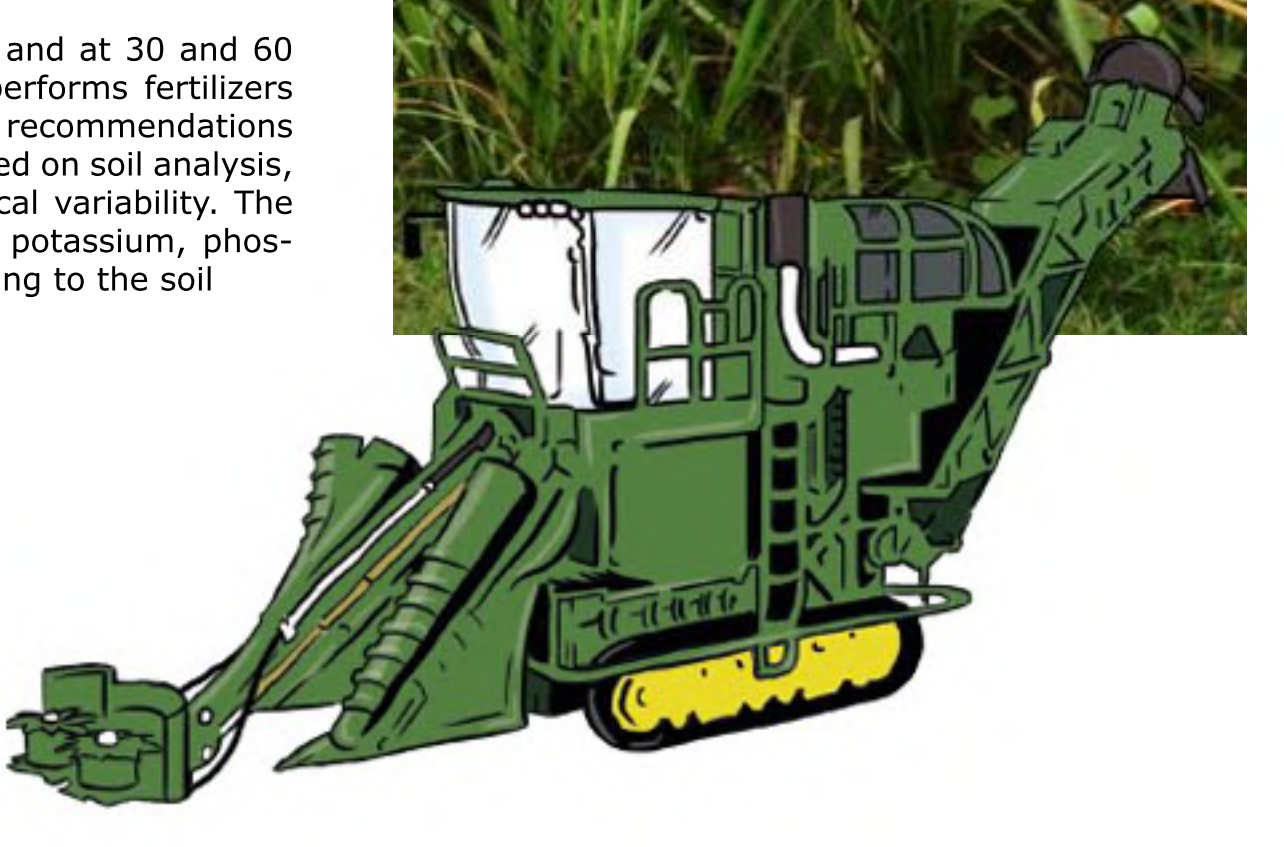
On canes of organic management, the fertilization is performed by applying composted materials derived from organic origin (vinasse) and planting green manures.

Irrigation is a fundamental task for the proper development of the crop. In the central region of Valle del Cauca, where Ingenio Providencia is located, it is determinant to apply three to five irrigations, depending on rainfall and evapotranspiration, these are done between zero and ten months in cane plants and between two and ten months for the soca canes. The frequency of application of irrigation is given by the water balance. For this purpose, we use surface water and deep wells that are driven by open channels, or tubular plastic or pipe with gates, from the source to the plot that needs to be irrigated In order to have a better use of water, drip irrigation is being performed.

