TOSCA ALLROUND

1. IOT and Data management
2. Data analytics
3. Line management
4. Equipment efficiency control

ALLROUND
VEGETABLE PROCESSING

Optimizing Line

ALLROUND
VEGETABLE PROCESSING

Five levels of success

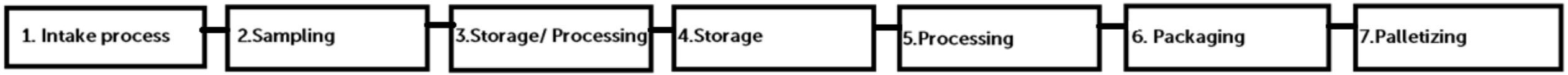
1. ERP Integration : Seamless integration of enterprise resource planning data with actual production data.
2. One dashboard to access all data and real time process and machine data anywhere: Web based.
3. Improve Equipment efficiency : Eliminating downtime, maintenance alerts.
4. Operational data : Real time data: Like running hours, Alarms history, Man power, Electricity and water consumption,
5. Throughput : Input raw material, Waste management, Manning, Output unpacked, Packaging and palletizing.

For example

Home page of SCADA system （Supervision and data acquisition）

Process flow

1. Intake process
2. Sampling
3. Storage / Processing
4. Storage
5. Processing
6. Packaging
7. Palletizing



Step 1 : Intake process

1. Gross weight
2. Product name and variety
3. Product in time and date
4. Date of harvest, growing area and farmer detail
5. Details of transporter
6. Instruction to intake place, store or process
7. Message/WhatsApp/email to supplier

For example

ALLROUND VEGETABLE PROCESSING

Receiving page of SCADA system

Intake process

TOSCA ALLROUND

Home | Vehicle detail | Soil extracted | Product detail | Sampling | Report

Gross weight	4200 **Kg.**
Product detail	Potato, suna
Product in time	11 : 34 : 20
Product in date	14/01/2019
Harvest detail	Potato 10/01/2019
Vehicle No.	1200
Driver info	100
Instruction to intake	Storage
Mail to supplier	Message sent to supplier

Print

For example

Receiving page of SCADA system

Intake process

TOSCA ALLROUND

Home | Vehicle detail | Soil extracted | Product detail | Sampling | Report

Gross weight	4200 **Kg.**
Product detail	Potato, suna
Product in time	11 : 34 : 20
Product in date	14/01/2019
Harvest detail	Potato 10/01/2019
Vehicle No.	1200
Driver info	100
Instruction to intake	Storage
Mail to supplier	Message sent to supplier

Print

Step 2 : Sampling

ALLROUND
VEGETABLE PROCESSING

1. Quality
2. Lab test of residues of toxic
3. Acceptance and Rejection
4. Estimating rejections/ not for consumption
5. Grade estimation
6. Picture of sample
7. Message/WhatsApp/email to supplier

For example

Sampling report at receiving page of SCADA system

Sampling Report

TOSCA ALLROUND

Home | Sampling | Lot detail | Location | Data Log | Report

Lot No.	143
Quality	Potato good quality
Test of chemical toxic	No toxic found
Acceptance/ Rejection	Accepted
Sand	4 %
Grade 1	100 Kg.
Grade 2	112 Kg.
Grade 3	117 Kg.
Grade 4	121 Kg.
Grade 5	104 Kg.
Grade 6	101 Kg.
Remarks	Potato looks healthy.

Product Image

Step 3 : Storage or Processing

1. Pre inspection and measuring rejection
2. Repacking or processing
3. If repack than RFID and barcode
4. Decision for storage or processing
5. Message/WhatsApp/email to supplier

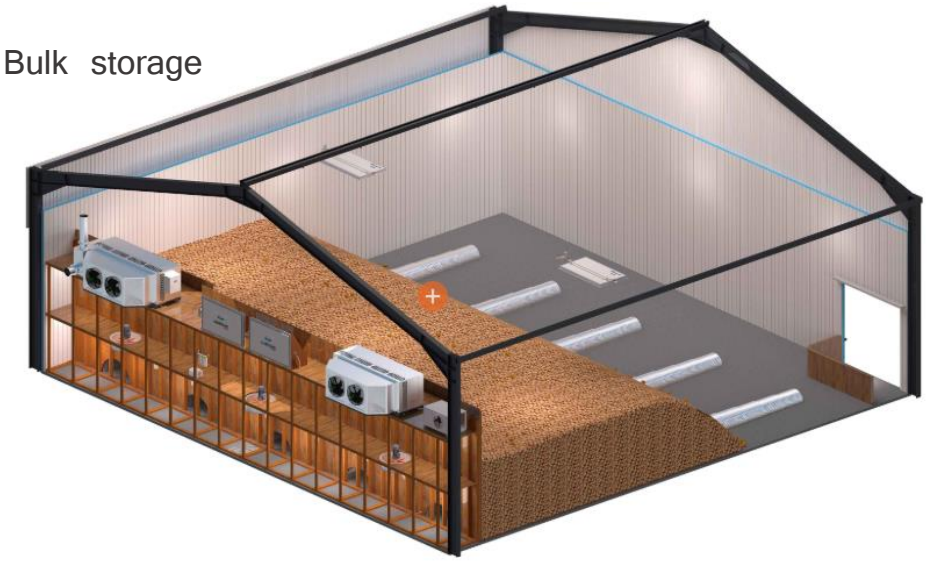
Storage

Processing line

Step 4 : Storage

1. Storage system: bulk, box or bags on rack
2. Storage report : temp., humidity,co2, opening of doors etc.
3. Weekly sampling of quality
4. Message/WhatsApp/email to supplier
5. Decision of storage or processing

Bulk storage



Box storage

For example

Storage page of SCADA system

ALLROUND
VEGETABLE PROCESSING

Storage

Home | Sampling | Lot detail | Location | Data Log | Report

Lot No.	157
Lot Detail	John, Ambala.
Lot Size	3800 Kg.
Storage Date	05/01/2019
Temperature	10
Location	Room 1, 2nd Rack
Grade	2
Product appearance	Potato looks healthy.

ALLROUND
STORAGE

Repacking for packers

1. Big bag filling
2. Box filling
3. Bag filling (50-25 kg)

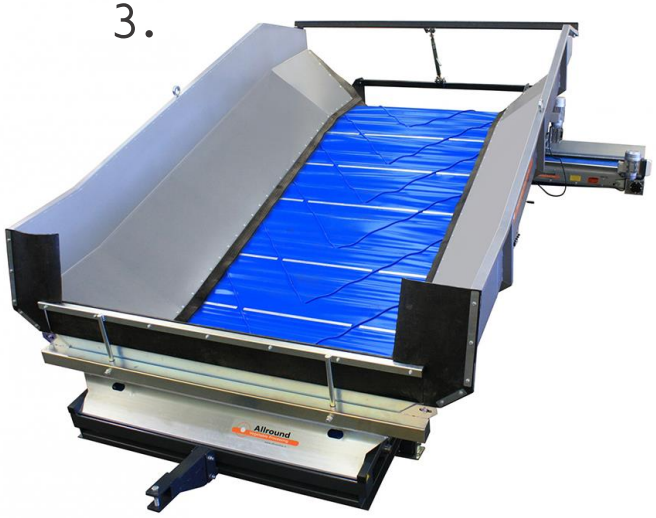
1.

