

A photograph of a person's hands holding a large, dried, yellowish leaf against a black background. The leaf is crumpled and shows a network of veins. The person's arms are visible, wearing a blue shirt. The title 'Principles of Leaf' is overlaid in a large, orange, cursive font.

# *Principles of Leaf*

**2011 AUTs+GETs**  
July 12<sup>th</sup> 2011  
Rajahmundry

# Schedule

- ◆ What do you need to understand ?
- ◆ What is leaf ?
- ◆ Why do you need to learn ?
- ◆ What are Global requirements ?
- ◆ What is Grading system ? BAT Global ? USDA ? ITD ? Tob. Board ?
- ◆ Why Global Grading system ?
- ◆ Feel & Touch the leaf !
- ◆ AGG / OHP / Role of Leaf in GLTs ?
- ◆ Quiz !
- ◆ Grade identification tests !
- ◆ Summing-up & Feedback

# What do we need to learn ?

## ◆ Understanding the leaf

- Different plant positions and the chemistry ranges for each of the plant positions in each growing area
- How does the colour of the tobacco vary with the plant position and chemistry
- Degrees of ripeness and its importance

## ◆ Understanding the product

- Creation of a grade to meet specific customer requirements
- Co-relation between green leaf and packed case
- Acceptable ranges of different packed grades
- Impact of packing moisture and temperature on the final product
- Inter-relationships between physical, chemical and smoke characters

# Global Context

## ◆ Flavor supply

- Over dependence on Brazil for flavor styles
- Declining flavor production in US & ZIM
- Leading to opportunities for alternative sources of flavor supply

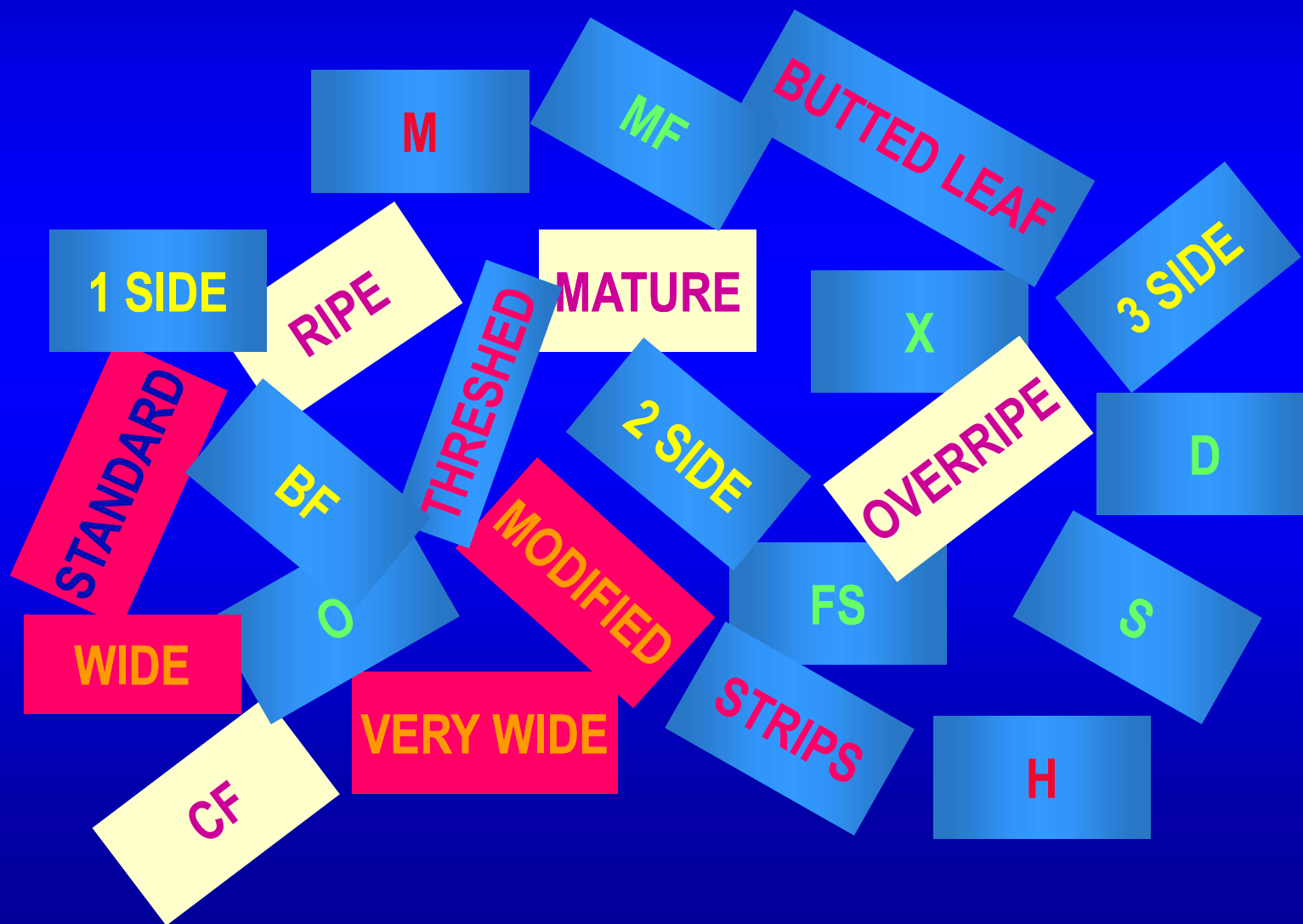
## ◆ Filler supply

- Overall supply continues to exceed demand
- However opportunities still exists for sources which can supply quality tobaccos at competitive prices
- Need to be more competitive than similar sources of supply like EU & China

# Why do we need to understand leaf ?

## Complexity - Quality

FX, FI, SF, FL, FF, HF - ?????????





# Why do we need to understand leaf ?

## Complexity - Customer



**THE MOST VALUED LEAF  
TOBACCO AND AGRI  
BUSINESS ORGANIZATION,  
PROVIDING WORLD CLASS  
PRODUCTS AND SERVICES**

# Basic Leaf Quality Attributes



# The Basics of Leaf Classification

- 
1. Plant Position
  2. Leaf Body
  3. Leaf Color
  4. Leaf Color Intensity
  5. Leaf Ripeness
  6. Leaf Oiliness
  7. Degree of blemish
  8. Texture or structure

# Leaf Classification Basics

## Plant Position & Leaf Body



Position	Body of leaf
◆ Tips	◆ Medium to heavy
◆ Leaf	◆ Fleshy to heavy
◆ Thin Leaf	◆ Medium to fleshy
◆ Cutters	◆ Thin to medium
◆ Lugs	◆ Thin
◆ Primings	◆ Very thin to thin

# Leaf Classification Basics

- FCV Tobacco Colours

**Green /  
Grey**

**Lemon**

**Light /  
Lemon  
Orange**

**Orange**

**Deep  
Orange**

**Mahogany  
or Live  
Brown**

# Leaf Classification Basics

- Color Intensity & Oiliness

## Colour Intensity

- ◆ Pale
- ◆ Weak
- ◆ Moderate
- ◆ Strong
- ◆ Deep

## Oil

- ◆ Lean
- ◆ Oily
- ◆ Rich

# Color Intensity

Generally increases with higher Plant Position

	L	D	O	E	R
T	Lemon	Light Orange	Orange	Deep Orange	Mahogany or Live Brown
B			Strong	Deep	
M		Moderate			
C					
X		Weak			
P	Pale				

# Oil & Colour Intensity

- » Generally, more bodied leaves have more oil and color intensity
- » Generally, mature and ripe leaves have more oil than over-ripe

Lean, Oily  
or Rich

Oily to Rich

Lean to Oily

Lean to lightly  
Oily

Lean

Pale

Weak

Moderate

Strong

Deep



# Leaf Classification Basics

## Ripeness & Degree of Blemish or Damage

### Ripeness

- ◆ Unripe
- ◆ Immature
- ◆ Mature
- ◆ Ripe
- ◆ Over-ripe

### Blemish / Damage

- ◆ Low
- ◆ Medium
- ◆ High

# Leaf Classification Basics

Degree of Blemish or Damage

Low



Medium



High



# Leaf Classification Basics

## Degree of Ripeness and What Colours They May Be

**Unripe**

**Green** / Grey

**Immature**

**Lemon** Grey  
**Orange** Grey

**Mature**

**Lemon**  
**Light Orange** / **Orange**  
**Deep Orange** / **Mahogany**

**Ripe**

**Lemon**  
**Light Orange** / **Orange**  
**Deep Orange**  
**Mahogany**

**Overripe**

**Orange**  
**Deep Orange**  
**Mahogany**

# Leaf Classification Basics

## Physical Characteristics ... cont

### Texture

- ◆ Tight / close
- ◆ Firm
- ◆ Grainy
- ◆ Open

# Texture & Maturity

Feels Like

Likely Ripeness

**Tight / Close**

◆ Very Smooth

◆ Unripe & Immature

**Firm**

◆ Stretchy & Smooth

◆ Mature to Nearly Ripe

**Grainy**

◆ Rough  
(Fine sand paper)

