

tobacco expertise
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Tobacco Expertise S.A.S.

Training catalog (updated July 2013)

Claude Bosquin
 Bernard Bregeon
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 Alain Murat








July 2013

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Our skills and background ...

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www.tobacco-expertise.com

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Leaf expertise	Leaf purchasing	Process expertise	Blends optimization	Systems reengineering
				


From field to product

The creators of "Tobacco Expertise" benefit of a nearly 30 years experience with a major world tobacco manufacturer.

Their key competencies are:

- Tobacco purchasing for cigarettes, pipe and "roll your own",
- Tobacco expertise (physical, chemical and sensory),
- Tobacco processing, applied to various types of tobaccos from their pre-treatment at suppliers till the final cut rag at primaries,
- Blends design and optimization (tobacco recipes, casings and after-cut flavors),
- Systems adaptation to the specific requirements of the tobacco industry in terms of technical data, specifications, supply chain, costing,...

With its extended address book, "Tobacco Expertise" may rely if necessary on external resources for the coverage of more specialized needs (tobacco agronomy, cigar world specificities, engineering, industrial organization, etc.).



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Slide 1

Our training selection ...

- **"Tobacco Expertise" standard selection**
(still modular according to your specific requirements)
 1. Raw material tobaccos (from leaf to industrial usage)
 2. Tobaccos and blends chemistry
 3. Sensory analysis applied to tobaccos and blends
 4. Tobacco processes at Primaries
- **"Tobacco Expertise" "A la carte" programs**
 - ◆ Mixed programs training sessions
 - ◆ Complementary assistance services

Our training signature ...

- **Highly graphical, documented and "easy to follow" pedagogy (slides examples)**



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1

Raw material tobaccos (from leaf to industrial usage)

From 1 to 3 days depending on the assistance
Jean Lafanechaire - Jacques Monin

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1

Raw material tobaccos (from leaf to industrial usage)

- **General presentation of the training (1)**
 - ◆ **Pre-requisites**
 - In the environment of a tobacco oriented company, this training is more specifically designed for :
 - Technical sales staff members needing to update or improve their set of arguments towards clients or suppliers
 - Non 100% tobacco specialists in Process or R&D, still having to deal with tobacco raw materials or tobacco blends constraints
 - It can be extended in a simpler version to :
 - All the people in the situation to deal - up to a certain extent - with tobacco constraints (costing, quality, logistics, etc.)
 - ◆ **Objectives**
 - **General knowledge on tobaccos :**
 - From the various types of raw materials till their final usage in blends for cigarettes or other tobaccos products (RYO/MYO, cigars, snus)
 - From their production and buying till their industrial usage, reviewing all the corresponding processes and industrial constraints
 - **Economical and technical positioning of the various tobacco presentations or extenders (strips, recon, toasted Burley, expanded, stems, etc.) :**
 - Strengths and weaknesses, and corresponding strategies
 - Possible constraints on adjustments "up" or "down"

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1

Raw material tobaccos (from leaf to industrial usage)

- **General presentation of the training (2)**
 - ◆ **Conditions of organization**
 - Ideally, this training should be split between ...
 - Max. 3/4th to 2/3rd theoretical work
 - Min. 1/4th to 1/3rd practical workshops (possibly in semi-groups)
 - Depending on the assistance, the practical workshops should focus
 - Either on the direct raw material knowledge
 - A consistent samples collection is in that case requested
 - A dedicated room with an adapted lightning is also compulsory
 - Or (and) on econometrical models adapted to a specific demand
 - Such models have to be built in advance
 - Dedicated computer connections for trainees may also be requested
 - ◆ **Possible complementary services from Tobacco expertise SAS**
 - Tobacco sampling
 - Provided the training is planned at least 3 months in advance in order to guarantee the proper samples deliveries
 - Econometrical models construction
 - Provided these models may be pre-defined in advance between the Client and Tobacco Expertise
 - ◆ **Languages**
 - Indifferently in English or French (for support documents and / or speech)