Weighing platform

2.

Weighing platform

3.

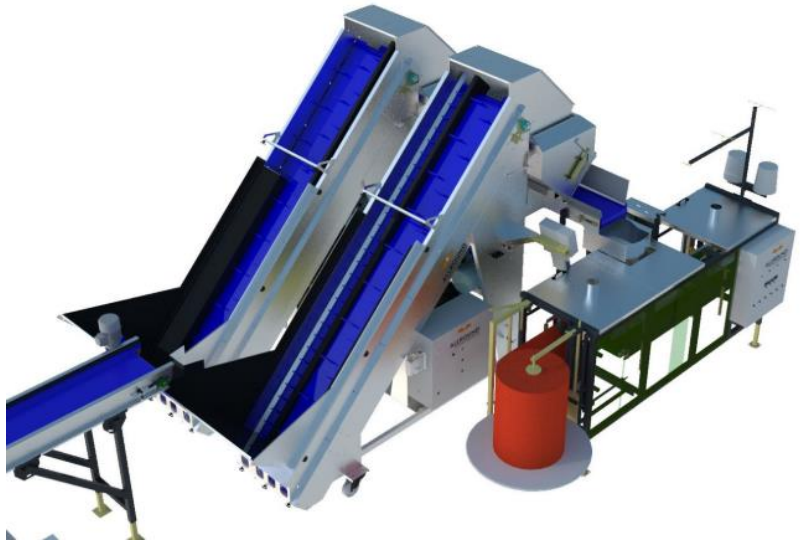


Processing

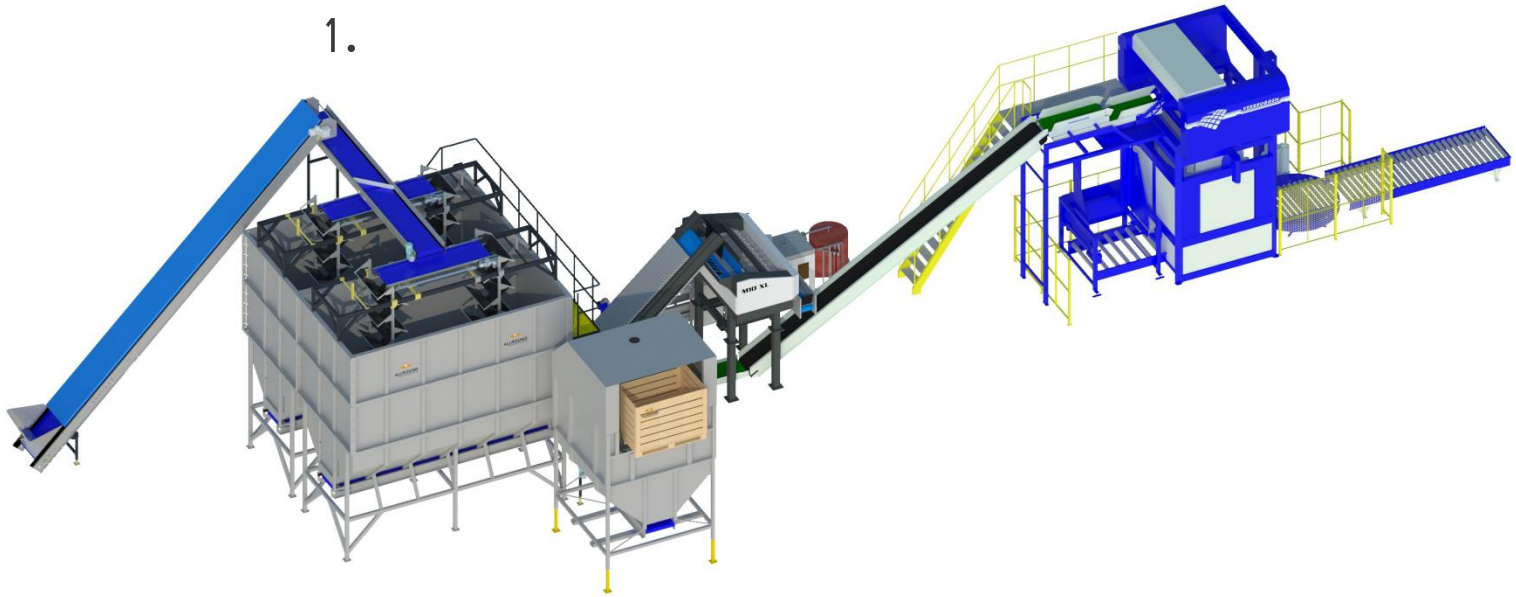
1. Weighing of unprocessed box
2. Weighing waste from cleaning set.
3. Weighing soil etc from brushing machine
4. Weighing total and useful second quality meant for consumption or cattle feed
5. Real time monitoring: water, electricity and air
6. Registration no. of people on inspection table
7. Weighing of net weight of graded product & bar coding

Step 6 : Packaging

1. Retail (0.5 kg to 50 kg)
2. Repacking
3. Bulk: tipper or cubic boxes
4. 10 to 50 kg bags
5. Carton or crates (Repacking TOSCA)



1.



