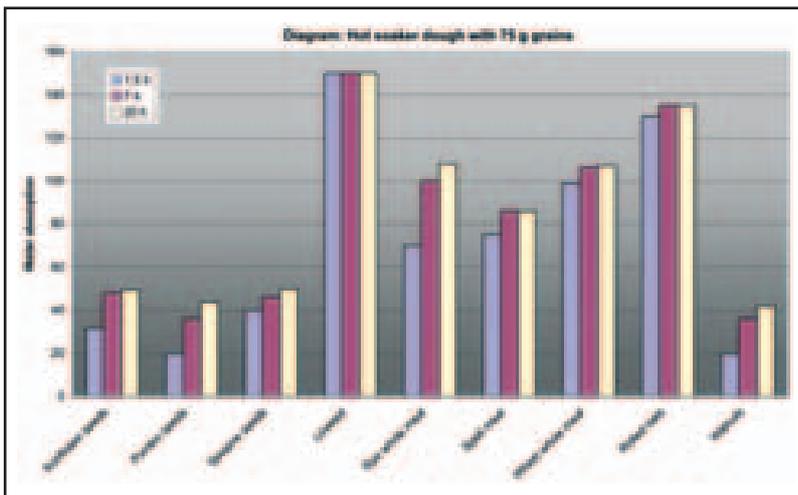
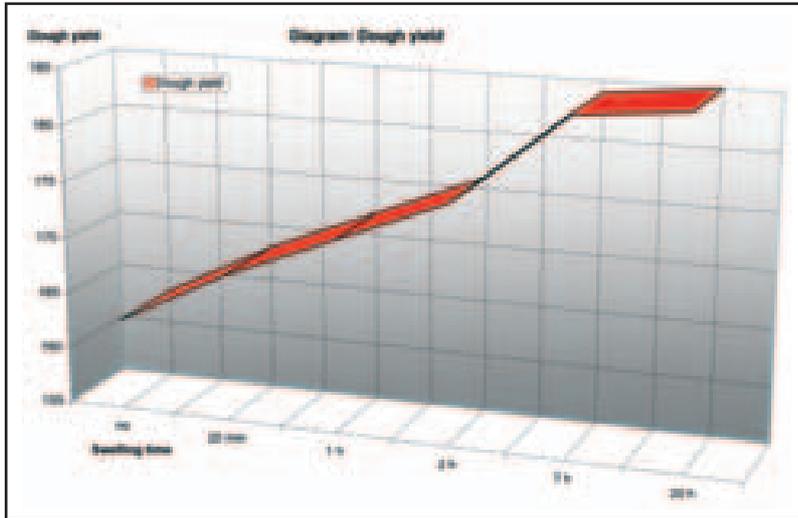




# The art of swelling

“QUELLCONDRELL” IS A NEW DEVELOPMENT TO ENSURE PROPER SWELLING OF SEEDS OR GROAT



**+** A rule of thumb is: seven hour swelling time will yield 15% more water in seeds and groat. To take advantage of this process individually for each recipe, Dirk Ernst, food technician and master baker, in cooperation with special equipment manufacturer Dojat-e-c GmbH, Dusslingen, Germany, developed the “Quellcondrell”. Most bakeries calculate one or two hours as average time needed for the pre-swelling of seeds or groat. This is an easy way to throw money away, because 75 g sunflower seeds soaked in 20 °C warm water absorb 31.5 g water in 1.5 hours. The same seeds pick up 48 g water in 7 hours and after 20 hours soaking, their weight has increased by 49.5 g. Roasted pumpkin seeds increase their water pick-up from 20 g in 1.5 h to 36 g in 7 h to 44 in 20 h. Whole rye meal also binds a lot more water if the bakers give it more time than in the common rapid process. Even ready-to-use whole grain mixes from the supplying industry display a similar thirst as Dirk Ernst found out in his trials.

The optimum swelling time for almost all seeds, kernels, and groat is about seven hours. After that time, the hard kernels not only became softer, but the linkage between the product and the gluten will yield clear increases in volume, a more juicy crumb structure and a more appetizing crumb color. Adding to that,

## Swelling test, absorbed water in gram (75 g product + 150 g water)

Product	after 1.5 h	after 1.5 h	after 7 h	after 7 h	after 20 h	after 20 h
	20 °C water	50 °C water	20 °C water	50 °C water	20 °C water	50 °C water
Sunflower seeds	31.5	34.5	48	49	49.5	50
Pumpkin seeds, roasted	20	28	36	40	44	47
Sesame seeds	40	50	46	52	50	52
Linseed	150	150	150	150	150	150
Whole rye meal	70	76	100	106	108	108
Spelt groat	75	79	86	96	86	96
Whole wheat meal	99		106		107	
Oat meal	130		135		135	
Walnuts	20		36		42	

the dough is much drier due to the more stable water binding and thus easier to process with machines. Contrary to the popular opinion, the optimum cannot be reached earlier when using hotter water. It is true that with a higher water temperature the swelling process will have a better start, but the effect decelerates quickly. Hot soaker doughs will need about seven hours to reach the peak of their water absorption capacity. More time than seven hours yield only very little increases for all types of seeds and grains.

In practice the problem in most bakeries is the space requirement. When producing a soaker dough for each batch, then a lot of different containers need to be filled, stored and made available at the right time. Add to that the time requirement of seven hours and the problem becomes very obvious. This is the reason why soaker doughs are only randomly and not very differentiated used today.

This does not have to be so, at least not, if you ask Dirk Ernst who develop the idea, had it patented and found Dojatec company to implement the idea. The idea, that is a small, paternoster-type elevator mounted to the wall of the bakery and thus not requiring too much space. The paternoster system accommodates containers in which the seeds and groat can soak. The containers are hygienically handled and stored for the required time so that the soaker dough intended for a specific recipe is available at the right time in optimum quality.

Gianni Dore and Jaro Janecek, both managing directors at Dojatec, agree: "Up to now the preparation of soaker doughs could not be precisely controlled and needed too much space in the bakery. Now this preparation is easy to monitor and hygienic in handling. No water absorption is given away and the reasonable organization of the processes allows to prepare a much broader soaker dough spectrum and provide the individual doughs at optimal time."

Dirk Ernst gave his idea the name "Quellcondrell". Up to now it can only be seen on the drawing board or on the computer screen via CAT software. It is planned that Dojatec – being a manufacturer of specialized machines – will build the Quellcondrell tailor-made for each bakery size and any requirement in terms of dimensions and degree of automation.

IBA 2006: Hall A4 – Stand 438 +++

# VULGANUS

S P I R A L S

## Clearly the best choice

### ARCTICLINE

- for rapid cooling or freezing
- up to 14 days of continuous production

### TROPICLINE

- for controlled proofing
- revolutionary humidifying technology

### CLEANLINE

- for clean air cooling with extreme hygiene
- extremely long shelf life for products without preservatives

### SOFTLINE

- for natural cooling
- cost-effective, space-saving solution

### STERILINE

- for improved hygiene
- reliable washing results throughout the spiral system



A5-413

Vulganus Oy, Varikontie 2, FI-15550 Nastola, Finland  
tel. +358 (0)3 873 750, fax +358 (0)3 873 7550, vulganus@vulganus.fi  
[www.vulganus.fi](http://www.vulganus.fi)