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1

Raw material tobaccos (from leaf to industrial usage)

- **Generic summary (to be adapted selectively to each group specificities)**
 - ◆ **1st part - Raw material tobaccos**
 - Generalities on tobacco production and trade
 - Tobacco types definition
 - Quality differentiation criteria
 - Pre-treatments applied to leaf tobaccos
 - ◆ **2nd part - Tobacco contributions and blends taste lines**
 - Tobacco skills and associated concepts
 - Cigarette taste lines definition
 - ◆ **3rd part - Blends in cigarettes**
 - Cigarette construction and declinations
 - Main processes at the Primaries
 - ◆ **4th part - Industrial tool constraints**
 - Primaries organization in factories
 - Primaries dimensioning
 - Some notions on casings and flavors
 - ◆ **5th part - Blends development and maintenance**
 - Blending responsibilities
 - Product development projects management
 - ◆ **6th part - More on tobacco production and trade**
 - Details on world production and purchasing organization
 - Trends and cycles

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1

Raw material tobaccos (from leaf to industrial usage)

- **Some more details on part 1 (raw material tobaccos) ...**
 - ◆ **Generalities on tobacco production and trade**
 - Statistics on tobacco production and density
 - Statistics on exports and imports
 - ◆ **Tobacco types definition**
 - Different tobacco types specificities
 - Notion of "cru"
 - ◆ **Quality differentiation criteria**
 - Stalk positions
 - Ripeness factors
 - Other qualitative factors
 - ◆ **Pre-treatments applied to leaf tobaccos**
 - Preliminary fermentation of Dark tobaccos
 - Other transformations applied to the growers deliveries
 - Notions of "industrial grade" and "lot"

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1

Raw material tobaccos (from leaf to industrial usage)

- **Some more details on part 2 (tobacco contributions and blends taste lines) ...**
 - ◆ **Tobacco skills and associated concepts**
 - Physical, chemical and sensory tobacco characteristics
 - Notions of "contribution" and "grade group"
 - ◆ **Cigarette taste lines definition**
 - "Basics"
 - Step 1 : simplified typology ("markers" vs "fillers")
 - Step 2 : ONE proposition for a more complex typology based on contributions
 - ◆ **Discussion on the tobacco typologies construction**

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1

Raw material tobaccos (from leaf to industrial usage)

- **Some more details on part 3 (blends in cigarettes) ...**
 - ◆ Cigarette construction and declinations
 - Notion of "brand declination" and corresponding positioning
 - Importance of the cigarette tobacco weight factor
 - ◆ Main processes at the Primaries (simplified synthesis at this stage)
 - Expansion processes applied to stems part
 - Expansion processes applied to strips part
 - Burley toasting
 - Tobacco reconstitution ("paper type" vs "homogenized" vs "extrusion")
 - ◆ Discussion on the respective strengths and weaknesses of each process

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1

Raw material tobaccos (from leaf to industrial usage)

- **Some more details on part 4 (industrial tool constraints) ...**
 - ◆ Primaries organization in factories
 - Some classical primary flow organizations
 - Secondary flows and increasing complexity
 - ◆ Primaries dimensioning
 - "Batch size" notion
 - Miscellaneous flows throughputs
 - ◆ Some notions on casings and flavors
 - Casings and aromas in US blends
 - "Casing gain" notion
 - ◆ Discussion on the blend recipes adjustments constraints

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1

Raw material tobaccos (from leaf to industrial usage)

- **Some more details on part 5 (blends development and maintenance) ...**
 - ◆ **Blending responsibilities**
 - Projects and activities
 - New blends development
 - Maintenance of existing blends
 - Focus on blends cost reduction
 - Possible simulation tools
 - ◆ **Product development projects management**
 - "Project mode" and transversality ("crossover" culture)
 - Development projects various steps and validation
 - Strategic tools
 - Focus on "benchmarking" tools
 - ◆ **Discussion on project development issues**