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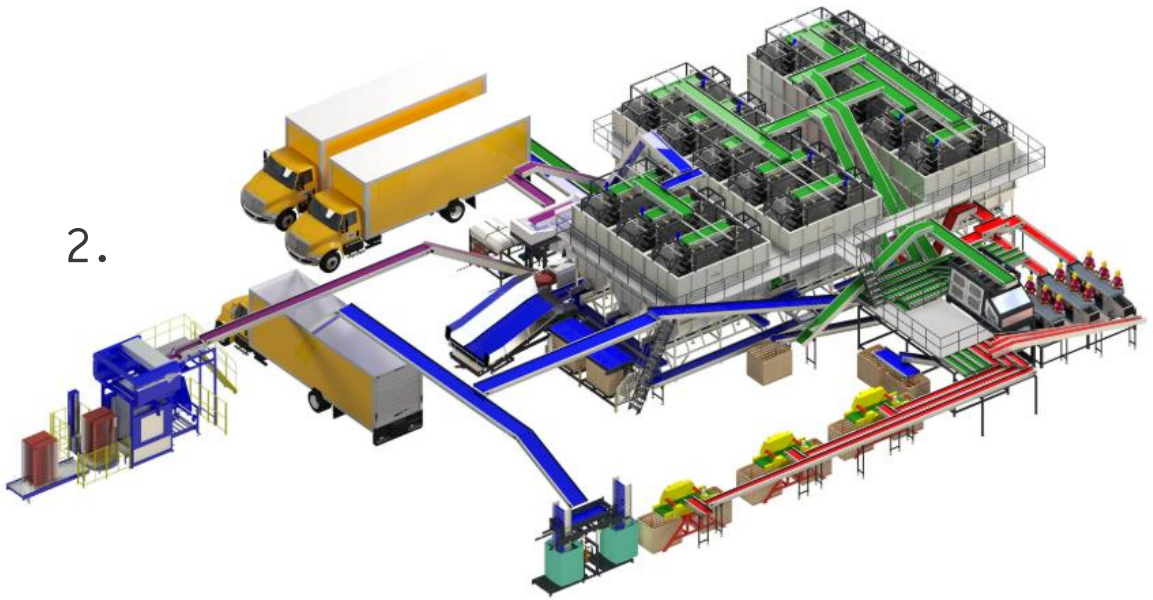
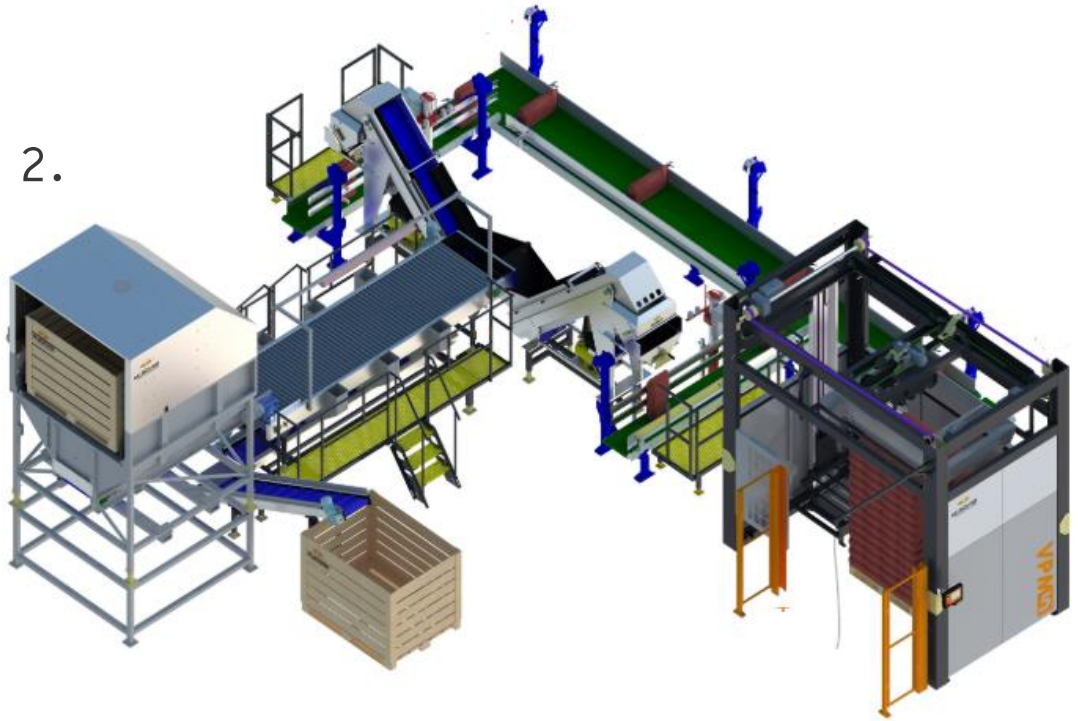


Step 7 : Palletizing

1. Manual palletizing of bags
2. Automatic palletizing of bags
3. Palletizing of carton or crates

2.



Automatic identification

1. Track and trace
2. Barcode
3. RFID （chip）
   （Radio frequency identification）

Barcode

RFID

Receiving of product to processing line

1. Weighing platform
2. RFID / Chip reader and writer
3. Weighing indicator
4. RFID tag （chip）
5. Barcode

1. Weighing Platform

2. RFID reader/writer

3. Weighing Indicator

4. RFID tag （chip）

5. Barcode

Soil extraction

1. Supervision : CCTV to see product flow .

2. Automatic speed increase decrease : Receiving Hopper speed automatic increase decrease according to product flow sensor.