◆ Ripe

**Open**

◆ Very Rough  
(Coarse sand paper)

◆ Over-ripe

# Grading Systems



# Grading Systems

- ◆ **GLC system – Green Leaf Classification system**
  - ◆ **Internal system of sorting tobaccos**
- ◆ **USDA grading system**
- ◆ **Tobacco Board grading system**
  - ◆ **Auction grades for sale**
- ◆ **BAT Global Grading system**
  - ◆ **For Packing grades**
  - ◆ **Alignment of GLC to Global grading system**

# Green Leaf Classification (GLC) System

## Objective

***“To classify green (cured) tobacco accurately and according to one agreed set of standards”***

# Benefits

- ◆ Good basis for professional and uniform green leaf blending
- ◆ Improves communication
- ◆ Accommodate all possible styles
- ◆ Aid in crop style mapping

**3 digits determine the physical quality of the tobacco**

# 1<sup>st</sup> Digit - Plant Position



## Position

## Body of leaf

- ◆ **Tips**                      **T** - Medium to heavy
- ◆ **Leaf**                      **B** - Fleshy to heavy
- ◆ **Thin Leaf**              **M** - Medium to fleshy
- ◆ **Cutters**                **C** - Thin to medium
- ◆ **Lugs**                    **X** - Thin
- ◆ **Primings**              **P** - Very thin to thin

## 2<sup>nd</sup> Digit - Colours

<b>L</b>	<b>Lemon</b>
<b>D</b>	<b>Light Orange</b>
<b>O</b>	<b>Orange</b>
<b>E</b>	<b>Deep Orange</b>
<b>R</b>	<b>Mahogany or Live Brown</b>



# 3<sup>rd</sup> Digit - Ripeness

3 <sup>rd</sup> Digit	L	D	O	E	R
K				Unripe & Immature	
C					Mature
A			Mature to Nearly Ripe		
F			Fully Ripe to Over-Ripe		
D			Mature to Ripe		
P	Pre Mature				

## 3<sup>rd</sup> Digit - Ripeness

**A**

Generally clean leaves which are mature moving toward **ripe** (not fully ripe) that have a low to medium level of blemish. Leaves from this code could be used to pack a “C” grade, i.e. X1C, X2C, X3C. They could be used to pack modified ripe grades, i.e XOA could be a component in X2M

**C**

Clean, **mature** leaves that have low levels of blemish and could be used for **hand strips** or butted loose leaf grades. Also, could be used to pack a “C” grade. i.e. XDC + XOA could be X2CM

**F**

Fully ripe to **over-ripe** leaves which will have a medium to high level of blemish due to their ripeness. O color F's are generally ripe, while E color F's are ripe to over-ripe. Leaves from this code would be used to pack ripe i.e. X2 or over-ripe, i.e. X2X grades

**D**

Leaves getting this code will be **generally mature** with some evidence of ripe from all plant positions. They will probably result from curing or maturity defects caused by stresses from drought, excessive heat, disease, or poor nutrition. Grades with this code could be used to pack breadth suffix grades of M, W, or K depending on degree of the defect

## 3<sup>rd</sup> Digit - Ripeness

**M**

M indicates that the bale is **mixed**. Ideally, to be avoided. However, it is very important to assign the plant position or body and color as closely as possible so that the Green Leaf Blender can have some idea how to use the mixed bale. It is preferable to rework the bale separating out the various styles that are present

**K**

Leaves getting the K code will be **unripe and immature**, slick, tight faced. Considered “Off-style” for the Global Grading system. They would be used to pack KL or KF grade or in K breadth suffix grades. This code can encompass all off-styles produced

**G**

Leaves getting a G code will generally be **immature greens** produced basically from premature harvest. They will be light green or dark green in color, bodied and slick. They would be used to pack KL or KF grades.

# FCV Leaf Quality Attributes

In GLC System

## 1 st Digit - Plant Position

Code	Plant Position
B	Leaf
M	Thin Leaf
C	Cutters
X	Lugs
P	Primings

## 2 nd Digit - Colour (Side)

Code	Colour
L	Lemon
D	Light/ Lemon Orange
O	Orange
E	Deep Orange
R	Mahogany/ Live brown

## 3 rd Digit - Ripeness

Code	Level Of Ripeness
F	Ripe to over ripe
A	Ripe to mature (predominantly ripe with admixture of mature styles)
D	Mature to ripe (predominantly mature with admixture of ripe styles)
C	Mature to ripe with good cutting quality
K	Immature/ slick, tight faced
G	Immature Greens
M	Mixed

# Growth Zones Code in GLC System

## Prefix to 1 st digit - Growth Zones

Code	FCV Zone
W	NLS
N	SLS
P	Traditional
M	Mysore

# Burley Leaf Quality Attributes

## In GLC System

### 1 st Digit - Plant Position

Code	Plant Position
T	Tips
M	Thin Leaf & Leaf
C	Cutters
X	Lugs
P	Primings

### 2 nd Digit - Colour (Side)

Code	Colour
B	Buff
C	Light Tan
F	Tan & Dark Tan / Red

### 3 rd Digit - Ripeness

Code	Level Of Ripeness
X	Ripe
D	Mature
C	Mature to ripe with good cutting quality
K	Variegated
G	Greens
P	Pale ( Tobaccos from all plant positions subjected to low N nutrition )
M	Mixed



# Grade Assessment in GLC System

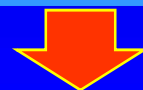
**W X O F**

**Growth  
Zone**

**Plant  
Position**

**Colour  
Symbol**

**Physical  
Characteristic**



- **NLS**
- **Lugs**
- **Orange**
- **Over Ripe**



- **Moderate in color**
- **Grainy Texture**
- **Thin Body**
- **Lean**
- **High Blemish**

# Grade Assessment in GLC System

## ➤ Examples -

➤ **MXOA ?**



## M – Mysore growth zone

## X – Lugs

## O – Orange

## A - Ripe

## ➤ PCLD ?



## P – Traditional growth zone

## C – Cutters

## L – Lemon

## D - Mature

➤ **NPEF ?**



## N – SLS growth zone

## P – Primings

## E- Deep Orange

## F – Over Ripe

Plant Position is?

## Classify this Leaf

Color is?