At 45 and 75 days on cane plants and at 30 and 60 days on soca plants, Providence performs fertilizers application in accordance with the recommendations of the field chemical laboratory based on soil analysis, represented in the maps of chemical variability. The basic fertilization is with nitrogen, potassium, phosphorus and minor elements according to the soil characteristics and crop requirements. This work is done mechanically with tractors and fertilizer spreaders that allow dosing at a fixed or variable rate and add the fertilizer avoiding volatility.

The fertilization is supplemented by the application of by-products such as Provin (vinasse + nitrogen) and Provicomp (compost) as a nitrogen and potassium source, as well as a soil improver.

Pest control in sugar cane is made with integrated methodologies that combine the biological control with beneficial insects release, and also the cultural, mechanical and manual pest control.



Harvesting and transportation OF CANE

The Harvest is responsible for carrying out the programming and execution of the work of cutting, raising and transportation, meeting the standards of quality, timeliness, environmental legislation and low cost.

Programming of the canes to be harvested is done by selecting crops with greater maturity, based on the results of surveys carried out in the field. Once it is selected, the plot is burned complying with environmental legislation and the protocol to effect a cane burning.

This work is supported by a network of 34 weather stations that are consulted in real time to determine the speed, wind direction and appropriate time to do the burning safely. In the cane cutting process, manual and mechanized techniques are used.

Mechanized cutting It is done with harvesting machines that cut and clean de cane and then put it in wagons. Manual cutting It is done with trained staff, meeting the standards for Safety and Health at Work, established by Ingenio Providencia and the labor legislation.

The raising of the manually cut cane is done with lifters machines that collect the cane that is accommodated in "chorras" or lines of six furrows. The transport is carried out in trucks that are controlled by satellite.

Ingenio Providencia has seven fronts that are responsible to provide three million tons of sugar cane per year.

Fabrica

Cane patios
The cane coming from the field is sampled in order to know its quality, then it is weighed and stored in the patios or disposed to the cane tables to be carried to the mill by the cane conductors.

Preparation of cane
On its way to the mill, the cane is prepared by a mincer and a shredder delivering cane to the mill with the highest level of preparation to facilitate the extraction of juice and improve the efficiency of it.

Milling
The prepared cane reaches the mill where the juice for further processing sugar is extracted. The cane is ground in six mills of four mallets, driven by electric motors and speed shifters.

The conductors carry the prepared cane through each mill and extract the juice.

To achieve the extaction of the maximum quantity of sucrose cane, the material coming out of each mill is added with juice or water. At the exit of the last mill, bagasse is obtained with a low content of sucrose and moisture.

Steam generation
The bagasse with low sucrose content is used in the boilers specially designed to consume biomass and coal. The steam obtained from the boilers moves the turbogenerators that produce the electric power required by the factory, this is 100% electrified and the deep wells serving the cane crops.

Power generation
The boiler burns bagasse, which is a renewable fuel by-product of the milling cane. During the combustion process, the osmosis water is heated to produce high pressure steam at 955 psig and a temperature of 950°F. The gases produced during combustion pass through cyclone separators that remove the coarse particles of ash. Thereafter, the gases that still have fine particulate material go to an electrostatic precipitator of high efficiency, which slowly travel through a series of polarized electrostatically plates that catch them to finally be emitted into the atmosphere, through the smokestack, gases with less than 50 micrograms per cubic meter, minimizing the environmental impact by reducing emissions of greenhouse gases into the atmosphere.

The steam generated in the boiler is then conducted to the turbines where it becomes in motion, reducing the pressure and temperature of the steam that is delivered to the different processes of the Factory, such as evaporation, cooking juices and honey warming for the fuel alcohol production. This steam is also used in the production of fuel alcohol. The mechanical energy of the turbine deliveries movement to a generator through a speed reducer. The generators produce enough energy to power all electric motors of the factory, lighting and power the control systems. The unconsumed energy is equivalent to 14 MWh, it is delivered to the public network with capacity to supply a city of 130,000 inhabitants.

Water treatment plant for the boilers
This plant sends completely softened water to the boilers and the cooling towers. A portion of the treated water in this plant is used as dilution water in the fermentation. Thus, the process does not generate any liquid effluent.

Weighing, sulfation and alkalizing
The juice extracted in the mill is weighed to know the amount to be processed. To whiten the juice, it is sulfited in cold, then lime is added to neutralize its acidity and to help in the separation of the existing solids.