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1

Raw material tobaccos (from leaf to industrial usage)

- **Some more details on part 6 (more on tobacco production and trade) ...**
 - ◆ **Details on world production and purchasing organization**
 - Major statistics reminder (re: part 1)
 - Purchasing modes
 - Leaf dealers concentration
 - ◆ **Trends and cycles**
 - Tobacco cycles
 - Vertical integration
 - To date mid-term trends
 - ◆ **Discussion on tobacco markets and trends**

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2

Tobaccos and blends chemistry

From 1 to 2 days depending on the assistance
Bernard Bregeon - Jacques Monin

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2

Tobaccos and blends chemistry

- **General presentation of the training (1)**
 - ◆ **Pre-requisites**
 - In the environment of a tobacco oriented company, this training is more specifically designed for :
 - 1 day training : technical sales or process staff members aiming for a better understanding of tobaccos and blends chemical incidence
 - 2 days training : non 100% chemistry specialists from Process or R&D, having to deal with more sophisticated sets of measures and methods
 - ◆ **Objectives**
 - Upon day 1, global overview on tobaccos and blends chemistry :
 - From the various types of raw materials till the final blends
 - Reviewing the major processes or additives impacts
 - Upon day 2, deeper vision on aromatic and regulatory chemical aspects
 - Sets of measures
 - Requested lab facilities
 - Possible methodologies and experimental approaches

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2

Tobaccos and blends chemistry

- **General presentation of the training (2)**
 - ◆ **Conditions of organization**
 - Basically, this training is 100% theoretical
 - Still, it may be worth it to ...
 - introduce a complementary vision on measures and methods available at the Client level (either internally or externally)
 - enter more deeply in the available databases and propose most accurate methods for optimizing the results treatments
 - ◆ **Possible complementary services from Tobacco expertise SAS**
 - Upstream audit of available sets of measures facilities and databases
 - Possible recommendations for improvements
 - Assistance for new methodologies implementation and optimized statistical treatments on available measures
 - ◆ **Languages**
 - Indifferently in English or French for speech
 - Support documents in English by default (a French version is available for text, but most graphics are in English anyhow)

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2

Tobaccos and blends chemistry

- **Day 1 morning agenda (identical between level 1 and level 2)**
 - ◆ **Brief memo on tobaccos typology**
 - Tobacco types definition and quality differentiation criteria
 - Chemical reactions implied in the elaboration of "as is" tobaccos
 - ◆ **Chemical markers**
 - Definition
 - Generic characteristics and grade types
 - ◆ **Tobaccos characterization**
 - Objectives and methodology
 - Different tobacco grades mapping comparison
 - Incidence of the quality, the stalk position and the "evolution"

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2

Tobaccos and blends chemistry

- **Day 1 afternoon agenda (identical between level 1 and level 2)**
 - ◆ **Blends characterization**
 - Objectives and methodology
 - Different blends mapping comparison
 - Links between the chemical parameters and the blends composition
 - ◆ **Semi-finished tobaccos characterization (stems, recon, expanded, etc)**
 - Incidence of the recipe (tobaccos & additives)
 - ◆ **Complementary markers**
 - ◆ **Process effects**
 - Enzymatic incidence
 - Thermal effect (example of toasting)

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2

Tobaccos and blends chemistry

- **Day 2 agenda (level 2 only)**
 - ◆ **Tobaccos volatile compounds**
(possibly extended or at least summarized to level 1 on day 1 if sufficient time)
 - Main precursors and aromas
 - Aromas chemical analysis (extraction, separation and quantification)
 - Sensory aspects (taste and olfaction)
 - ◆ **"Computer assisted blends conception" (linear programming)**
 - Generalities and application example to a "benchmark" blend
 - ◆ **Maillard reactions and NH₃ to sugars interactions**
 - Chemical reactions aspects
 - Implication on tobaccos and in smoke
 - ◆ **Relations between tobaccos and smoke**
 - Smoke genesis and taste lines
 - Cellulose and lignin pyrolysis (incidence of inorganic salts)
 - Tars prevision (C/K)
 - Hoffmann measures and blend or tobacco recipes
 - Biological measures and blend or tobacco recipes

