

6 ways to avoid WOF in pork:

1. Use light meat
2. Enhance with antioxidants
3. Cook gently
4. Avoid oxygen
5. Store with sauce/mash
6. Store cold for a short time



Project partners



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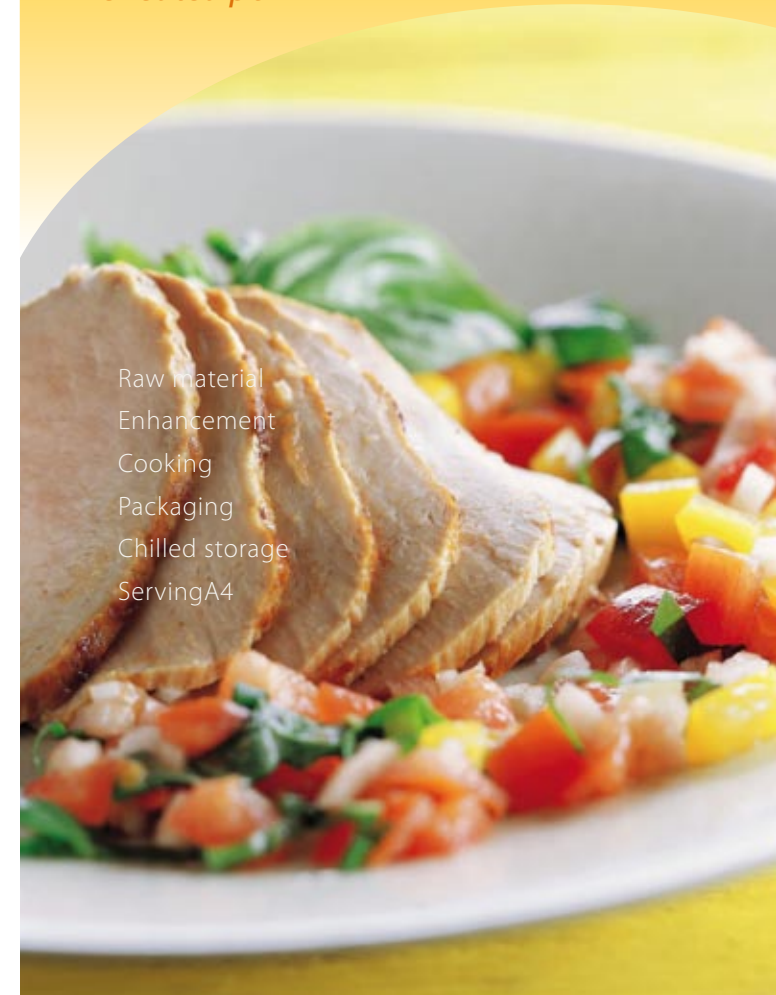
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WOF

Minimising warmed-over flavour in reheated pork



Raw material
Enhancement
Cooking
Packaging
Chilled storage
Serving A4



Avoid warmed-over flavour in reheated pork

The production of meals in catering establishments is based on the cook & chill method: the food is prepared, chilled, packed and stored cold to be reheated just before serving.

Why WOF?

Warmed-over flavour (WOF) is an unfortunate side effect of the cook & chill method. However, it can be reduced by taking a few simple precautionary steps.

What is WOF?

WOF develops in meat that is stored cold after cooking and then reheated. Heat treatment is one of the main reasons for the development of WOF; the structure of the meat is changed, allowing oxygen from the air to come into contact with free iron and fat (phospholipids) in the meat.

Rule No. 1: Use light pork instead of dark pork

Dark red pork has a high colour pigment content. The darker the colour, the stronger the WOF. If, for example, you use loin, the WOF is less pronounced than for other muscles - even relatively light red muscles such as top rounds.



Rule No. 2: Enhance the meat

Enhancing the pork reduces the unpleasant WOF flavour. Injection of a brine with or without antioxidants can be used.

Natural antioxidants such as vitamins, terpenes and phenols can be found in, for example, fruit, berry skin, juice, tea and herbs.

Rule No. 3: Cook at low temperatures

Gentle cooking results in less WOF. When pork is cooked to a core temperature of 65°C instead of 80°C at a normal cooking temperature of 190°C, the WOF taste is substantially reduced. If the low core temperature is combined with low cooking temperature (95°C), the WOF taste is even less pronounced in the finished meal.

Rule No. 4: Avoid oxygen - chill for as short a time as possible

To minimise the development of WOF, the cooked pork should be packed without oxygen and should be stored cold for as short a period as possible.

Pork packed in ordinary stretch film and stored at 4°C will, within the first 48 hours, develop an increasingly strong WOF taste after reheating. A maximum is reached after 48 hours.

Sous-vide-cooked pork stored cold in sous-vide bags or packed in oxygen-free modified atmosphere (e.g. carbon dioxide and nitrogen) does not develop WOF after reheating within the first three days.

WOF can be reduced by covering the pork with sauce or vegetable mash. The effect depends on the type of mash used. For example, mashed potatoes will inhibit, but not entirely prevent, the development of WOF. However, mashed pumpkin, onion and spicy sauces have a strong inhibitory effect on WOF, though they can also affect the flavour of the meat.