3. Weight of soil : Measure weight of soil .

1. CCTV camera 

2. Product sensor 

3. Weighing indicat 

Water bassin

1. Infeed fresh water

1.1 Sensors for: mud, sand, chemicals

2. Water from bassin to washing line

2.1 Sensors for: mud, sand, chemicals

3. Water from washing line to basin

3.1 Sensors for: mud, sand, chemicals

4. Overflow

5. Overflow from basin to basin （UV light

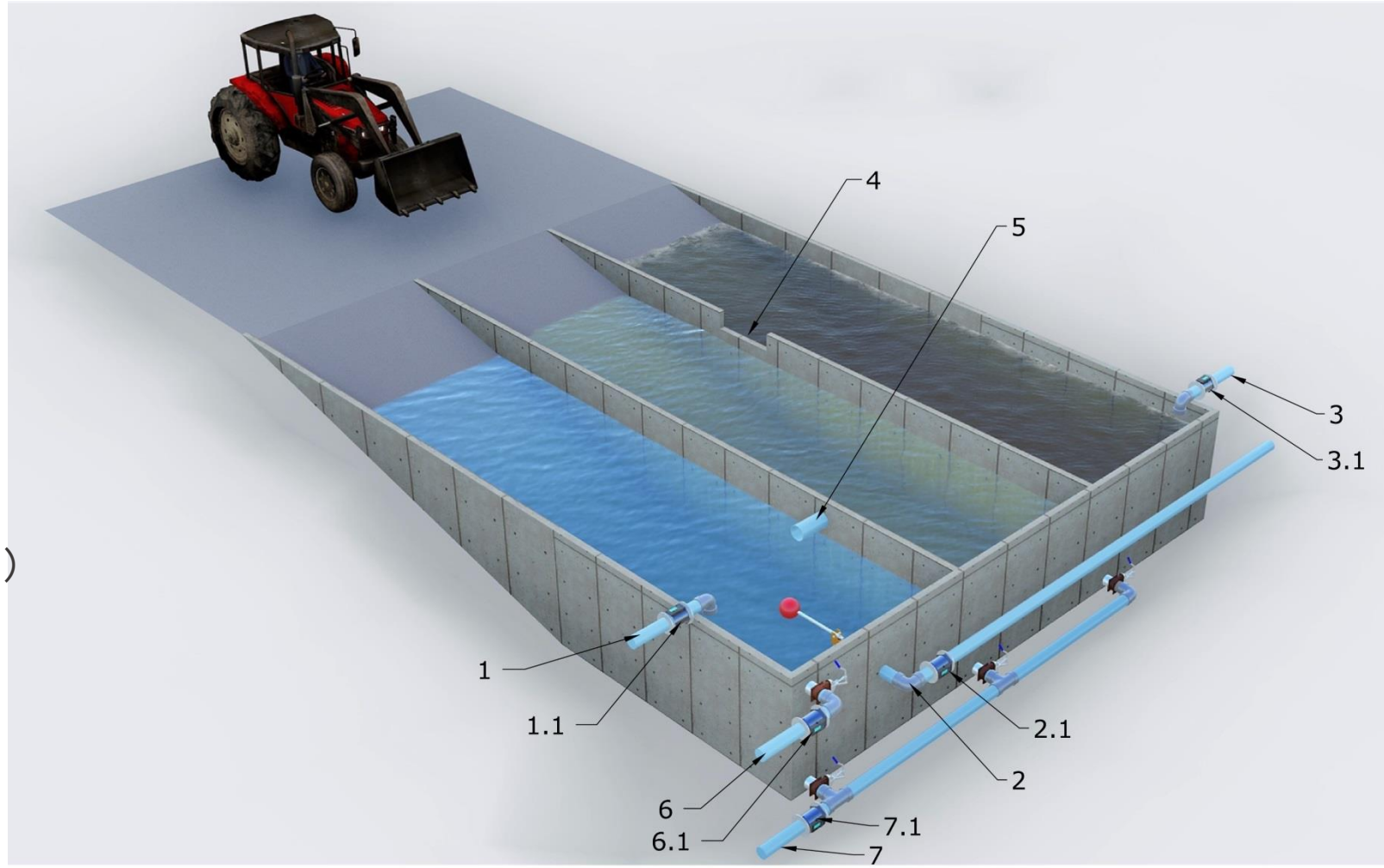
killing bacterial, Filter for particles）

6. Outfeed water from basin to drain

6.1 Sensors for: mud, sand, chemicals

7. Outfeed to empty basin

7.1 Sensors for: mud, sand, chemicals



Water analysis of washing machine U-450

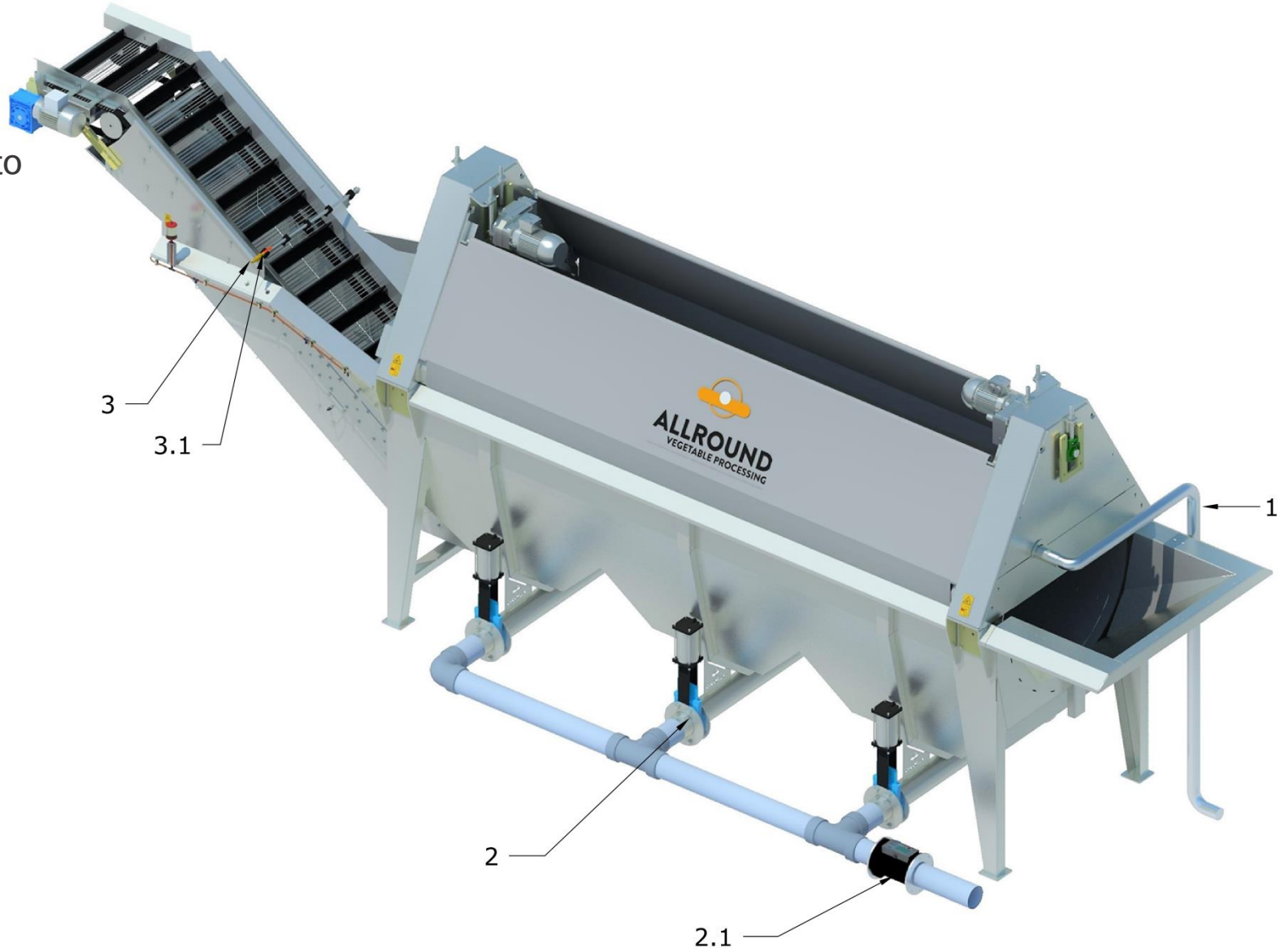
1. Infeed water washing machine from basin