Heating and clarification of juice
After adding it the lime, the juice is heated to accelerate the separation of no-sugar solids.

Floculant is added to the hot juice and sent to the clarifiers, where the separation of insoluble solids is achieved, they fall forming a sludge. The sludge juice is recovered by filtration and transformed in cachaza (sugar cane sludge).

The clarified juice is sent to the evaporators.

Sludges filtration and clarification of the filtered juice
LThe sludges obtained from the clarifier are sent to the filtration station where they are prepared with bagasse, flocculant and lime. This mixture forms a porous cake on the rotary vacuum filters, where hot water is added and is extracted as much as possible sucrose in form of juice.

The the solids from liquids of the juice obtained are separated to obtain a clearer and brighter material. This is obtained at the juice clarification station where it is mixed with phosphoric acid, lime and flocculant, and then sent to the clarifier, where air is injected into small particles that make the solids float in form of foam.

This is removed and sent to the whitewashing juice tank.

The resulting solid matter from the filtration is conducted to a hoppers, where it mixes with ash coming from the boilers. This mixture is sent to the composting plant, where it is mixed with the vinasse that is the byproduct of the manufacture of alcohol, forming the compost used in the field to adapt and enrich poor soils in organic matter.

Juice evaporation
The clarified juice has a high water content that is essential to be removed. This is achieved in the evaporation station where a juice of about 15° Brix is received and it concentrates to 65° Brix resulting in the cane syrup.

Cane syrup clarificaion
Solids and liquids of the cane syrup coming from the evaporators are separated, to obtain a clearer and brighter material. This is obtained at the clarification station where the cane syrup is mixed with phosphoric acid, lime and flocculant, and then sent to the cane syrup clarifier, where air is injected into small particles that make the solids float in form of foam.

This is removed and sent to the whitewashing juice tank.

Crystallization
This process is performed in the bins, where the water of the clarified syrup cane is evaporated resulting in the crystallization of sucrose (sugar).

This crystallization can be observed in the mass that is the mixture of honey and sugar crystals.

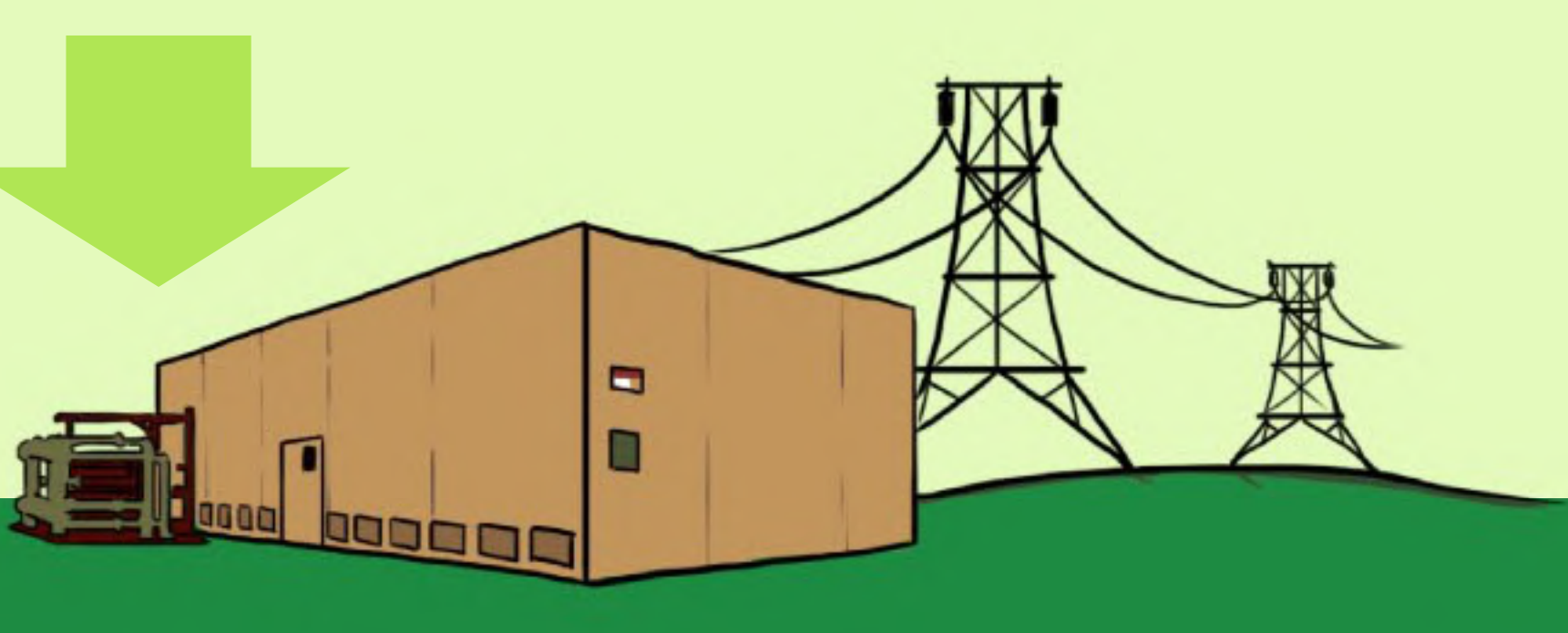
Centrifugation
The mass of the bins is sent to the centrifuges, to separate the honey from the sugar crystals. In order to obtain whiter sugar, within the centrifuge hot water is applied to remove honey residues from the crystals. Honey "A" is sent to a storage tanks, where it is subsequently used in another crystallization and centrifugation process , where honey B is obtained, this is the raw material for alcohol production.