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3

Sensory analysis applied to tobaccos and blends

2 half days (theoretical) + min. 2 half days (practical in small groups)
Jacques Monin

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3

Sensory analysis applied to tobaccos and blends

- **General presentation of the training (1)**
 - ◆ **Pre-requisites**
 - In the environment of a tobacco oriented company, this training is more specifically designed for implementing of extending a sensory analysis panel dedicated to tobaccos and blends evaluation
 - No specific professional profile is required
 - Only willing is requested
 - It supposes the existence of a Sensory Analysis Service
 - This training may be coupled with the implementation of such a Service
 - ◆ **Objectives**
 - General knowledge on sensory analysis
 - Understanding of the specificities of tobaccos and blends in terms of sensory analysis
 - Appropriation of sensory perceptions applied to smoke (sequencing, consensus on descriptors)
 - Training and improvement of panelists
 - Vision of the different sensory analysis methodologies
 - Further knowledge on normalization, odors ranking, consumers approaches

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3

Sensory analysis applied to tobaccos and blends

- **General presentation of the training (2)**
 - ◆ **Conditions of organization**
 - Ideally, this training should be split between ...
 - Max. half theoretical work
 - Min. half practical smoking sessions :
 - Each smoking session should not last more than half a day
 - Each smoking session should not contain more than three evaluations
 - Each evaluation should not concern more than three terms
 - The Client should dispose of a properly ventilated and designed dedicated room for smoking evaluations
 - The client should dispose of facilities and skilled labor availability for making cigarettes in advance (with or without filter)
 - ◆ **Possible complementary services from Tobacco expertise SAS**
 - Tobacco sampling
 - Provided the training is planned at least 3 months in advance in order to guarantee the proper samples deliveries
 - Advice on facilities and data collection tools choice and implementation
 - Help on descriptors selection and corresponding training solutions
 - ◆ **Languages**
 - Indifferently in English or French for speech
 - Support documents so far in French (portable in English if needed)

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Slide 22

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3

Sensory analysis applied to tobaccos and blends

- **Day 1 morning agenda (with both groups)**
 - ◆ **Generalities about sensory analysis**
 - Definition
 - Main missions of a Sensory Analysis Service
 - Different types of panels (descriptive panels, expert panels)
 - Goals and means of a descriptive panel
 - ◆ **Sensory specificities of tobaccos and blends**
 - Brief memo on tobacco types, tobacco contributions and blends taste lines
 - Tobaccos positioning in a crossed chemical and sensory mapping
 - Organoleptic inputs by tobacco contribution (focus on blond blends)
 - Sensory analysis strengths and limits of the Client and possible improvements
 - ◆ **Consensus on sensory perceptions**
 - Some elements on sensory physiology and specificities of smoke
 - Sensory perceptions sequencing upon smoking
 - Consensus on descriptors
 - ◆ **Training and improvement of panelists**
 - Training to taste base items
 - Training to irritation
 - Training to general sensory impressions
 - Training to odors (before lighting and in smoke)