2. Outfeed water from washing machine to basin

2.1 Sensors for: mud, sand, chemicals

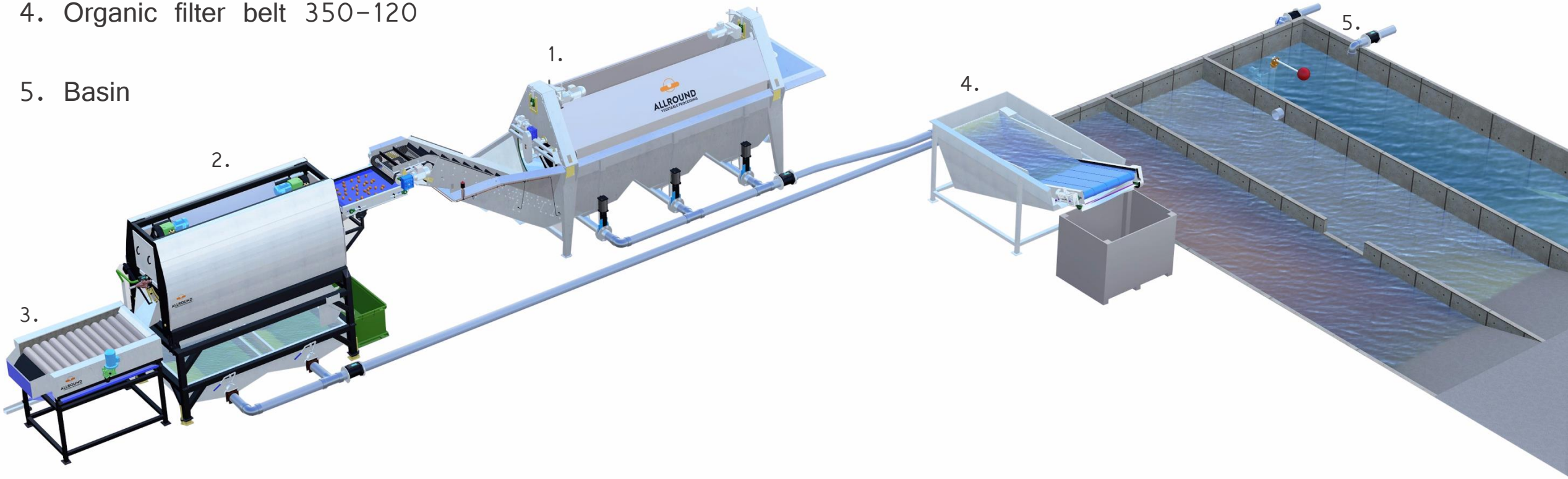
3. Fresh water spray nozzles

3.1 Sensors for: mud, sand, chemicals



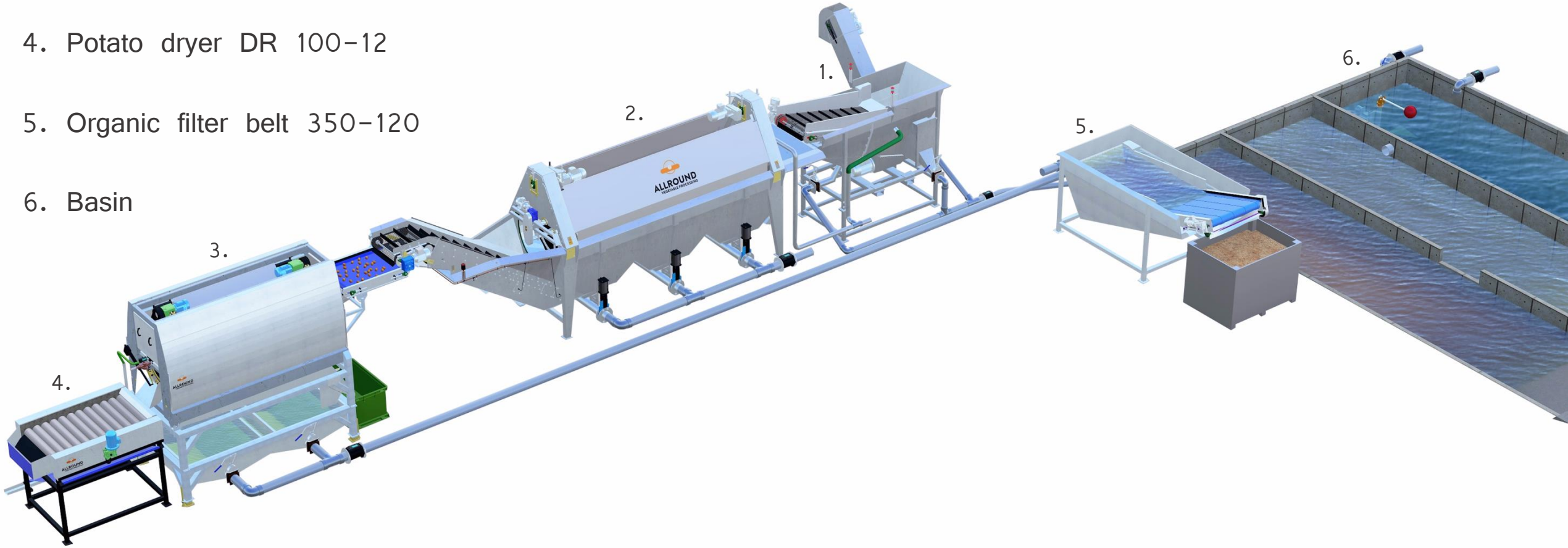
Water Analysis of Washer + Polisher

1. Washing machine U-450
2. Polisher TD 300-14
3. Potato dryer DR 100-12
4. Organic filter belt 350-120
5. Basin



Water Analysis of Washer + Polisher + Destoner

1. Destoner D150
2. Washing machine U-450
3. Polisher TD 300-14
4. Potato dryer DR 100-12
5. Organic filter belt 350-120
6. Basin