Lugs, Body is Medium = **X**

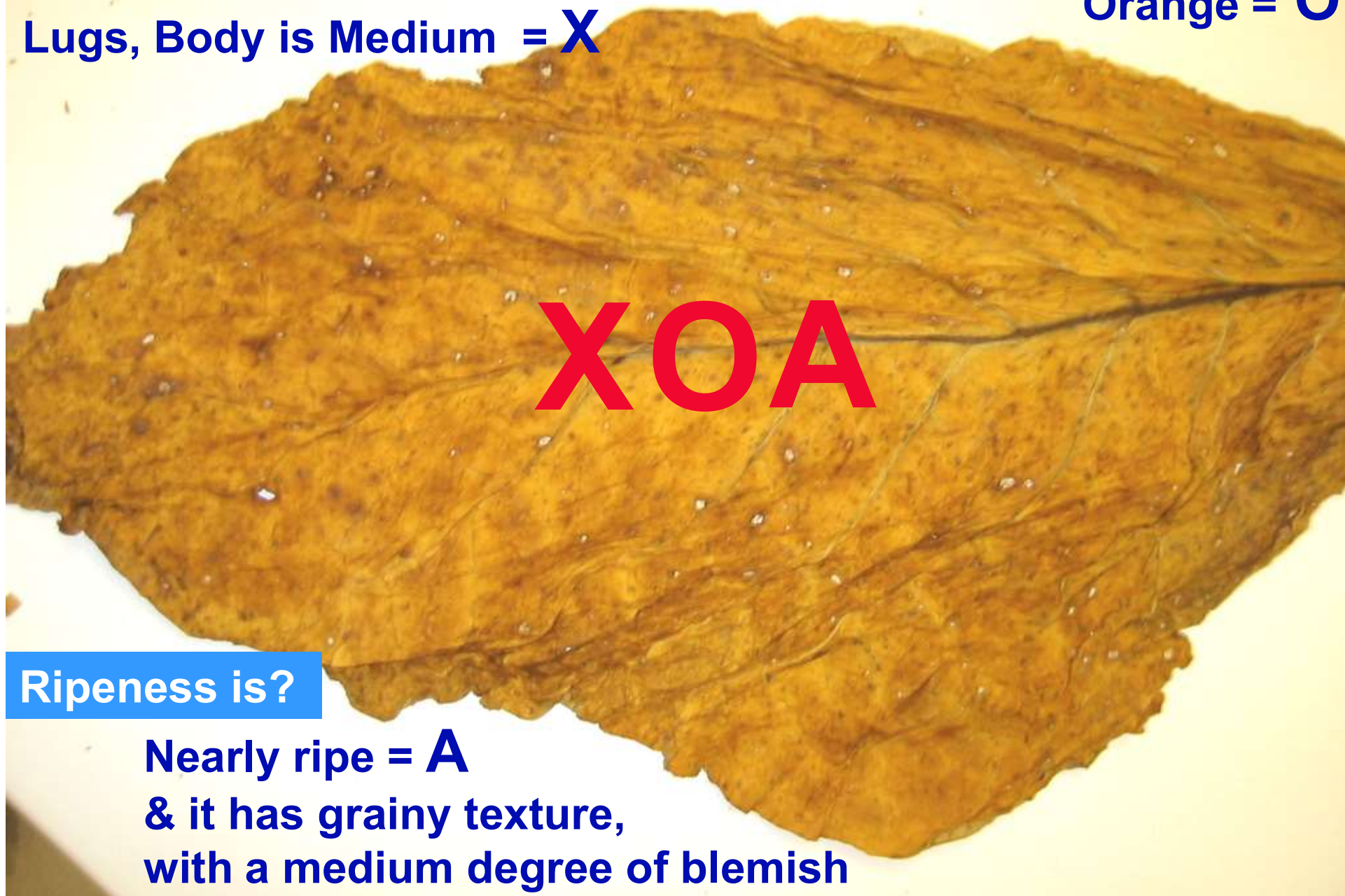
Orange = **O**

**XOA**

Ripeness is?

Nearly ripe = **A**

& it has grainy texture,  
with a medium degree of blemish



# USDA Grading System

ELEMENTS	DEGREES				
MATURITY	Immature	Unripe	Mature	Ripe	Mellow
LEAF STRUCTURE	Tight	Close	Firm	Open	
BODY	Heavy	Fleshy	Medium	Thin	
OIL	Lean	Oily	Rich		
COLOUR INTENSITY	Pale	Weak	Moderate	Strong	Deep
WIDTH	Stringy	Narrow	Normal	Spready	
LENGTH "					
UNIFORMITY %					
INJURY TOLERANCE %					
WASTE TOLERANCE %					

# USDA Grading System

## KEY TO STANDARD GRADEMARKS

### Groups

B - Leaf  
H - Smoking Leaf  
C - Cutters  
X - Lugs  
P - Primings  
M - Mixed Group  
N - Nondescript  
S - Scrap.

### Qualities

1 - Choice  
2 - Fine  
3 - Good  
4 - Fair  
5 - Low  
6 - Poor

### Color Symbols Combination Symbols

L - Lemon	KL - Var. lemon	XL - Lug side
LL - Whitish-lemon	KF - Var. orange	PO - Oxidized primings
F - Orange	KD - Var. dark red	XO - Oxidized lugs or cutters
FR - Orange red	KV - Var. greenish	BO - Oxidized smoking leaf
R - Red	KM - Var. mixed	GL - Thin-bodied nondescript
K - Variegated	G - Green	GF - Medium-bodied nondescript
KR - Variegated red or scorched	GR - Green red	LP - Lemon (Primings Side)
V - Greenish	GK - Green variegated	FP - Orange (Primings Side)
GG - Gray green	KK - Excessively Scorched	

### Special Symbol

S - Slick.

# Tobacco Board Grading System - PP

## PLANT POSITION GRADES

FIRST DIGIT		SECOND DIGIT			THIRD DIGIT			
PLANT POSN CODE	DESCRIPTION	QUALITY CODE	DESCRIPTION	BLEMISH %	COLOUR CODE	DESCRIPTION	CODE	DESCRIPTION
T	TIPS	1	CHOICE	Upto 20 %	L	LEMON	J	IMMATURE TOBACCOS
L	LEAF	2	FINE	20 - 30 %	O	ORANGE	S	SALINE TOBACCOS
X	LUGS	3	GOOD	30 - 55 %	R	RED/DEEP ORANGE	P	PALE TOBACCOS
P	PRIMINGS	4	FAIR	Upto 80 %				
		5	LOW	> 80 %				

Example -

- X1L Lugs, Choice quality & Lemon in colour
- X1O Lugs, Choice quality & Orange in colour
- X1J Lugs, Choice quality & immature tobaccos
- X1P Lugs, Choice quality & pale tobaccos
- X1S Lugs, Choice quality & Saline tobaccos (high chloride)

GRADE	DESCRIPTION
BG	Bottom light greens
BMG	Bottom medium greens
TG	Top light greens
TMG	Top medium greens
NDG	Non descript greens
NOG	Non descript grade

# Tobacco Board - Colour Grading System

## COLOUR GRADES

GRADE DESIGNATION	COLOUR	BODY	TEXTURE	BLEMISH %	AGMARK GRADE
F1	BRIGHT LEMON OR BRIGHT ORANGE	THIN TO MEDIUM	FINE	25	1 TO 4
F2	LIGHT BROWNISH LEMON/LIGHT BROWNISH ORANGE	MEDIUM	GOOD	25	LBV
F3	LIGHT BROWNISH LEMON/LIGHT BROWNISH ORANGE	MEDIUM	COARSE TO MEDIUM	50	LBV
F4	BROWN	HEAVY	COARSE TO MEDIUM	65	BROWN
F5	DARK BROWN	HEAVY	COARSE TO MEDIUM	65	DARK BROWN
F6	LIGHT GREENISH AND/OR LIGHT ORANGE AND/OR LIGHT LEMON	GOOD	SOFT TO MEDIUM	10	LG
F7	LIGHT MEDIUM GREEN	HEAVY	COARSE TO MEDIUM	25	LMG
F8	MEDIUM GREEN	HEAVY	COARSE TO MEDIUM	25	MG
F9	DARK GREEN	COARSE	COARSE	25	DG
F10	ORANGE AND/OR GREEN AND/OR BROWN	-	-	-	PL, BITS

# **Display of Leaf Samples & RTL on Basic Leaf Quality Attributes**



# Case Study

## Group Exercise

# Broad Customer Preferences

Region	Preference
◆ Far East	Coloury Tobaccos @ Competitive prices
◆ East Europe	Ripe to overripe Tobaccos @ Competitive prices
◆ West Europe	Ripe Tobaccos @ Premium prices

## Case Study - Group Exercise

**A manufacturer who has a strong brand presence in Western Europe wants to expand his operations to Eastern Europe. How do you propose to partner with him in his Business development plan.**

# **BAT** *Global Grading* **System**

# Global Grading System

## ◆ Parameters

- **Plant Position**
- **Ripeness**
- **Breadth Suffix**

# Plant Position Blended Grades & Codes

# Plant Position Grades & Codes

Plant Position	Blended Grade	Code	Revised Code	Nic %
TA - Thin Tips	T – TA	G		
T - Tips	T – B	CF	CF	> 4.3
	B – T	BF		
B - Leaf	B	AF	AF	3.8
	B – BA	R		
BA - Thin leaf	BA	MF	MF	3.3
	BA – C	M		
	C – BA	H	H	2.9
C - Cutters	C	E		
CA - Thin cutters	CA – X	O	O	2.5
	X - CA	D		
X - Lugs	X	X	X	2.1
	X – P	S		
P - Primings	P – X	FS	FS	< 1.7
	P	P		

# Plant Position Grades & Codes

Plant Position	Blended Grade	Code	Revised Code	Nic %	New Code	Nic %
TA - Thin Tips	T – TA	G				
T - Tips	T – B	CF	CF	3.9 - 4.3 >	HF	> 4.0
	B – T	BF				
B - Leaf	B	AF				
	B – BA	R	AF	3.4 - 3.8	FF	3.5 - 3.9
BA - Thin leaf	BA	MF				
	BA – C	M	MF	3.0 - 3.3	FL	3.0 - 3.4
	C – BA	H				
C - Cutters	C	E	H	2.6 - 2.9	SF	2.5 - 2.9
CA - Thin cutters	CA – X	O				
	X - CA	D	O	2.2 - 2.5		
					FI	2.0 – 2.4
X - Lugs	X	X				
	X – P	S	X	1.8 - 2.1		
P - Primings	P – X	FS				
	P	P	FS	< 1.7	FX	< 1.9