Drying
The sugar is discharged from the centrifuge "A" or first, it is sent to the dryings to remove excess moisture.

Packaging and storage
The dry sugar is sent to the packaging station; it is packaged in the different presentation types for the national and international markets.

Providencia products meet all quality standards required by the customers. In its portfolio, there are:

- White and brown sugar
- Providencia Organic Sugar
- Alcohols
- Organic fertilizer
- Electric power



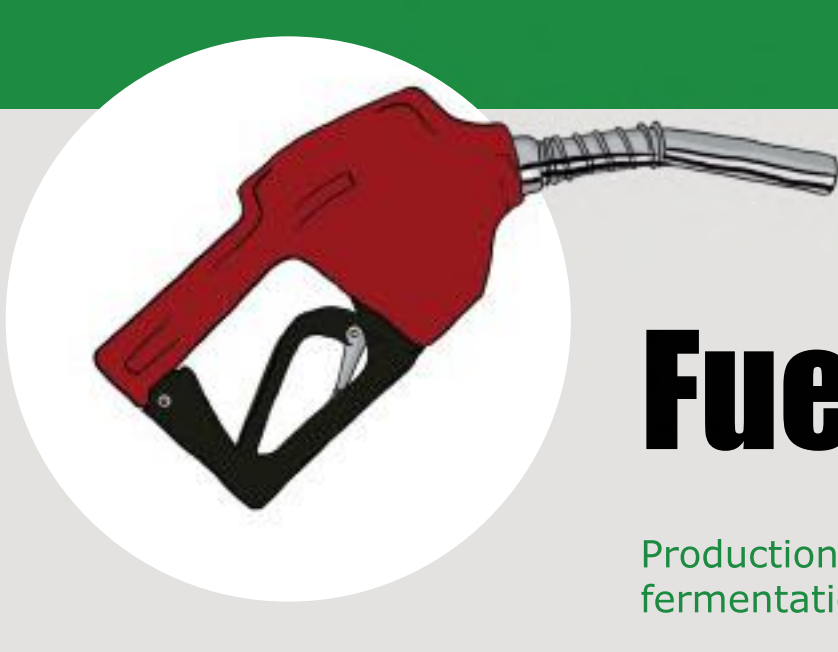
Power cogeneration

Transformation of the thermal energy of the steam generated in the boilers into electric power, using turbo-generators.

On July 15th of 2009, Ingenio Providencia put into operation the energy cogeneration plant from the cane bagasse, a project of clean development mechanism from the rational and efficient use of energy, optimizing the use of energy resources provided by the sugar cane, a biomass important source.

The cogeneration power plant has the capacity to generate 38 Megawatts per hour (MWh), to achieve this it was necessary to install a high-pressure boiler with a capacity of 400,000 pounds of steam per hour, two turbo-generators with capacity of 20 and 18 MW each one and one electrical substation of 25 MVA that raises the voltage from 13,200 volts to 115,000 volts.