Example on 4 days
2 groups - 3 smoking sessions

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3

Sensory analysis applied to tobaccos and blends

- **Day 1 afternoon agenda** (*group 1*)
 - ◆ First smoking session (unmasked cigarettes)
- **Day 2 morning agenda** (*group 2*)
 - ◆ First smoking session (unmasked cigarettes)
- **Day 2 afternoon agenda** (*with both groups*)
 - ◆ Exchanges on the first smoking session
 - Most consensual items (taste, irritation, general impressions)
 - Aromatic items specific problematic (vocabulary sharing)
 - Synthesis
 - ◆ Different sensory analysis methodologies
 - Comparative approach
 - Separate (i.e. "monadic") approach
 - Other targeted approaches (discriminative tests)
 - Sensory evaluation grids and scales
 - ◆ Further knowledge ...
 - Existing normalization concerning sensory analysis
 - Overview on odors ranking (existing main example : the "Field of odors" ⁽¹⁾)
 - Generalities on consumers tests
 - "Preferences cartography" and "Ideal profile" notions
 - Bibliography

Example on 4 days
2 groups - 3 smoking sessions

(1) Source : Jean-Noël JAUBERT - IAP Sentic - Le champ des odeurs

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3

Sensory analysis applied to tobaccos and blends

- **Day 3 morning agenda** (*group 1 alt. AM/PM*)
 - ◆ Second smoking session (masked cigarettes)
- **Day 3 afternoon agenda** (*group 2 alt. AM/PM*)
 - ◆ Second smoking session (masked cigarettes)
- **Day 4 morning agenda** (*group 1 or 2 indifferently*)
 - ◆ Third smoking session (masked cigarettes)
- **Day 4 afternoon agenda** (*group 2 or 1 indifferently*)
 - ◆ Third smoking session (masked cigarettes)

Example on 4 days
2 groups - 3 smoking sessions

Ideally, new training smoking sessions should be organized regularly
(on a few weeks or months periodicity)

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4

Tobacco processes at Primaries

2 days located in a Primaries equipped factory
Alain Murat - Jacques Monin

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4

Tobacco processes at Primaries

- **General presentation of the training (1)**
 - ◆ **Pre-requisites**
 - In the environment of a tobacco oriented company not disposing of its own Primaries facilities, this training is mainly designed for ...
 - Technical sales staff members needing to update or improve their set of arguments towards clients or suppliers
 - More generally, all people in the company (R&D, SC, etc.) for who the knowledge of a tobacco Primaries factory may represent an added value for their tasks achievement
 - In the environment of a tobacco oriented company already disposing of its own Primaries facilities, this training is adapted in priority to all the company people (Purchasing, R&D, SC, M&S, etc.) for who a better understanding of the Primaries functions and constraints may optimize their anticipation on possible industrial limits
 - ◆ **Objectives**
 - In depth vision of a Primaries factory organization
 - General knowledge of the main process functions at Primaries
 - Specificities of the tobacco different flows and their articulation
 - Main equipments overview
 - Better understanding of the corresponding limits and constraints
 - Flexibility, dimensioning, flow rates, etc.

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4

Tobacco processes at Primaries

- **General presentation of the training (2)**
 - ◆ **Conditions of organization**
 - A Primaries factory has to be selected and preliminarily visited ...
 - Either one of the Client factories
 - Or one from an external partner accepting to provide this service
 - Ideally, this training should be split between ...
 - App. 2/3rd theoretical work
 - App. 1/3rd practical visit of the factory (possibly in semi-groups)
 - Bearing in mind that each visit should not last more than 2 hours ...
 - The first visit should focus on the organization and the flows overview
 - The second visit should focus on each major process function understanding
 - ◆ **Possible complementary services from Tobacco expertise SAS**
 - Depending on countries, our contacts may help in finding an adapted factory
 - Our preliminary audit of the selected Primaries factory may lead to a better synergy between the training and the factory specificities
 - ◆ **Languages**
 - Indifferently in English or French (for support documents and / or speech)

