

Franco Luise

Cook Chill Regenerate

Food Management for the XXI Century

BIBLIOTHECA CULINARIA



Professional



PREFACE	7
HOT, COLD, HOT the misunderstood blast chiller	
INTRODUCTION	11
CCR: The Protagonists	
CHAPTER 1	15
Show me the way	
CHAPTER 2	39
C as in COOK	
CHAPTER 3	95
C as in CHILL	
CHAPTER 4	109
HOT HOLDING	
Temperature maintenance of cooked food	
CHAPTER 5	115
R as in REGENERATE	
CHAPTER 6	135
CCR: Does it make a real difference?	
CHAPTER 7	141
NOT JUST HO.RE.CA	
A look at other points of sale	
CHAPTER 8	155
BETTER THAN BEFORE!	
A menu from my archive revisited with CCR applications and new technology	
CHAPTER 9	171
BLAST CHILLING AND HACCP:	
Multiple regulations and conflicting directives	
CONCLUSION	181
The future is already happening	
RECIPE INDEX	187
INDEX	189

Advantages of vertical cooking in combi ovens:

ENERGY EFFICIENCY	Briefer overall cooking times Possibility of cooking at lower, gentler temperatures Optimization of oven volume with full loads Shorter preheating times
HUMAN RESOURCES EFFICIENCY	Less food manipulation during cooking Rationalization of kitchen traffic patterns Automated cooking programs free personnel for other tasks Versatility: contemporary cooking of different foods
SAVINGS ON ACQUISITIONS & RESOURCES	Reduced use of fats and seasonings Reduced weight loss of cooked foods Reduced water use
IMPROVED ORGANOLEPTIC QUALITIES	Greater nutrient conservation Improved texture due to possibility of combining moist and dry heat Improved appearance due to more uniform cooking Improved overall taste, color, consistency

Not only in sous vide:

low temperature cooking

At this point, a brief digression is in order: the CCR system should not be considered useful only to those cooking sous vide (there are, as we’ve seen, other low temperature cooking techniques). Sous vide cooking is done at temperatures ranging from 45 to 85-90 °C (113 to185-194 °F), but it is not the only technique to exploit the benefits of these gentler temperatures. For example, my grandmother made a marvelous braised goose on a wood burning-stove with the coals banked for the night.The casserole was positioned strategically and left alone. The following day the goose was tender and quite moist as its connective tissue had literally melted.





Serves 4

4 goose legs
1 kg goose fat or 1 liter extra virgin olive oil (The choice of fat will strongly influence the results. Goose fat will make for a more unctuous dish, but with a fuller, rounded flavor. The olive oil will make the dish more easily digestible; its light acidity will affect the taste even though the temperature will never rise to the levels that would make it smoke.)

1 sprig of thyme
1 sprig of sage
1 sprig of rosemary
4 cloves of garlic
5 g crushed black peppercorns
5 juniper berries
10 g dried mushrooms softened in warm water and drained
Fleur de sel

Truffled potato foam:
225 g potatoes, boiled and mashed while still quite hot
125 ml cooking water from the potatoes
20 ml extra virgin olive oil
3-4 ml truffle infused oil
Salt, pepper
2 N₂O cartridges + siphon

Using the temperature of 100 °C (212 °F) as an upper limit, we can safely define cooking done below this level as low temperature cooking. The technique characterized by long, slow low-temperature cooking of food immersed in fat (lard, goose fat, olive oil, etc.) is properly termed *in confit*.

Illustrative recipe 9

Goose legs in confit on truffled potato foam

Low temperature cooking

Arrange the goose legs in a deep casserole and completely cover them with rendered fat or olive oil. Add the chopped herbs, garlic cloves, peppercorns, juniper berries and mushrooms.

Program the combi oven to convection mode, valve open. Temperature: 80 °C (176 °F)

Cooking time: 8 hours

If possible, lower the fan speed to save energy.

Place the goose in the oven and begin cooking.

Truffled potato foam

Combine the ingredients in a bowl and blend well. Pass through a fine sieve and transfer to a siphon. Load with two N₂O cartridges and maintain at 70 °C (158 °F).