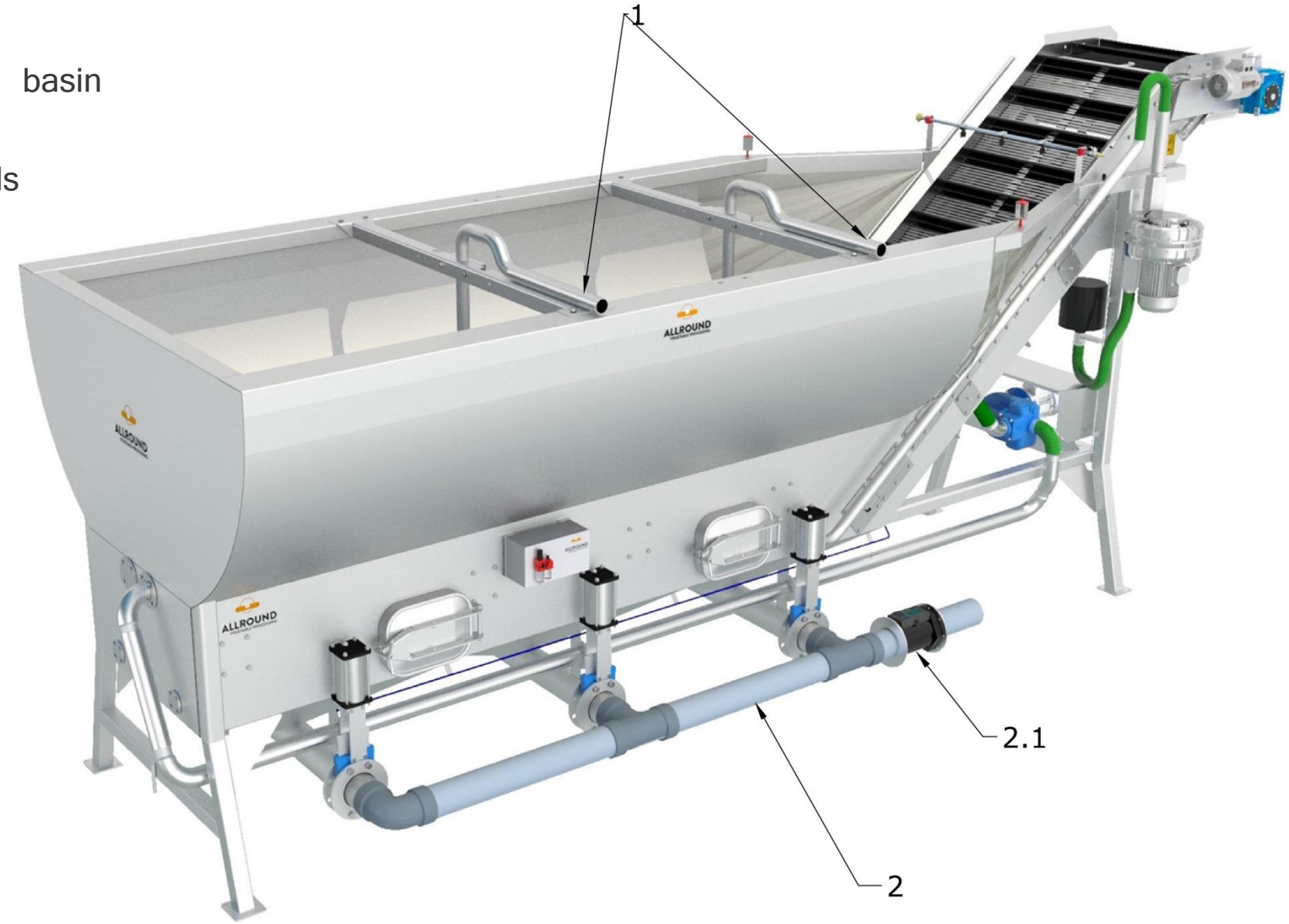


Water Analysis of Wet Hopper J 4T

1. Infeed water Wet hopper from basin

2. Outfeed water from Wet hopper to basin

2.1 Sensors for: mud, sand, chemicals

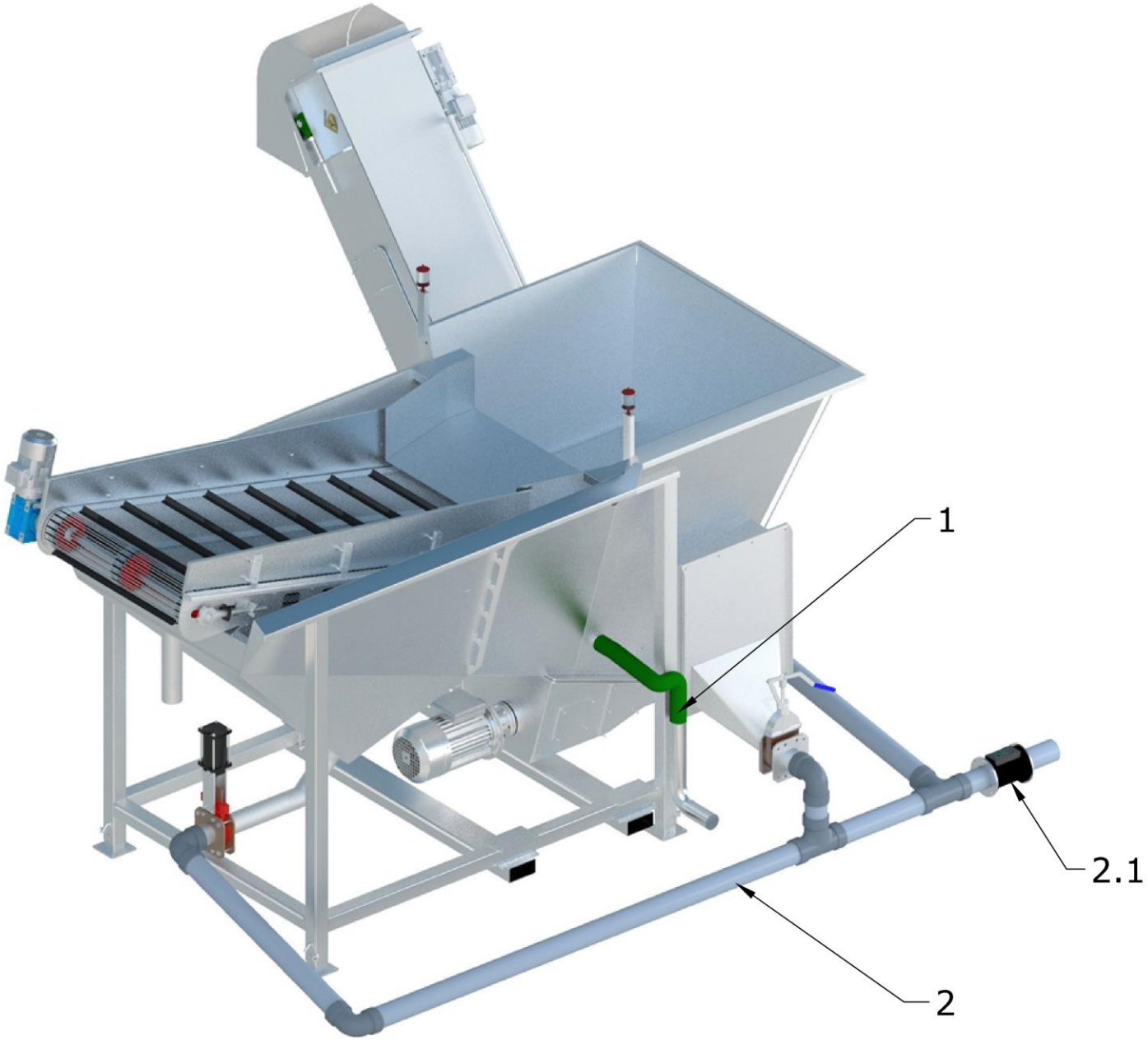


Water Analysis of Destoner D 150

1. Infeed water Destoner from basin

2. Outfeed water from Destoner to basin

2.1 Sensors for: mud, sand, chemicals



Water Analysis of Polisher TD 300-14

1. Measuring infeed fresh water
2. Measuring outfeed water
3. Sleeve bowl

ALLROUND onion topper A3

1. Weight of waste product

2. RFID tag (chip): It contair information of weight of wa product

3. Weighing indicator

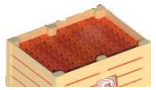
1. Waste product 

2. RFID chip 

