Washed-rind and Smear-ripened cheese.

These are the types of cheese in which I particularly specialise.

Most of the work published in regard to this style of cheese ripening is pretty misleading.

This is probably so because the ripening of smear and washed rind cheese is a very labour intensive and complex operation. This makes it hard for writers of technical papers, or general food journalists, to ever get close to the actual process.

First one needs to grasp a little of the background and history of these cheeses:

Although the soft, orange rind, cheeses are generally referred to as being of the washed-rind variety, the term "washed-rind" should correctly be applied to the firmer, lower moisture, alpine cheeses: Beaufort, Gruyere, Appensaller, Tomme d'Adondance, etc., and Fontina, from the Pyrenees and, although this may be seen as an exception at first sight, to the old Goudas of Holland.

"Smear-ripened" should strictly apply to the softer cheeses from the lower slopes, valleys and plains. (Not that I would be pedantic about it).

To understand this one needs to look back to the origins of the traditional cheeses.

When cheese was made in the high mountain areas transportation to the market was only viable if one could ship quantities, consequently, the mountain cheeses tend to be large lower moisture rounds with good keeping qualities.

In the more densely populated lower slopes and plains areas the market was more accessible and it was possible to sell the higher moisture, softer bodied, cheeses and attain a faster turnover.

In the mountain areas, of high humidity, washing of the rind to restrict mould growth would be a common practice. High acid, low moisture, cheese would simply develop a firm, hard, rind or crust.

The lower acid low moisture types would support and exhibit bacterial growth as well mold growths. *(Bacteria favour low acid conditions and, optimally, high moisture conditions. Moulds favour the higher acid and lower moisture conditions.)*

As you consider the different styles of cheesemaking you begin to see how the making, and the maturing conditions, will influence what happens on the cheese surface. Both the moisture content of the cheese and that of the atmosphere must be considered, along with the ph. (or acidity) of the cheese.

Cheese such as Beaufort of Haute Savoie is relatively low acid and firm and is matured under conditions of high humidity. The Gruyeres are very similar but tend to be a little more acidic and the maturing conditions a little less humid. Both will have their rinds periodically wiped or washed to restrict mould growth.

Here we see part of the explanation for the flavour differences between these very similar varieties.

The surface growth will be a mixture of both moulds and bacteria.

Beaufort will exhibit a greater surface bacterial growth than will Gruyere. If the bacteria include Brevibacterium linens we then get the background of flavour production which B.linens initiates.

(Parmesan, another relatively low acid cheese, will exhibit bacterial growth but, because the humidity of the maturing area is lower and that of the cheese also, it will not generally include B.linens. There will still be the orange/brown colour pigmentation from other bacterium but not the flavour production).

As we come further down to the more densely populated areas we come across cheese such as Reblochon: closer to the markets and of higher moisture content than the high mountain cheeses.
We still have a cheese which is influenced by the ripening styles of the Haute Savoie but, because of the eventual lower acidity, and higher moisture content, we get a higher balance of bacterial growth.

All these bacteria produce proteolitic and lipolytic enzymes so; we get a far more pronounced breakdown of the curd.

The Reblochon are still washed-rind rather than smear ripened cheese, since the main objective is to restrict surface mold growth.
However, B.linens do tend to be present in some sites and we get a slight background flavour influence from these on some farms, though this is not the deliberate intention of the traditional makers.

The Reblochon are, in cases of true traditional production, washed with pure mountain-spring water. *(We will see the importance of this later).*

Next we find the monastery cheeses such as Muenster and then, further down on the plains. Pont l'Eveque, Maroilles, Port du Salut, Trapiste de Belval etc. and across the borders, Herve and Limburger.

These are the smear-ripened cheeses.

Why do we find so many of the smear-ripened cheeses originating from the monasteries?

Contamination, is the answer. Washing the cheese with anything other than a sterile liquid is likely to introduce pathogenic bacterium such as Listeria monocytogenes.... and you kill off your customers.

The monasteries would also produce wines, beers and spirits so had available to them sterile solutions with which to wash the cheese.
These cheeses would be washed more frequently so as to deliberately encourage heavy bacterial growth and almost totally restrict mould growth.

There are around 100 strains of B. linens so there will certainly be some variation in the strains present in different maturing areas. This is what most technical papers tend to attribute the variation in rind colour to.

However: the main reason for the colour differences lies in the moisture activity and acidity differences in the actual cheese. Depending on the balance of these criteria different strains will be dominant on the surface.

The lower the acidity of the cheese the paler the colour tends to be. *(this sort of knowledge can be of tremendous assistance to the maturer, or affineur, when dealing with batches, and helps with feed-back to the producer).*

Slow cheese, which continues to exude moisture, will also tend to be pale, but in this case the surface will be fragile and slimy due to the growth of other bacteria such as Geotricum lactis *(oidium).* Drying, in the early stages, can help in this sort of situation but, because the excessive enzyme action will weaken the surface, the rind will crack during further maturing or storage if the cheese encounters low humidity conditions.

(Extracted from http://www.isleofmullcheese.co.uk/jalldridge/torpage.htm)