When the goose is finished cooking, remove it from the fat and let it drain on a grill. Heat a little of the cooking fat in a sauté pan and brown the goose legs over a lively flame until crisp. Serve on a bed of potato foam.

Seafood cooked in confit may also be served hot though such preparations should be added to a menu with foresight so as not to overly complicate service. If present, service must be prompt. It is simpler to employ seafood cooked in this manner in salads and cold dishes. Given the low temperatures essential to the correct execution of the confit technique, only the freshest seafood (preventively blast chilled) may be used. Once cooked it may be kept for 2 to 3 days at most in the refrigerator at +2 °C (35.6 °F).

The latest model combi ovens include default programs for low temperature cooking. These are often indicated as “overnight” settings given their duration. These programs are not static but include several phases:

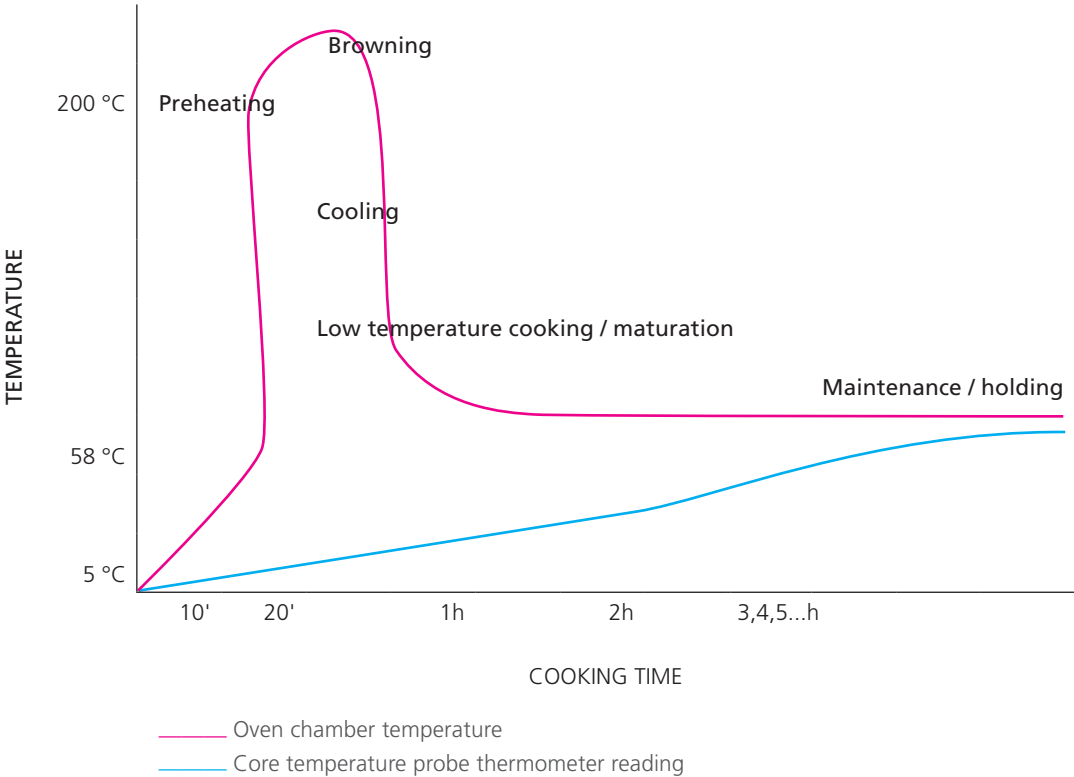
1. **PREHEATING** of the oven to the optimum temperature for browning.
2. **PLACEMENT** of food in the oven chamber and correct positioning the **PROBE THERMOMETER** to read the core temperature.
3. **BROWNING** at a high temperature for a time period automatically determined by the oven program or manually selected by the user based on the conformation and/or weight of the product to be cooked.
4. **COOLING** of the oven chamber to the optimal cooking temperature. This is based on a correct rapport between the oven chamber temperature and that at the core of the product (as detected by the probe thermometer) when cooking is complete. The core temperature is selected by the operator.
5. **COOKING (OR MATURATION)** at the proper temperature and humidity levels necessary for retaining moisture and guarding against weight loss. It should be noted that low temperature cooking is particularly useful for maturing meat and achieves levels of tenderness impossible with traditional cooking methods.