# Codes & Description

Code	Description
G	Essentially Tips, predominantly bodied but allowing a portion of thin Tips
CF	Predominantly Tips but allowing a portion of bodied leaf
BF	Predominantly bodied leaf but allowing a portion of Tips
AF	Essentially bodied leaf
R	Predominantly thin leaf but allowing a portion of bodied leaf
MF	Essentially thin leaf
M	Predominantly thin leaf but allowing a portion of bodied cutters
H	Predominantly cutters but allowing a portion of thin leaf
E	Essentially cutters
O	Predominantly cutters but allowing a portion of bodied lugs
D	Predominantly lugs but allowing a portion of thin cutters
X	Essentially lugs
S	Predominantly lugs but allowing a portion of Primings
FS	Predominantly Primings but allowing a portion of thin lugs
P	Essentially Primings

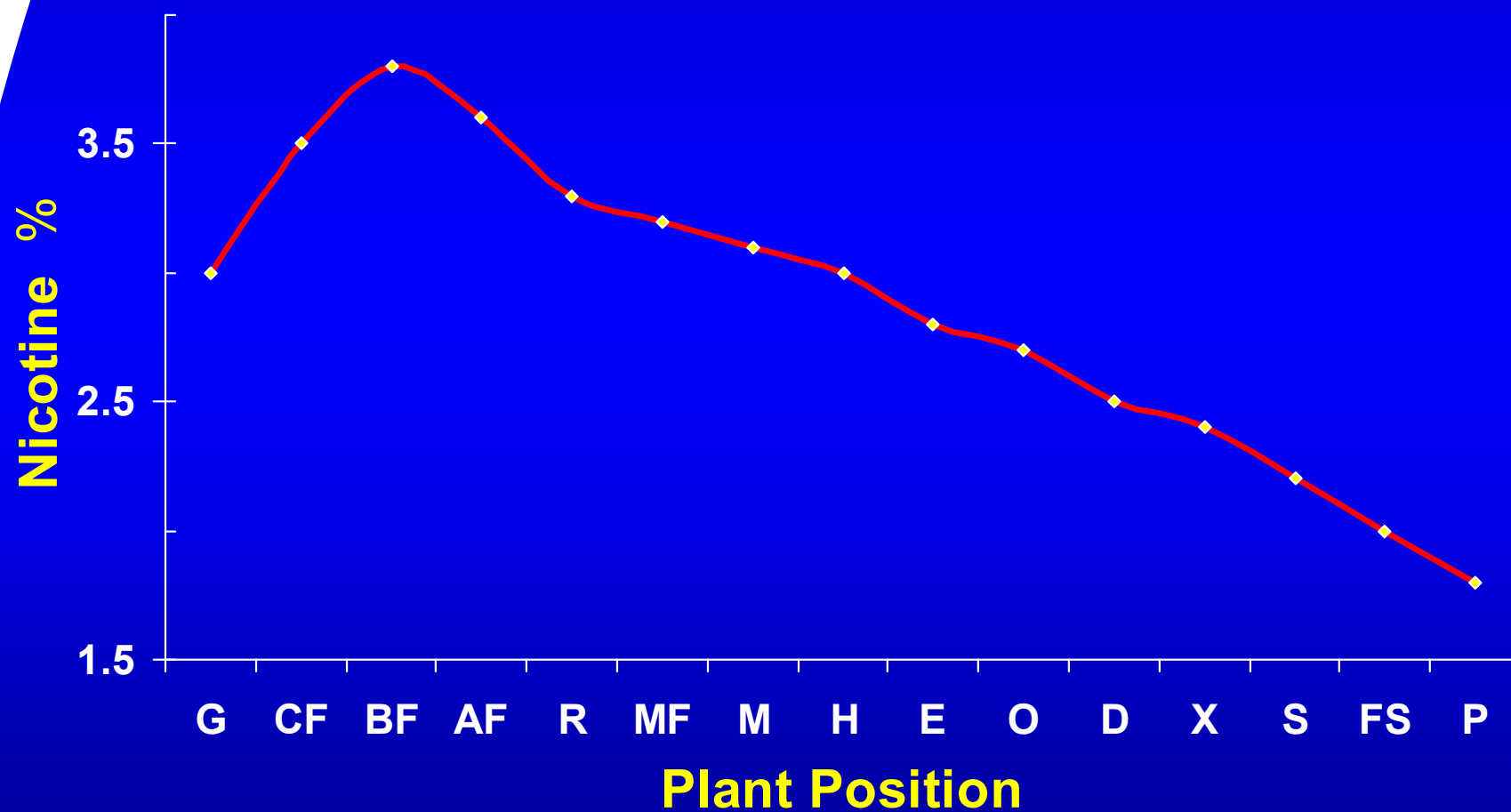
# Plant Position – Impact & Body

Blended Grade	Impact	Body	Code
T – TA	M / H	F / M	G
T – B	MH / H	F / H	CF
B – T	VH	H	BF
B	H / VH	H / F	AF
B – BA	H	F / H	R
BA	MH	F	MF
BA – C	MH / M	F / M	M
C – BA	M / MH	M / F	H
C	M	M	E
CA – X	M / ML	M / T	O
X – CA	LM / M	T / M	D
X	LM / M	T	X
X – P	L / LM	T / VT	S
P – X	VL / L	VT / T	FS
P	VL	VT	P

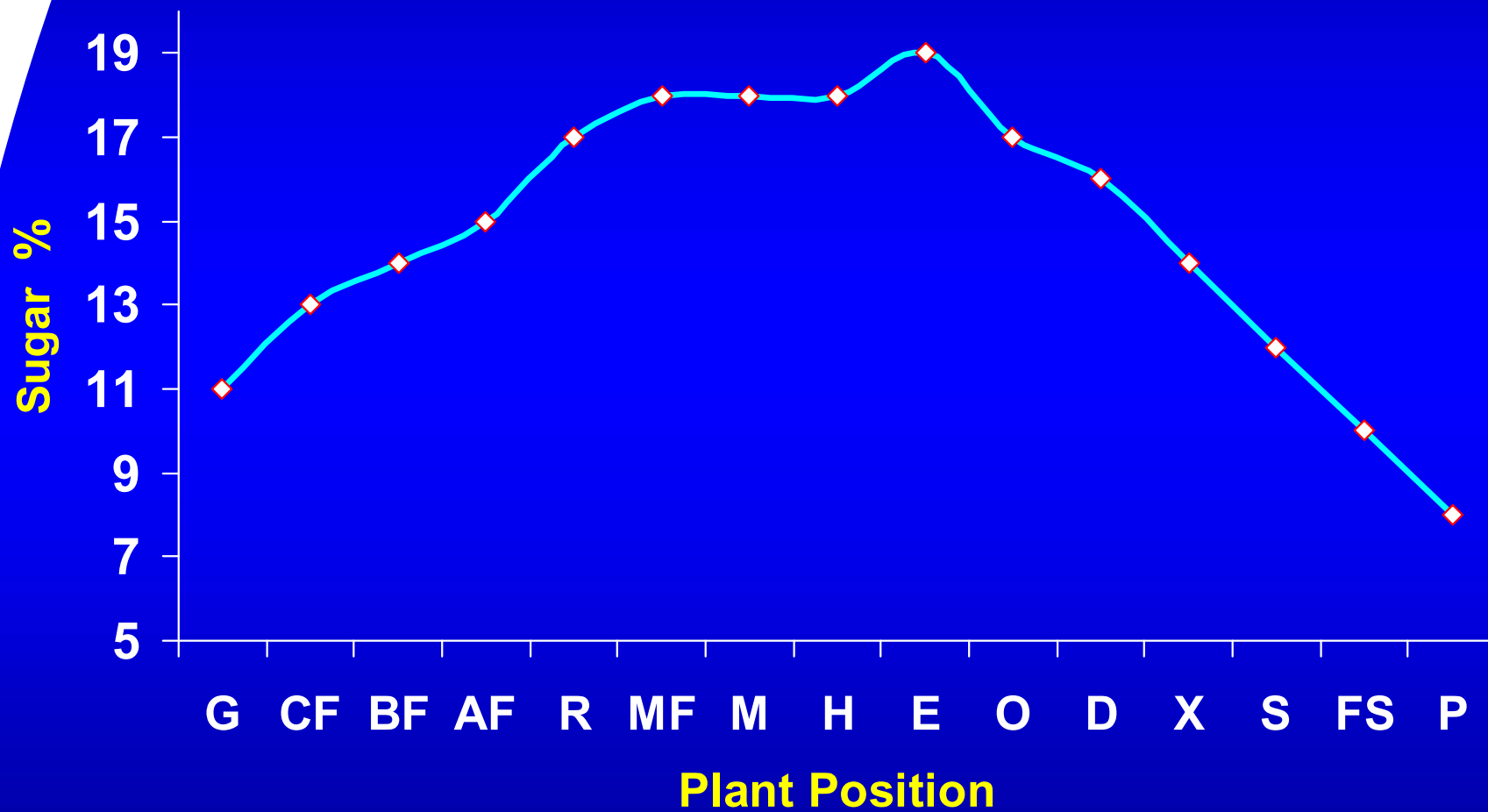
Body	
H	Heavy
F	Fleshy
M	Medium
T	Thin
VT	Very Thin / Fluffy

