

Eduardo Berea, Tobacco Division Manager for Mother Murphy's Laboratories, US flavour specialists, explores flavours in tobacco with the pleasure of the consumer in mind

Delivering Sensations

When we were invited to write this article and start thinking about the content it soon became evident how challenging it was.

Tobacco flavouring is a much extended subject if we consider how wide this industry is ranging from smoke to smokeless products and all the different types in-between. Following *World Tobacco* suggestion, we agreed to concentrate the information on the cigarette industry. We do not pretend to make an exhaustive revision of the subject but rather a quick overview of actual procedures and some new concepts. Some of the information applies to other smoke products and the sensation approach we suggest applies to the whole tobacco industry.

Cigarette flavouring has been present in the industry for a long time and yet, the basic methodologies currently widely used have changed very little in the last few decades.

For traditional cigarettes where no evident flavour is present, we need to acknowledge that the main contribution of the perceived flavours comes from the tobacco itself. The blend design and the quality of the tobacco used, defines the final perception of a cigarette.

The cigarette industry is unusual in terms of the flavour application, being perhaps the only industry using flavours where background, middle and top notes are developed and even applied at different stages in the production process (casings, top dressings and top flavours).

In general, casings are designed to give the background notes to a cigarette. They will help to balance the sugars needed in a specific blend in order to obtain a smokeable product and will help to cover some defects. During the toasting process some chemical reactions take place that develop desirable flavours precursors that are perceived during the smoke. A good quality and balanced casing is of the utmost importance in the cigarette industry. Casings are water soluble and the flavour ingredients used are not very volatile. Typically, the usage level is high compared to top flavours.

On the other hand, top flavours will contribute with the middle and top notes as they are formulated with ingredients that are quite volatile. 'Tops' are alcohol or polyalcohol soluble and really help to define the seal of a product/brand.

The end experience

When developing cigarette flavours, there are several aspects to consider such as: the legislation the finished product needs to comply with; the blend itself (FC or Virginia, American Blend or modified Virginias); the product design (filter length, ventilation or dilution, paper porosity); and targeted consumer (market segment, gender, etc.) to name but a few.

When smoking a cigarette, the consumer perceives the different characteristics of the product and integrates a sensation. Customers are really looking for a sensation rather than a "flavour", and yet, flavours and new delivering techniques help to deliver the sensations our customers are looking for. Understanding what



Eduardo Berea applying flavour to tobacco leaf

sensation our customer is looking for is a must in order to develop new successful products or for improvement of the ones already in the market. When we mention sensations we are not only talking about the flavour profile of a cigarette but also the mechanics of the smoke such as harshness, dryness, amplitude or roundness and volume sensation to mention a few.

Development of flavours and functional ingredients oriented to modify or improve the mechanics of the smoke is better accomplished by understanding the sensation we want our customer to experience. At the same time this approach allows us to keep the design as simple and "clean" as possible. The customers are ready and eager for new concepts.

We already talked briefly about the "traditional" flavouring techniques but we also need to consider other flavour delivery systems or techniques. These include different alternatives using the filter for flavour delivery either in a liquid concentrated form or using inclusions which can be developed at an affordable cost. Using the filter has the great advantage that the flavour is perceived without the need of burning it and with no chemical changes due to heat.

As mentioned at the beginning, cigarette flavouring is a complex process which takes time and evaluation to validate a prototype. We strongly suggest keeping in mind that customers experience sensations and to really use this approach when developing or modifying products. **WT**