Peeling without
Waste Water

What is the meaning of

"Peeling without water and waste water"

(on mechanical peeling machines)

for in-plant practice?

It is not very long ago that the mechanical peeling of tubers and root vegetables was done with the addition of much water. This water washed away the skins, cleaned the peeling tools and cleared the peeled fruit of all particles which had come off during the peeling process and were still sticking to them.

Even if the water was recirculated (which was contestable by hygienic reasons), large quantities of water were heavily affected.

In fact the waste peel was regularly washed out by the water added during the peeling process! Of course, it was possible to remove much of the remaining solid matter, up to a certain size, from the waste water, e. g. by means of separators. Which was left behind, however, was the heavily affected peeling water with the particles dissolved in the water and with many other types of tiny particles.

As far as we know the market it was DORNOW, years ago and as the first company worldwide, who put the first mechanical peeling machines on the market that could be operated without water: continuously working carborundum roller peeling machines, carborundum batch peelers (carborundum peeling = abrasion peeling), blade batch peelers as well as a series of automatically working blade peeling lines.

If we speak in terms of "peeling without water and waste water", it means that peeling on the mentioned machinery can really be done without water! The skins are collected - without being washed out - and fed, for instance, into a pump or a container. The peeling waste consists totally of particles from the tubers or root vegetables!

There is, however, a small quantity of tiny fruit particles still sticking to the peeled fruit, due to the fact that they are peeled without water addition, which have an adverse effect in most of the production procedures and must, therefore, be removed.

Compared with the waste peel already removed without the addition of water (see above), the quantity of these hardly visible tiny fruit particles (e. g. in the form of starch slime) accounts, on estimate, for not more than 0.2% of the weight of the raw material, most probably less than that. As it is a matter of very small quantities, there is no scientific treatise available. Maybe there will never be any research referring to that because of the irrelevance of the subject.

What remains, however, as far as water consumption is concerned in the peeling **lines** designed by DORNOW is the water for cleaning and the container.

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In most of the production lines there are, anyway, containers with water serving as intermediate storage facilities and/or as dosing devices.

In many cases DORNOW also uses such a container, which is anyway indispensable for intermediate storage (buffer storage) and as dosing device for the connected machines, as a washing station for the "dry"-peeled fruit.

Whenever a dry-peeled tuber or root or similar fruit drop into the water of the container, they will be cleared of the particles sticking to them, i. e. they will be "clean".

In the course of a longer production process the number of particles in the container will increase. DORNOW offers a variety of solutions for the removal of most of these waste particles, whether they are floating or heavier than water.

In the place of the container one can also think of using a short washing drum in which atomised water is generated. As a rule, very small quantities of water are sufficient to remove the adherent particles. In many cases one can also work with recirculated water. Here, too, DORNOW is able to offer solutions to cope with most of the floating or sinking waste particles.

There is a simple and often practicable solution: on the last meter of the three-meter long peeling rollers you can generate atomised water to rinse the fruit before leaving the peeling machine. The addition of such a small quantity of water does not necessarily mean waste water! The water can be added to the peeling waste that might serve e. g. for fodder.

As far as the DORNOW batch peelers are concerned, i. e. both blade peelers and carborundum peeling machines (peeling by abrasion), you may - if you do not want to carry out the cleaning of the dry-peeled potatoes or similar fruit in a container or in a drum (see above) - add some water during the last few seconds of the peeling process and controlled by means of a timer, in order to get the potatoes etc. cleaned. This does not necessarily produce waste water! The small quantity of water can normally be added to the peeling waste and removed together with it.

Note: Some few types of peeling machines offered by us cannot work without water/waste water.

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A list of interesting articles and essays regarding the topics of the preparation and processing of tubers and vegetables and associated specialist areas can be found at our Internet site at www.dornow.de, Treatises.

Review of your current peeling results or before the purchase of a peeling machine or system:

Realistic test peelings with the most diverse peeling systems, with the most diverse tubers and root vegetables, some fruit, with your raw produce are possible in our Peeling Test Center!

For more information: www.dornow.de

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