



VRS

Value Recovery Systems, Inc.

promotes

From Waste.....



VRS – Machines
make it possible to
recycle

waste into valuable
resources

...to Valuables



You receive...

...high quality **fertilizer**



...**water** for watering
flowers and plants

?

?

?

How does it work

?

Load the **machine**...



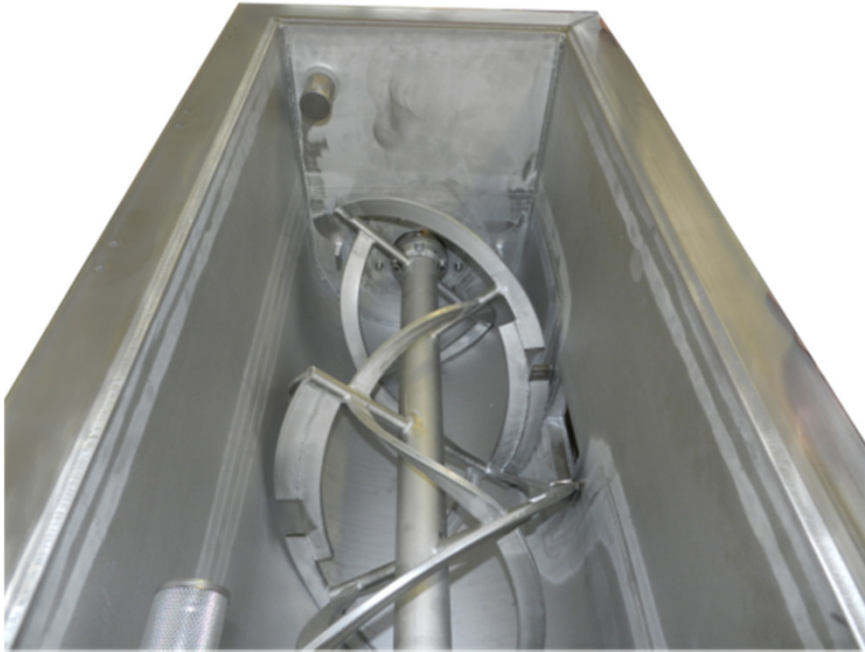
...press the **button**...



...and in 8 – 11 hours you receive
your own **fertilizer**



Food waste is **grinded** with
special cutter-system



and **heated** indirectly with
thermo oil up to 140° C

Steam is condensed and turned into
water

the **amount** of water depends on
the **moisture** of the **food waste**

The **drying** time depends on
the **moisture** of the **food
waste** as well

normally about **8 – 11 hours**

Water is recovered in a Tank

Water is clear and smells slightly of the raw material

The water still contains a small amount of minerals and organics

Most customers use the water for watering their flowers or vegetables



VRS – machines use

less than 1 kW/h per liter

of evaporated water

out of 150 kg of food waste

you recover 120 liter of water and

dry, steril granular

The Product before and after

The analysis:
Aerobic Bacteria
in unprocessed material

143'600'000 KBE/g



Aerobic Bacteria
in fertilizer

none



The excellent Idea



The Hotel Regina
in Wengen (CH) is the first
VRS customer
offering the excellent
Fertilizer to their
guests

A big advantage of VRS – machines is the

treatment of food waste at

Customers' site



Normally kitchen
staffs move the
container from the
kitchen into the
storage





the transport crew takes the container
to the plant and change the full
container into empty containers

but... who controls whether containers are free of
bacterias?

the **contamination** problem
can only be solved in **recycling**
food waste at **costumers'**
site



Container transportation is a **risk**

Containers with **food waste** are to be **transported** from the kitchen to the bio-gas plant or the **incineration plant**

The total amount of waste in Switzerland is **225'000 tons** per year



Pollution caused by centralized system



225'000 tons
of waste must be transported!!

**Each vehicel makes the following
pollution per 100 km with 60 km/h**

Diesel	20 liter
NOx-emission	1'395 g
SO2-emission	82 g
CO2-emission	52'400 g
emission of dust	20 g

Savings we can make with on-site treatment



Transporting time per year	38'333 hours
Driving distance per year	2'300'000 kilometers
NOx-emissions per year	32'085 kg
SO2-emissions per year	1'886 kg
CO-emissions per year	7'360 kg
Dust per year	460 kg

Just in
Switzerland

300 – 600 million tons of
CO₂
is emitted worldwide every year
to produce Nitrogen fertilizer

For the production and transport

of one ton

of industrial

Nitrogen fertilizer

we need to use the following energy resource

2000 kg of crude oil

or **22'000 kW/h** of electricity

in comparison



To produce **1000 kg** of fertilizer
with **VRS** system
the machine uses **4000 kW**
of **electricity**



In return, we get

4000 liters of

Water

as well as the fertilizer

32'400'000 kg of CO₂
can be saved



This estimate is based on the calculation if every business and home in Switzerland use VRS systems and average of various energy resource used

Food waste



mixed

with cartons



and newspapers



become fine **Powder**

This powder can be **pelletized**
and **used** for various purposes



With the
VRS – machines
Orange-Oil
is produced
as well ...



...and
Salmon-Oil



The manufacturing



The VRS - machines



VRS – Génie II

Capacity: 2 x 12 – 15 kg / day



VRS – 150 „Swiss“

Capacity: 2 x 75 kg / day

No more tipping fees for the
removal of food waste

Summary

The machine can be amortized within 2 or
3 years

No more Danger of disease

New jobs are created

No more refrigeration of
the food waste

Summary

32'400'000 kg less CO₂


Reduction of
environmental pollution due to
75% less transport volume

Less
imports of
fertilizer

From Waste to Valuables

VRS – Valuable Recovery Systems, Inc.



A woman with long brown hair, wearing a white shirt and bunny ears, is lying in a field of white daisies with yellow centers. She is smiling and resting her chin on her hand. The background is a soft-focus field of similar flowers.

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