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4

Tobacco processes at Primaries

- **Day 1 morning agenda**
 - ◆ **Brief memo on tobaccos, blends and cigarettes**
 - Tobacco types and blends taste lines
 - Cigarettes declinations and corresponding process
 - Main purpose of Primaries processes
 - ◆ **Theoretical presentation of the Primaries line to be visited**
 - Organization, capacity, statistics, various types of production, etc.
 - **Complementary local presentations (any available graphs, pictures or videos)**
- **Day 1 afternoon agenda**
 - ◆ **1st visit of the factory** *(possibly in 2 groups depending on participants number)*
 - Raw material tobaccos and semi-finished tobaccos logistics
 - Different Primaries tobacco flows and their articulation
 - **If available and allowed, quick visit of the Secondaries facilities and of the final products workshops and logistics**
 - ◆ **"In perspective" positioning of the current factory towards other organizations**
 - Different primary flow classical designs
 - Different secondary flows articulations (and corresponding complexity)
 - Casings and after-cut flavoring options
 - By-products recycling solutions

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4

Tobacco processes at Primaries

- **Day 2 morning agenda**
 - ◆ **Detailed review of processes functions at Primaries**
 - Main purpose of Primaries processes (memo)
 - Main parameters for Primaries processes controls
 - Primary flow line process functions and equipments
 - "Leaf" process functions (from "Feeding" to "Blending")
 - Cut tobacco process functions (from "Blending" to "Drying")
 - Secondary flow lines process functions and equipments
 - Stems process functions (from "Feeding" to "Blending")
 - Stems process functions (from "Blending" to "Storing")
 - Decoupling and storing process functions (other secondary flows)
 - Final blending and flavoring process functions and equipments
 - ◆ **2nd visit of the factory** *(possibly in 2 groups depending on participants number)*
 - Primary flow
(from "leaf" raw materials feeding till casing, cutting and expansion)
 - Specific stems process
(from raw material stems feeding till cutting and expansion)
 - Particular case of "purchased" (i.e. "off line") secondary flows
 - Different flows articulation and cumulative steps of the blending function
 - After-cut flavoring

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4


Tobacco processes at Primaries

- **Day 2 afternoon agenda**
 - ◆ **Technical assessments of the meeting**
 - Opened discussion
 - Synthesis on the elements to be valuated out of the session
(depending on each participant goals)
 - Synthesis on the elements to be valuated out of the session
(depending on the Client requirements)
 - Possible action plan
 - ◆ **Training evaluation**

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"A la carte" programs




- **Mixed training programs**
 - ◆ Depending on your specific requirements or on your concerned colleagues, we may adapt dedicated mixed programs, for example ...
 - Focusing only on raw material tobaccos with the widest extent ...
 - Focusing only on final blends correlations between processes, chemistry and sensory results ...
 - Emphasizing some dedicated aspects for specific people (recently hired, entering new functions, etc.) in order to develop a deeper expertise ...
 - ◆ For better optimization, we may couple our training programs with other services like here after ...
- **Complementary assistance services**
 - ◆ As already underlined in our programs descriptions, we may conduct audits and provide help on a wide range of domains around tobacco
 - Tobacco raw materials, blends and recipes, corresponding chemistry and analytical methods, processes optimization, sensory analysis guidelines ...
 - ◆ This service is extendible internally to more specialized developments like expert computer tools design or ERP linked re-engineering programs
 - Our experience in training and documentation is here a key added value
 - ◆ In case of further needs, our address book allows us to cover externally other specialized expertise domains like listed after. Just consult us ...

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"A la carte" programs



Internal contributions ...

Claude Bosquin
(computer systems and engineering, industry and logistics specific developments)

Bernard Bregeon
(tobaccos and blends chemistry, lab expertise, statistics tools, simulation methods)

Jean Lafanechaire
(raw material tobaccos purchasing, tobacco markets knowledge and address book)

Jacques Monin
(tobacco expertise, blends design and sensory analysis, expert tools conception)

Alain Murat
(tobacco processes expertise, R&D methods, projects management tools)

Possible external contributions upon demand ...

Any requested deeper extra competencies in the domains of cigars, cigarette design, casings and flavors, industrial equipment engineering, ...

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