With the commissioning of the cogeneration plant, a better use of the energy capacity of the fuel was achieved, reaching greater efficiency of installed equipment and including new equipment with the latest technology for the efficient production of steam and electricity generation, required in the operation of sugar, alcohol fuel and compost plants. By installing a new high pressure and temperature boiler and two turbo-generators, it is possible to meet the consumption needs of Providencia and cogenerate power for the public network. This clean energy generated from biomass, follows the guidelines of the Kyoto Protocol, which favors the preservation of the environment, by decreasing emission of tons of CO_2 to the atmosphere. For this reason, in Ingenio Providencia we affirm that "we illuminate Colombia with renewable energy."



Fuel alcohol

Production process of anhydrous alcohol from molasses, using fermentation, distillation and dehydration processes.

Fermentation
Honeys obtained as by-products in the processing of sugar (cane syrup, honey A, honey B) are used in the Distillery as a raw material in the alcohol production.

The sugars containing the molasses and that are not used during the sugar crystallization are converted to ethanol and carbon gas by means of a biochemical transformation process called fermentation, this is developed by the yeast.

The fermentation process is carried out through a continuous process in four fermenters that guarantee a fermentation time of 24 hours, obtaining as a product a mixture of organic compounds called wine, with a concentration of 10.2% (v/v) in ethanol.

Yeast recovery
The wine obtained in the last fermenter contains the yeast that transformed the sugars into ethanol, part of this yeast is recovered in the settling tank during the sedimentation process and thus is returned to the fermentation process. The product overflowing the settler tank is stored in a tank and then send it to the distillation process.

Yeast propagation
The yeast used in the fermenters is obtained in the breeding tank, where yeast is reproduced through the provision of sugars provided by the honey and also air, antibiotics and nutrients containing mainly nitrogen and phosphorus are added; these facilitate the reproduction of new is added yeast cells.

Distillation
The must obtained in the fermentation process is sent to distillation columns where ethanol is concentrated up to 95% (v/v), by means of the ethanol distillation in multiple stages.

The distillation process starts in the sheder column where the wine at a concentration of 10.2% (v/v) of ethanol is distilled concentrating ethanol up to 42% (v/v), removing some volatile impurities of the ethanol.

As a by-product of this first separation, the vinasse is obtained and is re-circulated by 45% for the fermentation, representing an environmental advantage by reducing the consumption of 1150 m^3/ day of water in the fermentation. The remaining 55% is sent to the evaporation process of the Flubex.

The alcoholic vapor obtained in the sheder column is addressed to the rectifying column where the rectified alcohol is produced at a concentration of 95% (v/v) of ethanol, in the bottom of the column, the "flemaza" is obtained as a byproduct of flemazas; these are fed to the wastewater treatment plant.

Alcohol dehydration
For mixing gasoline with ethanol it is necessary to remove the moisture from the rectified alcohol and to concentrate it to 99.6% (v/v) of ethanol. By means of a dehydration process with molecular sieves, water is retained and ethanol reaches its maximum concentration degree, denominated as anhydrous or dehydrated alcohol.

Concentration of vinasse
The dilute vinasse in the sheder column and not re-circulated to the fermentation process is concentrated in the vinasse evaporators Flubex, where water evaporates and the solids are concentrated between 30 and 35° Brix, calling this by-product concentrated vinasse.

We daily send on average 350-400 m^3 of concentrated vinasse to the composting plant where it is used for the generation of organic fertilizer.

Wastewater Treatment Plant
The wastewater treatment plant in the Distillery receives the "flemazas" and the condensates of the concentration of vinasse.

Storage of alcohol
The fuel alcohol plant has a storage capacity of 7.5 million liters, this corresponds to a production of 25 days. From these tanks, the denatured alcohol is loaded into tanker trucks with an addition of 2% of gasoline, and this is collected by the gasoline distributors.

Composting

Production of mineral organic fertilizer from by-products of sugar and anhydrous alcohol production.

The industrial composting plant processes the organic waste generated in the production of sugar and ethanol: sludge juice, ash, bagasse, leaves and concentrated vinasse and transforms them into a stable and sanitized product applicable in agriculture as an organic fertilizer with 30% moisture or as a soil improver.

The composting plant of Ingenio Providencia S.A., has capacity to process 420 tons of waste and 200 tons of vinasse per day, producing 150 tons of compost per day.