3. Weighing indica 

Chunk grader L 150-2

1. Weight of 2nd quality product
2. RFID tag
3. RFID reader/writer
4. Weight indicator

1. 2nd quality prod 
2. RFID tag (chip 
3. RFID reader / writer 

4. Weighing indica 

Manual inspection RI 100-400

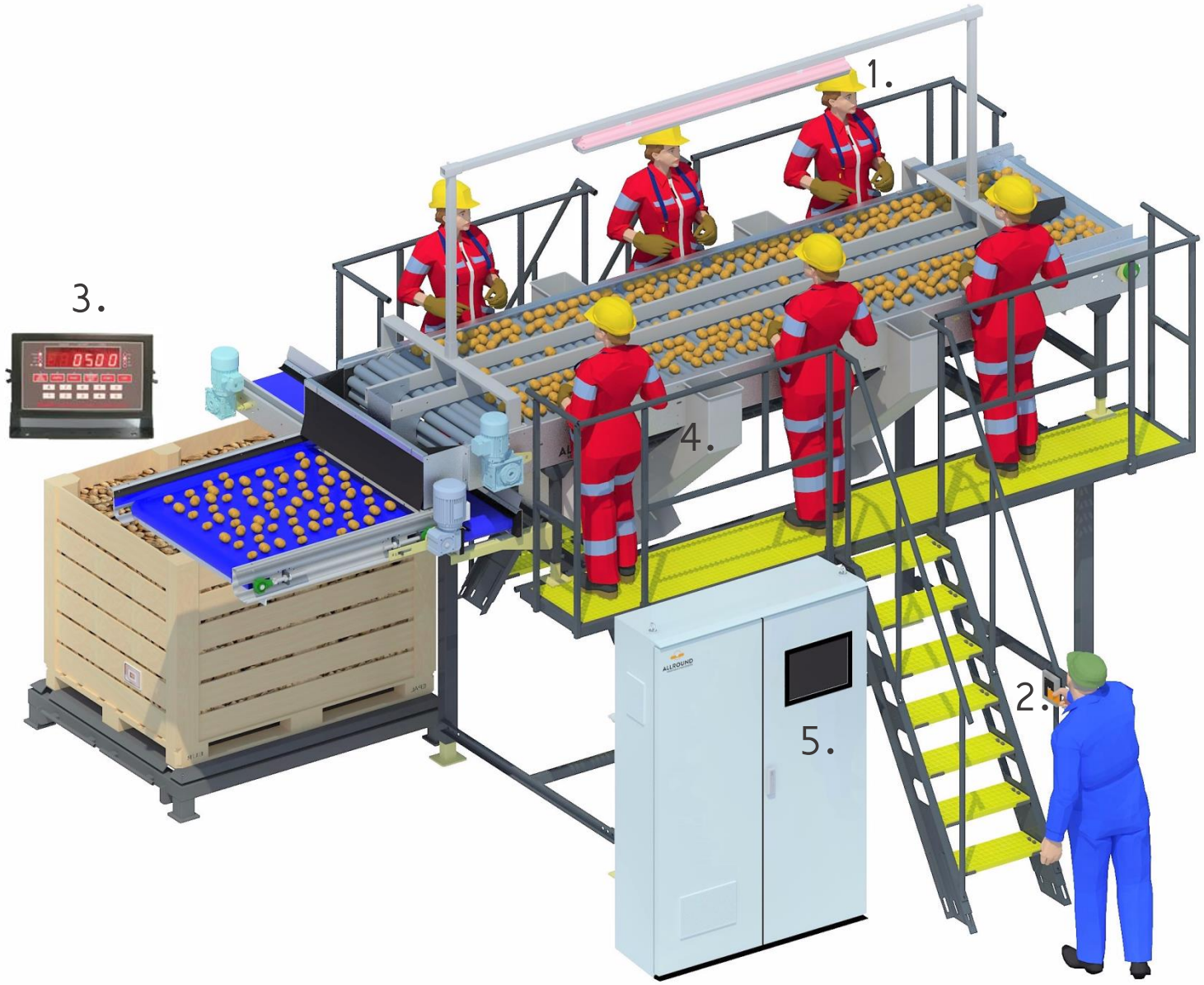
1. Number of people on inspection table .

2. Detail of Log in and Log out :
   Registration with RFID key (batch)
   in and out time .

3. Weight of 2nd quality product

4. Weight of waste

5. Main panel:- Complete line supervision and control (by display).



Radial grading machine R 120-70-3

1. Weighing each grade

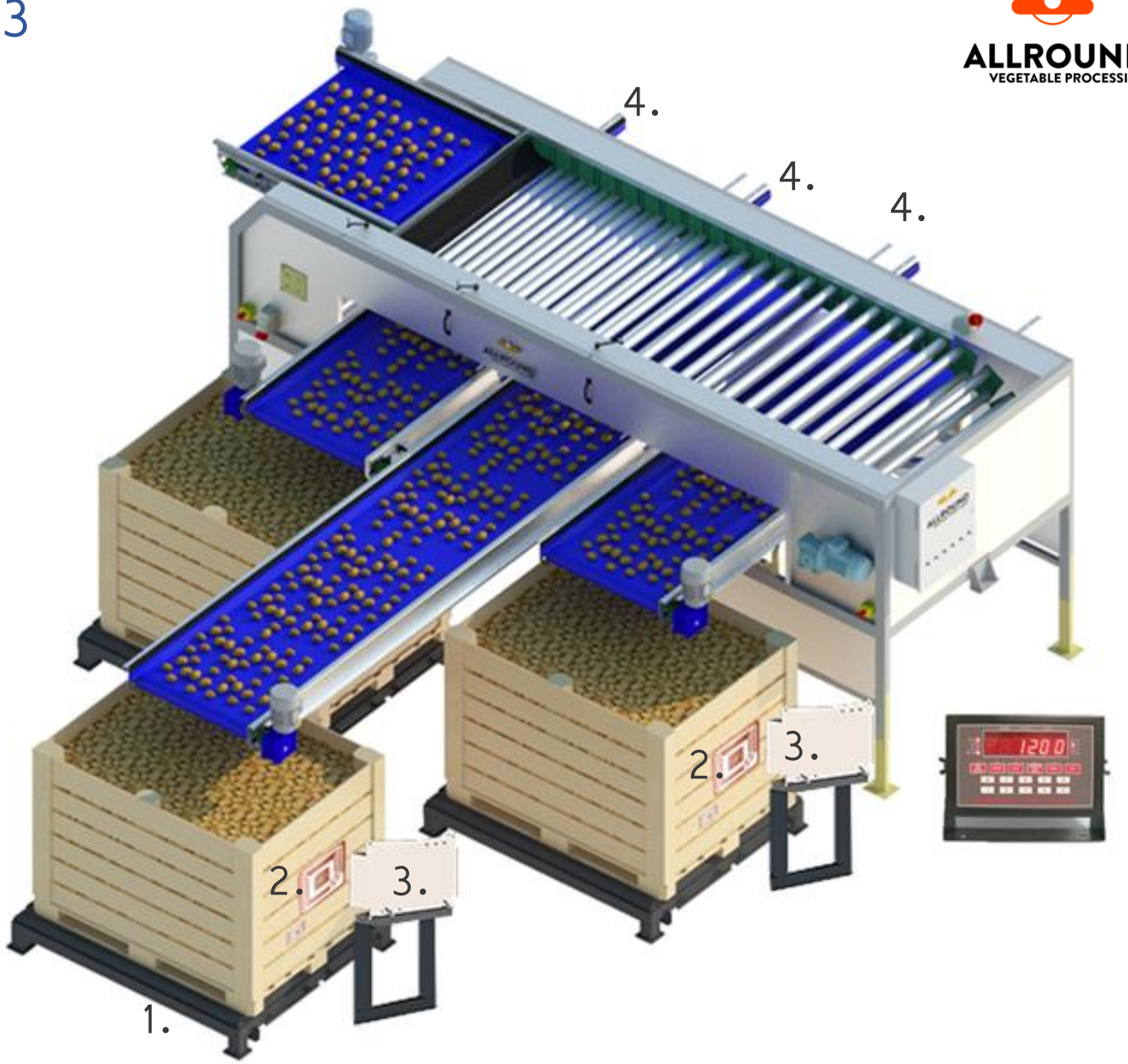
2. RFID : Each graded product weight detail is in RFID Tag (chip).