Impact	
VH	Very High
H	High
MH	Medium High
M	Medium
LM	Low Medium
L	Low
VL	Very Low / None

# Nicotine By Plant Position

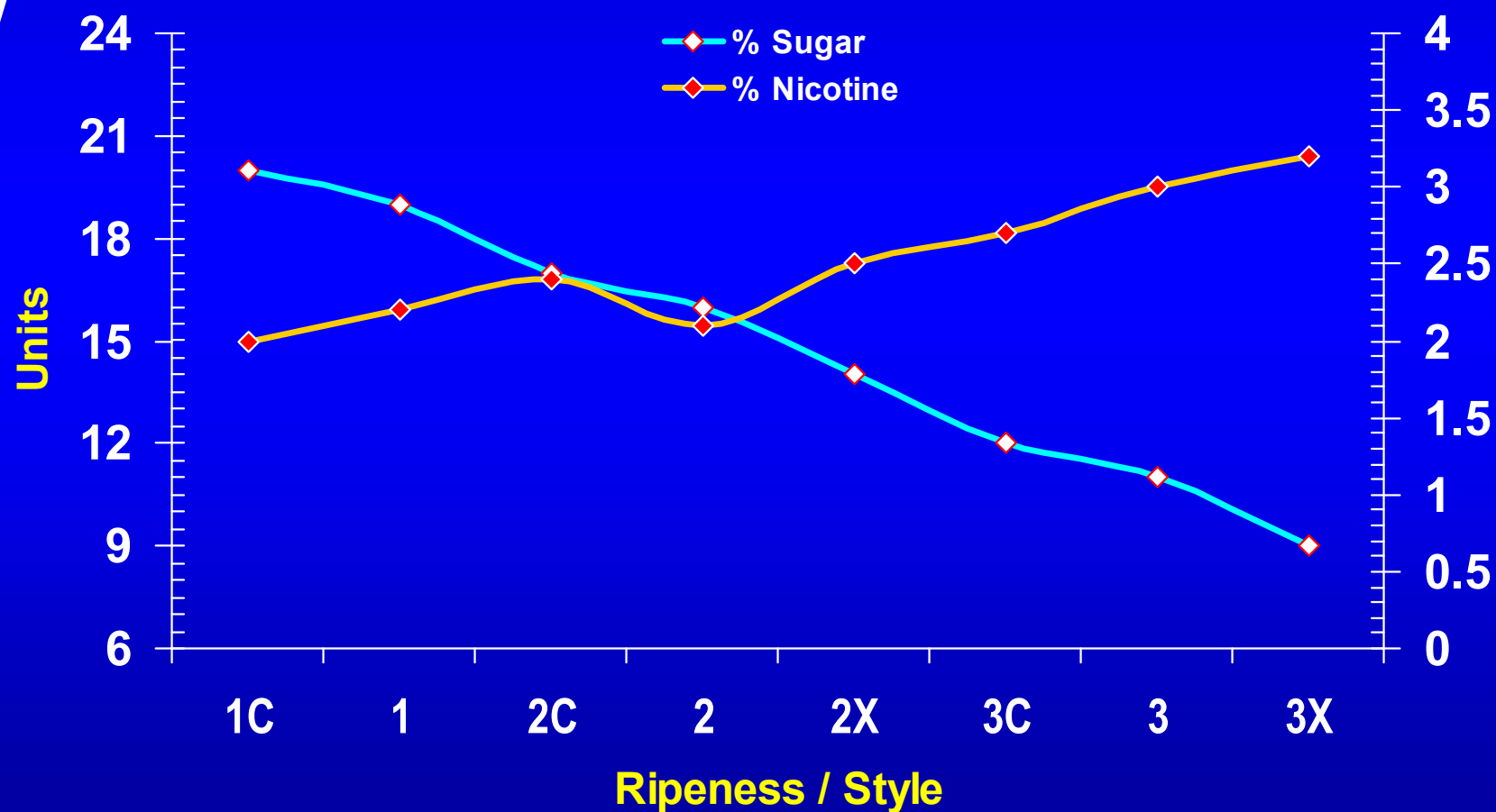


# Total Sugar By Plant Position



# Nicotine & Total Sugar

## By Degree of Ripeness / Style



# Ripeness & Codes

# Degree of Ripeness

## - Characteristics

Colour	Green/, Lemon , Orange		Lemon, Lemon Orange		Orange/ Deep Orange			Deep Orange/ Mahogany		
Degree Of Ripeness	Unripe/ Immature Lemon	Unripe Immature Orange	Mature	Ripe	Mature	Ripe	Over Ripe	Mature	Ripe	Over Ripe
Grain	Close	Close	Firm	Grainy	Firm	Grainy	Open	Firm (Oily)	Grainy	Open
BATSuffix Code	KL	KF	1C	1	2C	2	2X	3C	3	3X
	Offside		One Side		Two Side			Three Side		

# Ripeness Style

## Offside

- ◆ Closed grain
- ◆ Slick
- ◆ Variegated
- ◆ Dry natured
- ◆ High level of starch
  - Smoke
    - high level of irritation
    - immature vegetable note
  - Two types
    - KL : Lemon
    - KF : Orange





# Ripeness Style

## One Side Mature (1C)

- ◆ Soft natured
  - ◆ Lemon
  - ◆ Tight grained but not slick
  - ◆ Very little injury
  - ◆ High Sugar content
  - ◆ Low Nicotine's
- 
- **Smoke**
    - Slightly irritating compared to two side
    - Smoke not harsh
    - Low impact indicating high sugar and Nicotine

# Ripeness Style

## One Side Ripe Style (1)

- ◆ Similar to straight side mature
- ◆ Lemon to Lemon orange
- ◆ Slightly more grain and injury
- ◆ Slightly high nicotine
  - Smoke - less irritating
  - Off - Notes

# Ripeness Style

## Two Side Mature (2C)

- ◆ Oily
- ◆ Low injury
- ◆ Generally accepted as hand strips
  - **Smoke** - less rounded character

## Two Side Ripe (2)

- ◆ Low to medium level of injury
- ◆ Uniform orange to deep orange colour
- ◆ Grainy and soft natured
  - **Smoke** - **Balanced, off medium pitch with some sweetness**
    - **No immature and off - taste**
    - **Low irritation**
    - **Balanced impact and medium flavor amplitude**

# Ripeness Style

## Two Side Overripe (2X)

- ◆ Very open grain style
  - ◆ Deeper orange
  - ◆ High level of browns
  - ◆ Thin body
  - ◆ Poor cutting quality
  - ◆ High fill value
- 
- **Smoke**
    - **Rounded, Mellow, Sweet**
    - **Low levels of irritation**
    - **High impact**

# Ripeness Style

## Three Side Mature (3C)

- ◆ Firm bodied
- ◆ Deep orange / Mahogany colour line
- ◆ More oily
- ◆ Good cutting quality

➤ **Smoke** - less rounded character

# Ripeness Style

## Three Side Ripe (3)

- ◆ Mahogany
- ◆ Good grainy structure
- ◆ Carrying more level of injury and presence of browns high nicotines

**Smoke - Mellow, Lower pitched**

**- High flavour amplitude (upper stalk)**

# Ripeness Style

## Three Side Overripe (3X)

- ◆ Deeper colour and thinner
  - ◆ Low sugars
  - ◆ Presence of brown / black particles
  - ◆ High nicotines
- 
- **Smoke**
    - High impact
    - Low pitch
    - High flavour amplitude (upper stalk)