Preheating the oven and prechilling the blast chiller: two important tasks often overlooked in the kitchen.

Similar consistencies may be noted in meat cooked sous vide as this technique also uses low temperatures.

6. **HOLDING OR MAINTENANCE** when cooking has terminated, food may be served or blast chilled. The oven is capable of adjusting the chamber temperature so as to stabilize the core temperature. This enables food to be “held” at its service temperature for up to 24 hours. Beyond that, it tends to dry out.



Time/temperature readings for a typical “overnight” low temperature cooking cycle; meat programmed to terminate cooking with a core temperature of 58 °C (136.5 °F).



Illustrative recipe 21

Salmon over rice with lemon zabaione

CAR / on-plate cooking

Serves 10

10 boneless, skinless salmon fillets
approx. 140 g each
100 g clarified butter
Salt, freshly ground white pepper

300 g Carnaroli rice
1.5 liters fish fumet
20 g chopped shallots
150 g arugula
50 ml extra virgin olive oil
Salt, freshly ground pepper

1 egg
3 egg yolks
50 ml extra virgin olive oil
75 ml grape seed oil
2 g mustard
50 ml Prosecco
40 ml lemon juice
20 ml orange juice
Grated zest of 1 lemon
Salt, freshly ground white pepper
Pinch of sugar

Mise en place
Sauté the chopped shallots in extra virgin olive oil. Add the rice and quickly toast it then add a ladle of hot fish fumet. Cook the rice until al dente, continuing to add liquid as needed. Off heat, add the arugula; salt and pepper to taste. While still hot, divide the rice among 10 ring molds and apply negative blast chilling. Once frozen, conserve at -18 °C (0.4 °F).
Season the salmon fillets with salt and pepper and briefly sauté them in clarified butter just to give them a little color. Blast chill immediately.

Plate preparation
A few hours before service time, prepare the plates: place a still frozen rice cake in the center of each and top with a salmon fillet. Arrange the plates on a trolley and conserve in a walk-in refrigerator at 3-4 °C (37.4 – 39.2 °F) until ready to regenerate.

Regeneration (rice cake) / Cooking (salmon)
Remove the trolley from the walk in refrigerator in enough time to bring the temperature up to 10 °C (50 °F) before regenerating.
Preheat the oven to 180 °C (356 °F), convection mode
Transfer the trolley to the oven, correctly position the probe thermometer at the center of a salmon fillet and program the oven as follows:

The digital revolution has not spared the professional kitchen. Ovens and blast chillers are now equipped with touch pads and USB ports. Programmable cooking and chilling cycles eliminate the need for manual intervention on every temperature adjustment and digital probe thermometers offer a level of precision that takes the guesswork out of the concept of 'doneness'. Yet, much of this technological efficiency remains untapped as chefs fail to use their equipment to its full potential.

Cook, chill, regenerate (CCR): the cycle described by these three simple words is made possible by that same underused technology. While associated with sous vide and low temperature cooking, its implementation is not limited to these applications. The CCR system, explored in detail in this work, offers chefs a range of advantages and these extend beyond the restaurant kitchen. Catering operations, butcher shops, bakeries and delicatessens can all benefit from the CCR system.

With practical examples drawn from direct kitchen experience, a wide range of recipes and a wealth of technical data, Franco Luise demonstrates the many ways in which the CCR system and the technology that enables it are every chef's strongest allies. From improving organoleptic qualities to saving time, from reducing waste to saving money, the CCR cycle is no longer simply an alternative to traditional cooking methods. It represents the key a level of efficiency that is a prerequisite for success in modern food service operations.

€ 48,00

ISBN 978 88 97932 49 9



9 788897 932499