

Automated line for seed preparation

Fully automated treatment and packing facility of seed samples for trial stations



The economic environment requires from agronomic players to develop and produce at the best possible cost while complying with stricter environment directives. Therefore more and more production steps and complete workshops are automated.

Challenge

The **GEVES** (French official organization for variety evaluation and seed testing) intended to upgrade its seed preparation workshop. From this workshop, the GEVES ships every year 1500 orders containing 30.000 bags of 19 different species.

The aims of the modernization were:

- **accelerating** the workflow by automation
- **improving** the reliability of order processing
- **protecting** the staff from direct contact with phytosanitary products

Our solution

Made to measure according to customers specifications, OPTOmachines has developed an automated treatment and packing line receiving quantities up to 250 kg and producing bagged samples of 0,1 – 1,5 kg.

The combination of know-how in the fields of **agronomy, automation, programming and mechanics** enabled OPTOmachines to design a fully automated facility synchronizing perfectly measuring, treatment and bagging devices linked to a supervisor.

Functioning

After preparation by a mixer with a maximum capacity of 250 kg and a homogenizer with a maximum capacity of 60 kg, the seeds are processed in a machine adapting automatically the kind and the quantity of phytosanitary products. The seeds needing no treatment are directly led to the bagging machine via a by-pass.

In the bagging machine, the samples are bagged and are labeled with a sticker.

The finished samples are taken by a conveyor system to the distribution area with space for 80 cartons. The operator weighs the filled carton and finishes the process by sealing and strapping it.

Benefits

• Cost-saving:

- accelerated & more reliable process
- precise dosing of phytosanitaries

• Environment friendly use of phytosanitary products:

- used in a completely closed circuit
- product excess redirected into the containers
- very low water consumption for rinsing

• Improved ergonomics:

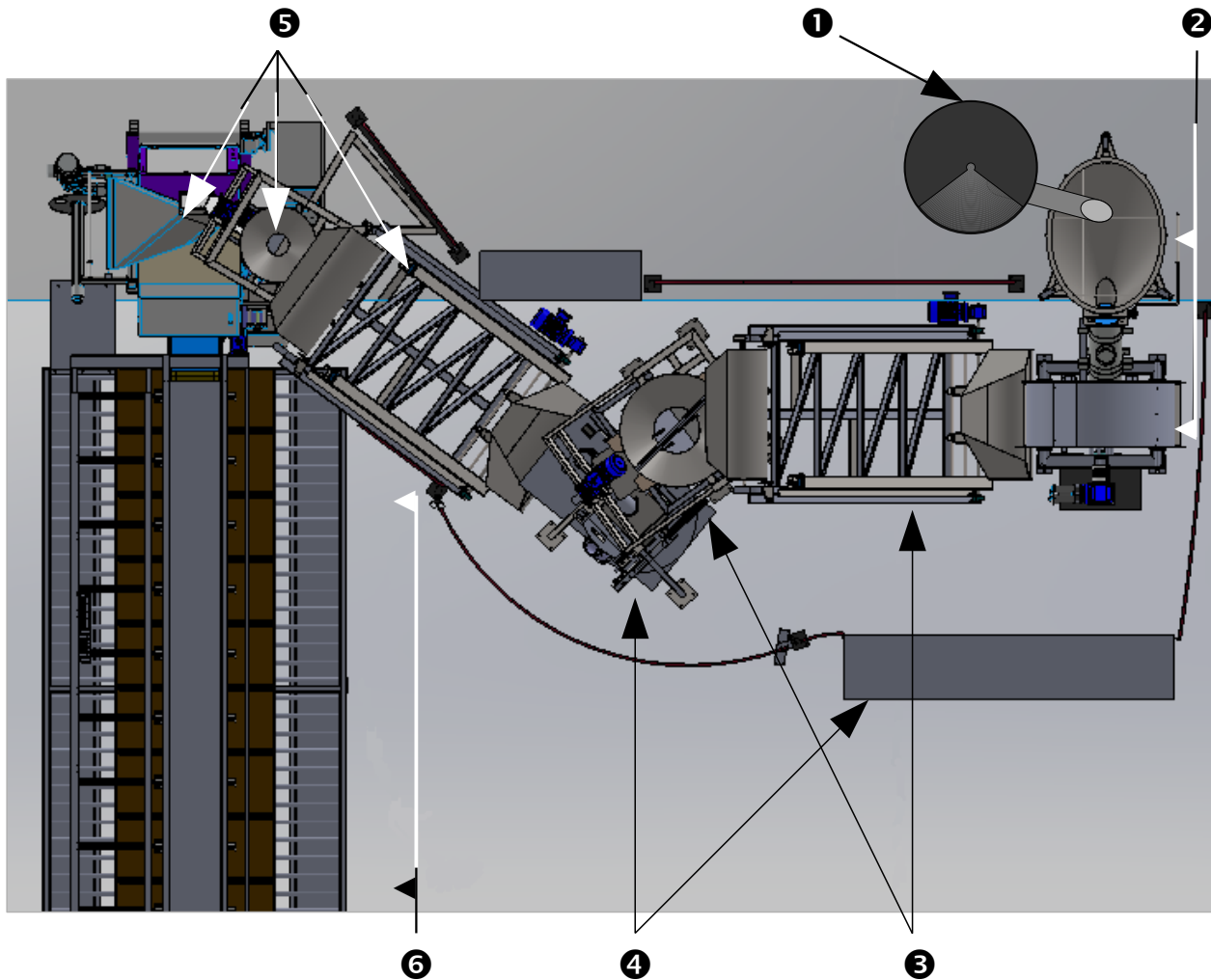
- no heavy physical efforts
- no direct contact with phytosanitaries

Process

- 1 **Mixer:** max. 250 kg, blending several batches, filled at ground level and raised by a lifting platform
- 2 **Hopper & homogenizer:** max. 60 kg, weighing, homogeneous distribution of seeds in a sample
- 3 **Elevator & doser:** measuring specific weight, dosing sub-lots – especially for treatment
- 4 **Treatment machine & cabinet with pumps:** 35 l & 25 kg, space for 4 canisters, 5 mixing pumps
- 5 **Elevator, doser & bagging machine:** dosing for bagging, bags of plastic foil, 0,1 – 1,5 kg
- 6 **Distribution area:** 80 cartons on hold on roller conveyors, manual weighing, taping & strapping

Technical data & dimensions

- Cycle time: 5 to 10 bags / min
- Packing capacity: 80 cartons
- Dimensions:
 - preparation area: 2,50 x 4,40 x 1,50 m WxHxD
 - treatment area: 2,40 x 3,00 x 1,80 m WxHxD
 - bagging area: 2,60 x 4,30 x 3,20 m WxHxD
 - distribution area: 18,30 x 1,80 x 1,90 m WxHxD



The French company OPTOmachines is a renowned specialist for optical measuring and analysing equipment to the agronomy industry. The portfolio contains devices for weighing, counting, classifying applications but also complete custom-made lines for phenotyping, packaging and treatment, etc. OPTOmachines supplies the seed industry leaders, prestigious research institutes and independent laboratories.