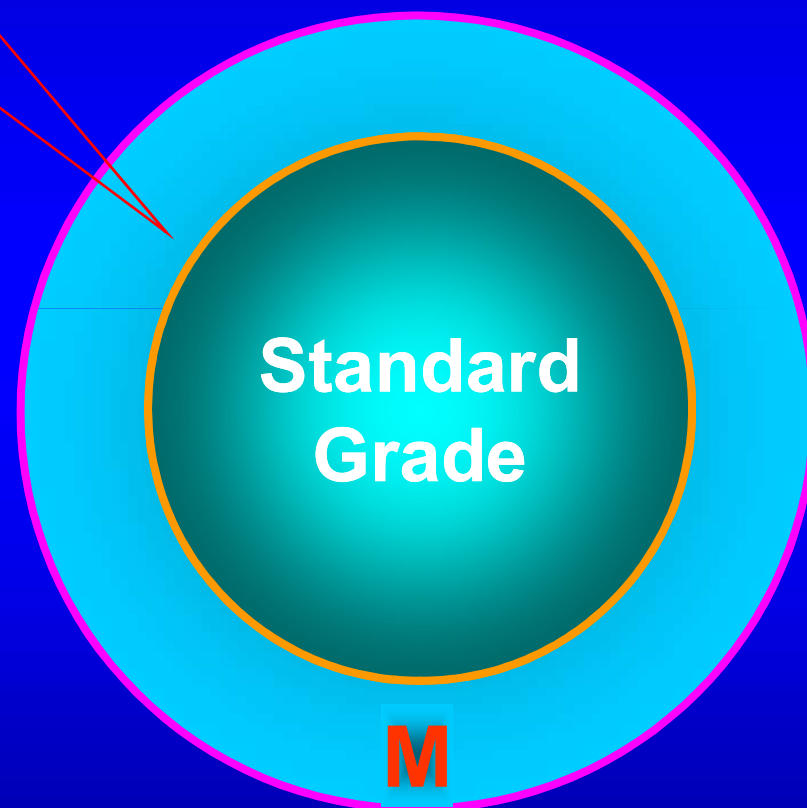
# Breadth Suffix

**Same:  
Grade, Body,  
Side, Colour,  
Ripeness.**



**Standard  
Grade**

**Same:  
Plant Position  
and Body  
as the Standard  
grade, but:..**



**Same:**  
Plant  
Position  
and  
Body  
as the  
Standard  
grade,  
but..

Will contain a slightly  
wider range of styles in  
order to specifically  
create a relatively  
subtle change in smoke  
character or to  
maximise volume

**Standard  
Grade**

**M**

M grades cannot  
emanate from  
KL or KF styles.

**Same:  
Plant Position and  
Body  
as the Standard  
grade,  
but:.**

**Will contain a slightly  
wider range of styles in  
order to specifically  
create a relatively  
subtle change in smoke  
character or to  
maximise volume**

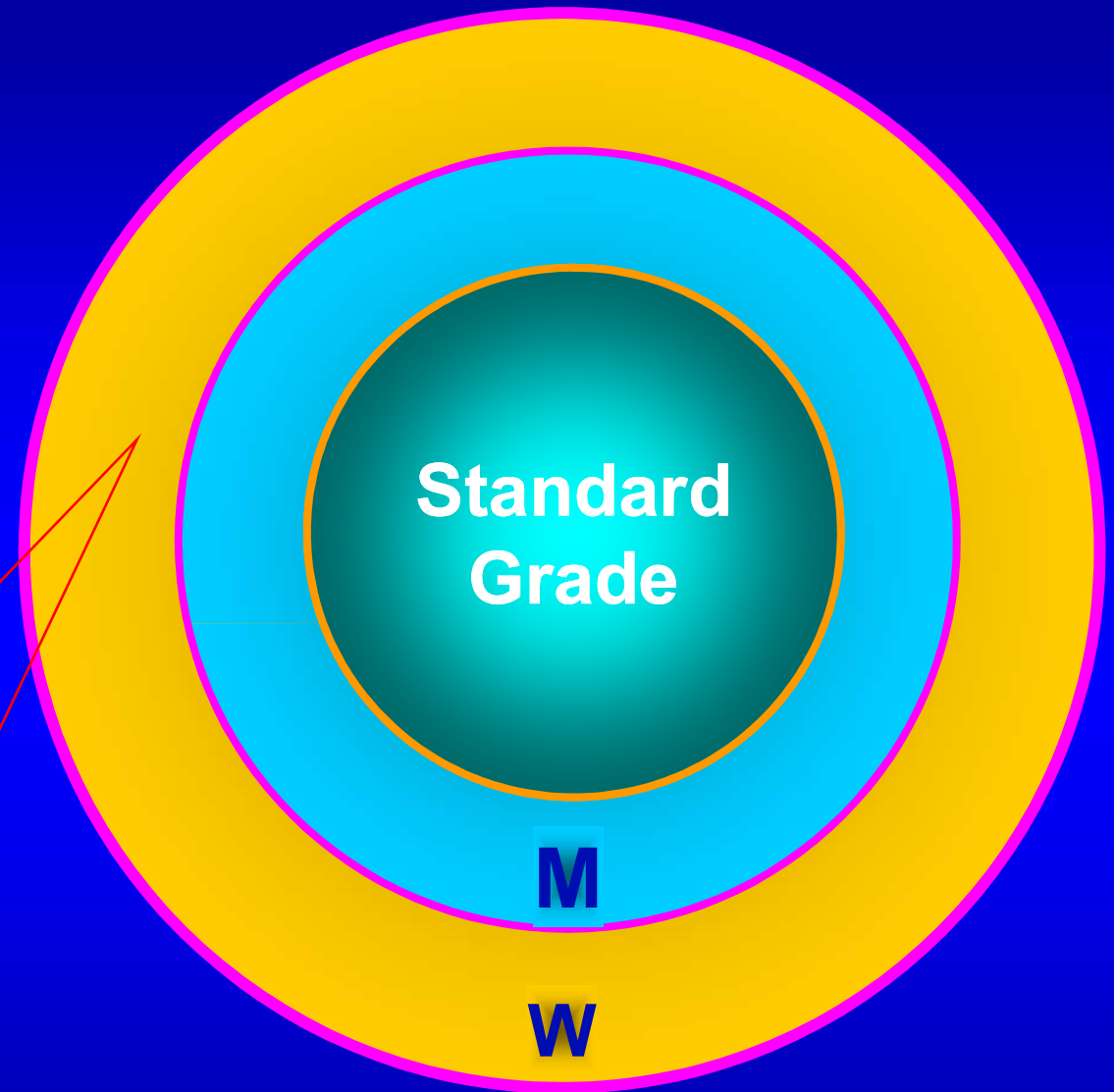
**Smoke from these grades  
may have a slightly  
modified  
overall Fla. Amp. than the  
standard but, in other  
aspects,  
will retain its essential  
character.  
but:.**

**Standard  
Grade**

**M**

**M grades  
cannot  
emanate  
from  
KL or KF  
styles.**

**Broader range  
than M style  
but still basically  
from the  
same Plant  
Position as the  
standard grade.  
Few of the  
components of  
the standard  
grade will be  
represented but**



**Broader range than M style but still basically from the same Plant Position as the standard grade. Few of the components of the standard grade will be represented but**

**There will be significant quantities of M style components in the blend together with a small proportion of a slightly wider range of plant position and ripeness**

**Standard  
Grade**

**M**

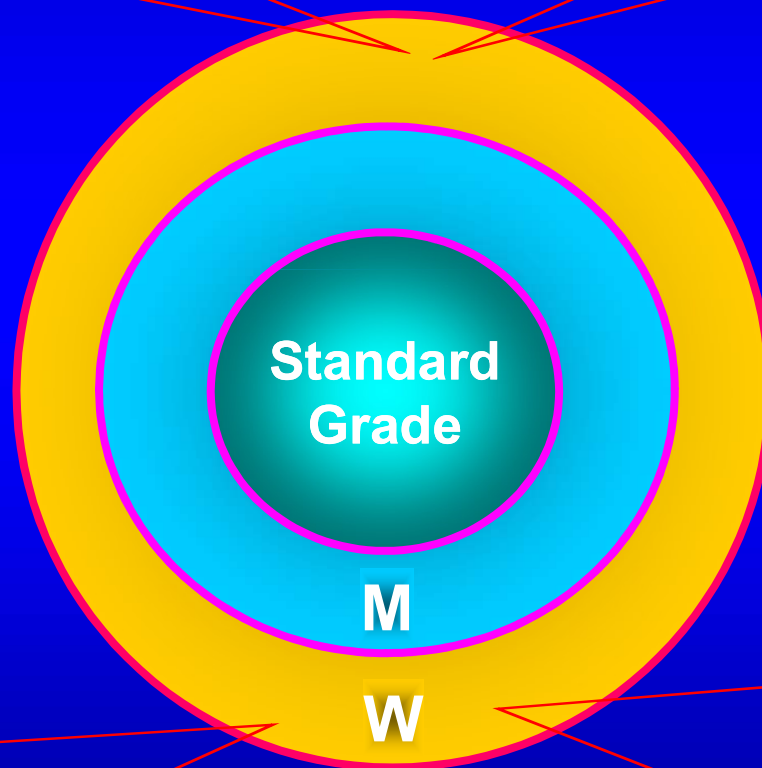
**W**

**This style will have less uniformity and richness than either the standard or M style.**

Broader range than M style but still basically from the same Plant Position as the standard grade. Few of the components of the standard grade will be represented but