3. RFID reader / writer

4. Setting for size

5. Report : Report is generated to main panel which contains

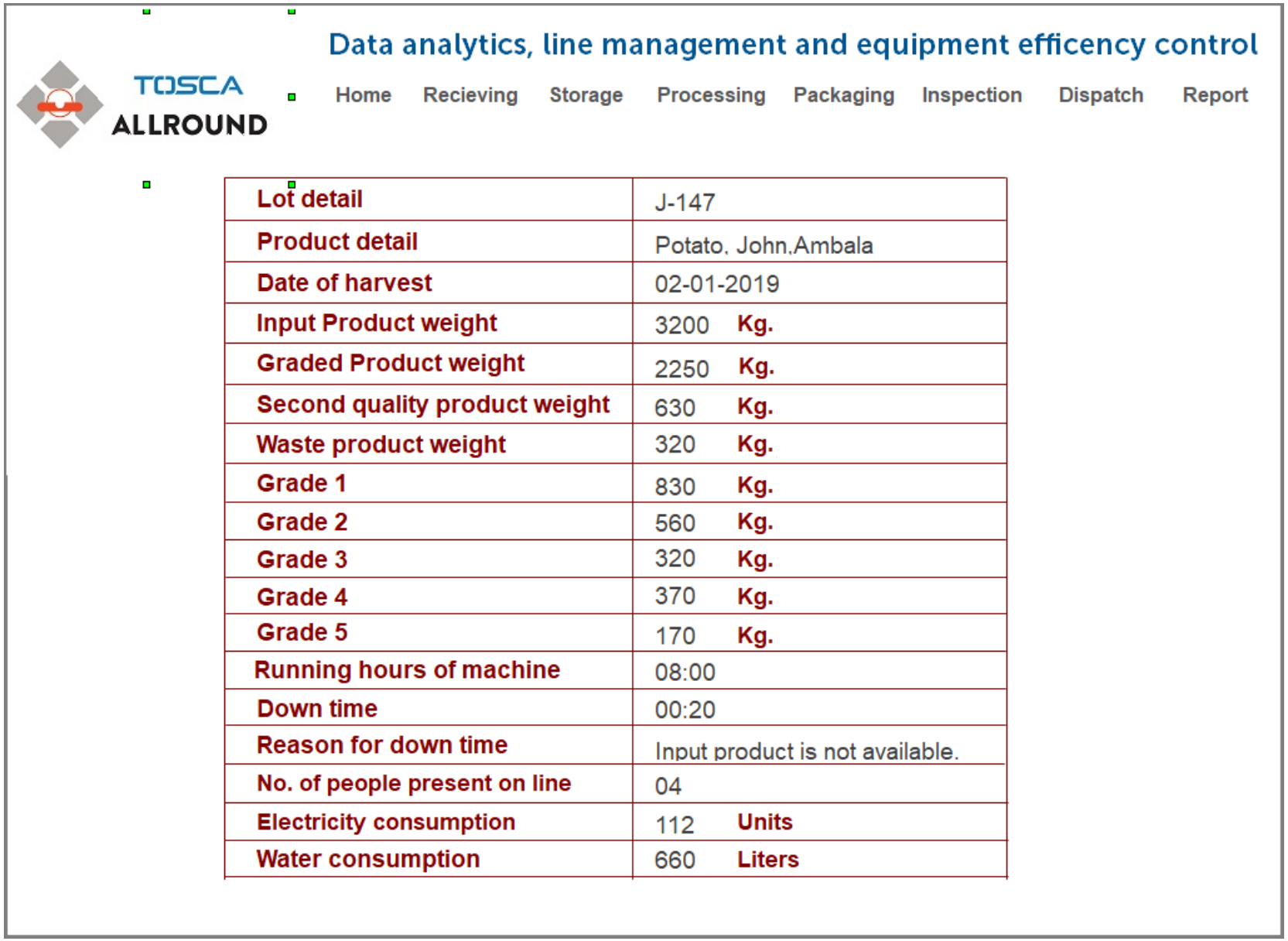
- Product input
- Final product data
- Running Hours
- Down time with reason.



For example

ALLROUND
VEGETABLE PROCESSING

Data analyt



TOSCA
ALLROUND

Data analytics, line management and equipment efficency control

Home | Recieving | Storage | Processing | Packaging | Inspection | Dispatch | Report

Lot detail	J-147
Product detail	Potato, John,Ambala
Date of harvest	02-01-2019
Input Product weight	3200 **Kg.**
Graded Product weight	2250 **Kg.**
Second quality product weight	630 **Kg.**
Waste product weight	320 **Kg.**
Grade 1	830 **Kg.**
Grade 2	560 **Kg.**
Grade 3	320 **Kg.**
Grade 4	370 **Kg.**
Grade 5	170 **Kg.**
Running hours of machine	08:00
Down time	00:20
Reason for down time	Input product is not available.
No. of people present on line	04
Electricity consumption	112 **Units**
Water consumption	660 **Liters**