There will be significant quantities of M style components in the blend together with a small proportion of a slightly wider range of plant position and ripeness

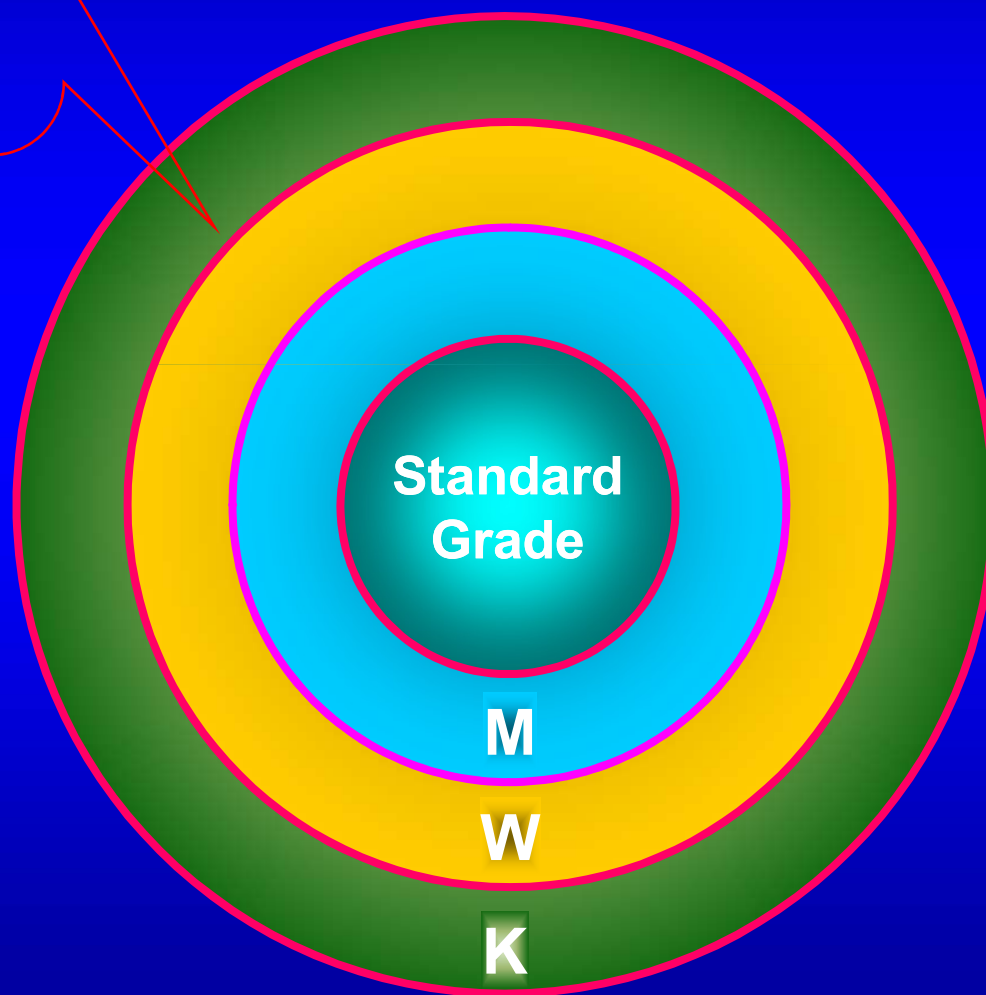
Smoke will be less rounded than either the standard or the M style and may carry a degree more Irritation. Impact may be essentially unchanged whilst overall Fla. Amp. Will be lower than M style



This style will have less uniformity and richness than either the standard or M style

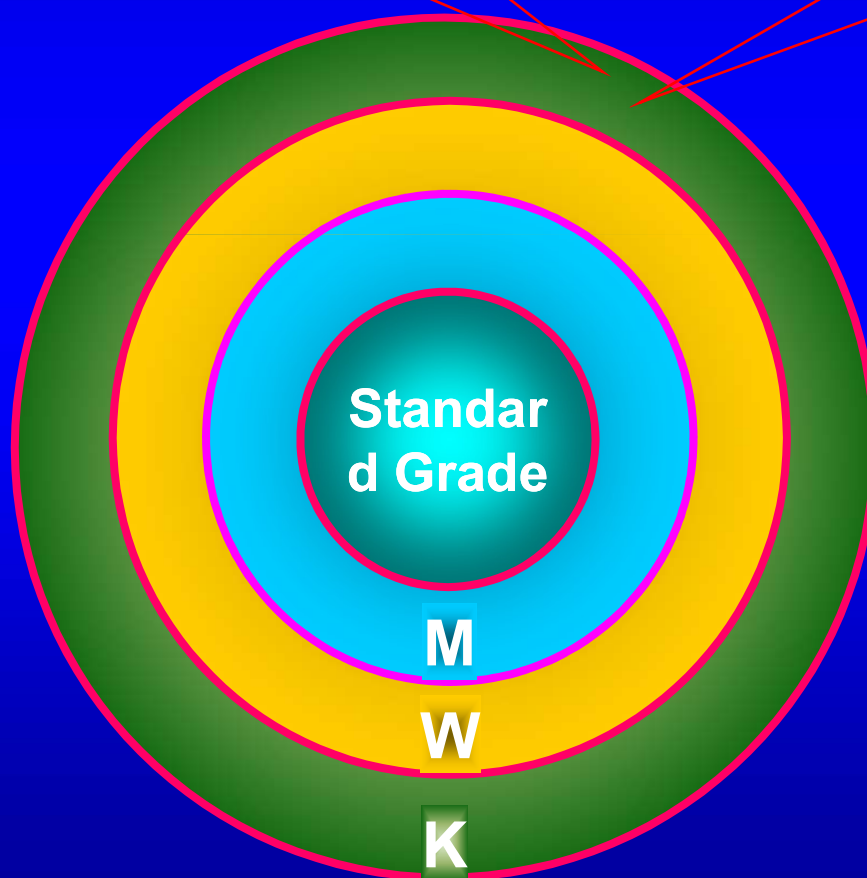


Based on W  
styles but will  
be composed  
of a wider  
range of  
components



Based on W styles but will be composed of a wider range of components

A proportion of other plant position and degree of ripeness will be allowed



Based on W styles but will be composed of a wider range of components

A proportion of other plant position and degree of ripeness will be allowed

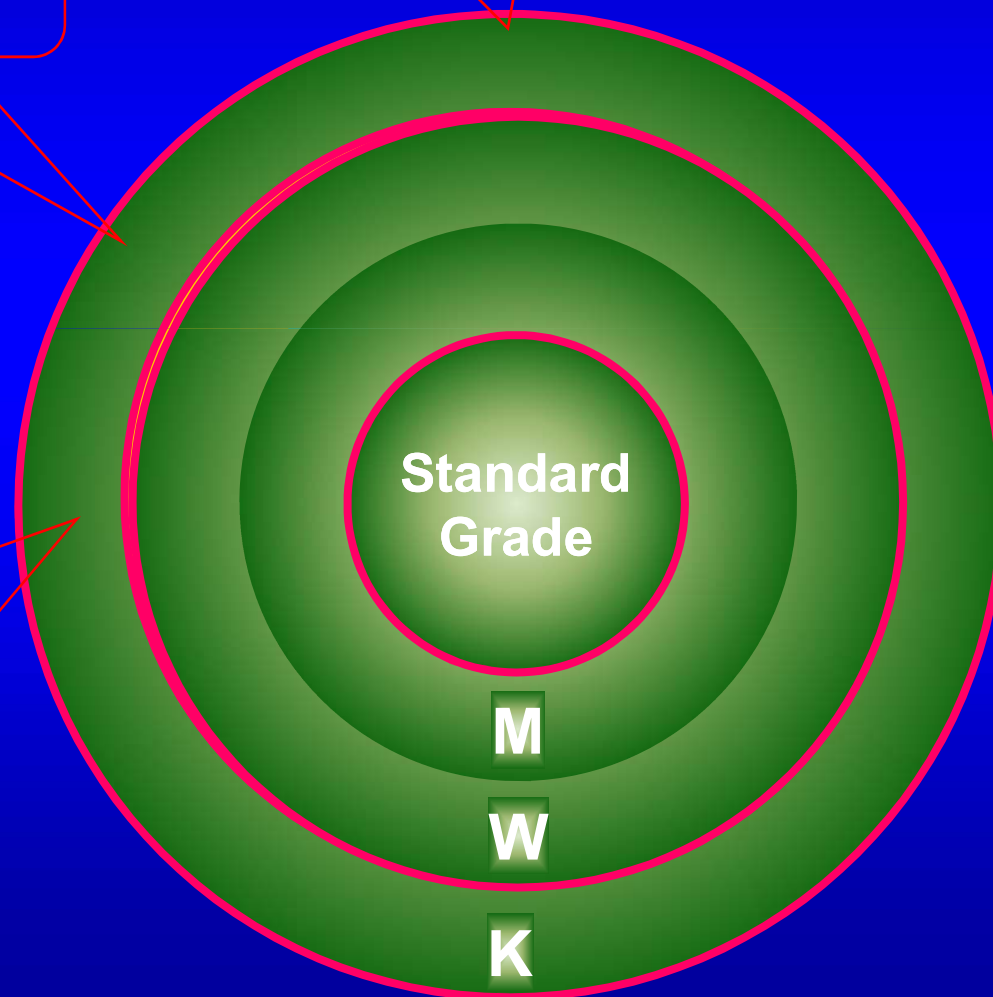
Smoke is likely to be harsher and more irritating than W style and may not retain the basic Impact associated with the standard. Fla. Amp. will be lower than W style and less clean

Standard  
Grade

M

W

K



# Grade Standard

**M – Modified W – Wide K – Very wide**

## Example of Breadth Suffix Grade

**X2 Standard**

**X2M Modified**

**X2W Wide**

**X2K Very Wide**

# Grade Standard

**M – Modified W – Wide K – Very wide**

	Standard	M	W	K
Plant Position Uniformity	0	0	<	<<
Colour Uniformity	0	0	<	<<
("SIDE")				
Ripeness Uniformity	0	<	<<	<<<
Shine (colour finish)	0	<	<<	<<<
Amount of Blemish	0	>	>>	>>>
Amount of Injury	0	>	>>	>>>
Degree of Oily	0	<	<<	<<<
Overall Uniformity	0	<	<<	<<<

# Form Suffixes

Most Used Forms	Suffixes
Redried Machine Strips	S / T
Redried Hand Full Strips	H
Redried Frog Strips	F
Redried Butted Leaf	U
Redried Bundles	B
Redried Straight Laid Leaf	E
Final Seiving 1/4"	Q

# Grade in BAT Language

Example – INWX2M/06

Country Region

Quality

Form

Year

I N W X 2 M / S / 0 6

Plant Position

Breadth Suffix

# Case Study - Group Exercise

- ◆ **Create a RTL grade on the following requirements as placed by a BAT OPCo –**
  - **Grade should be ripe, orange with Nicotines around 2.5 % and sugars around 14 %.**
  - **Grade can take a little bit mix of ripeness**
  - **Grade should be thin to medium in body**
  - **Grade should smoke with medium impact**
  - **Give the GLC blend and name the grade in BAT language**
- ◆ **2 groups to present the case – 10 min each**





# **BAT Old Global Grading System - Burley**

# BAT Global Burley Grading System

	OFFSIDE		BUFF SIDE			TAN SIDE			RED SIDE		
COLOUR →	GREEN, YELLOW, TAN, BROWN		BUFF IN COLOUR			TAN IN COLOUR			DARK TAN / RED IN COLOUR		
DEGREE OF RIPENESS →	UNRIPE IMMATURE GREEN YELLOW	UNRIPE IMMATURE TAN, RED BROWN & BLACK	MATURE	R I P E	MELLO W	MATURE	R I P E	MELLOW	MATUR E	R I P E	MELLOW
GRAIN	CLOSE	CLOSE	FIRM	G R A I N Y	OPE N	FIRM	G R A I N Y	OPEN	FIRM	G R A I N Y	OPEN
BAT CODE	GL	GF	4C	4	4X	5C	5	5X	6C	6	6X
BODY / PLANT POSITION	F/FH=T H=B F=M M=C T=X VT=P										
	CGL	CGF	C4C	C 4	C4X	C5C	C 5	C5X	C6C	C 6	C6X

# Burley Breadth - Suffixes

- ◆ Adopted to identify grades which do not conform to the standard

- Standard

M – Modified

W – Wide

K – Very wide

# Burley Grade Description

<b>Country of origin</b>	<b>always two letters</b>
<b>Region</b>	<b>always one letter or “-”</b>
<b>Plant position / Body</b>	<b>one or two letters</b>
<b>Colour line (“side”) / Ripeness from one or two letter / number combination</b>	
<b>Breadth</b>	<b>Zero or one letter</b>
<b>Form</b>	<b>Zero to four letters to be used in alphabetical order</b>
<b>Crop Year</b>	<b>two digits</b>

**Example : INVPC5XWS06**

# Takeaways

- ◆ Global grading to enhance knowledge & skill on Leaf quality attributes
- ◆ Leaf knowledge to facilitate new grades Creation
- ◆ Facilitate maximisation of critical grades

**Better & Efficient Leaf Utilization**

A hand is holding a large, yellow, textured leaf against a black background. The leaf has a prominent central vein and many smaller veins branching out. The texture of the leaf appears fibrous and slightly wrinkled. The hand is positioned at the top left, with the thumb and index finger gripping the edge of the leaf. The arm extends towards the right, showing a blue sleeve. The overall composition is simple and focuses on the contrast between the bright yellow leaf and the dark background.

Q & A

*Seeing Is Believing*

# The Best You Can Be

*"Learn something new  
Try something different  
Change what you can and the rest will go by*

*Starting today...  
Strive to become the best you can be"*



## Hard work Helps

*"Hard work is like the stairs  
Luck is like a lift  
Lift may fail sometimes*

*But whatever is the task, stairs will always  
take you to the top*

*Luck might help you once  
But hard work helps always"*

*Thank you*

*-Asish*



# Thank You

# Back up

# Sensory Evaluation

## Mechanics

**Draw Effort**  
**Draw Resistance**  
**Mouthful**

## Visual & Tactile

**Firmness**  
**Ash**  
**End Stability**  
**Hot Collapse**

## Chemical Senses

**Impact**  
**Irritation**

## Flavor Sensation

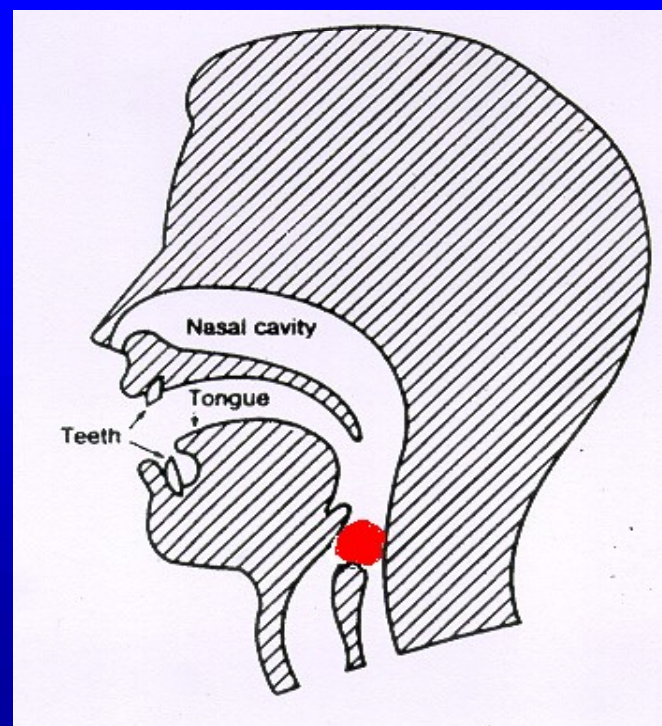
**Flavor Amplitude**  
**Tobacco Flavor**

## After Taste

**Quality**  
**Quantity**

# Impact

- ◆ Sudden, sharp but very short lived sensation ( ~1 sec. ) when the smoke makes a contact with the back of the throat during inhalation
- ◆ Throat catch, throat hit
- ◆ A good guide to PP, ripeness & side



# Impact Scale

<u>Scale</u>	<u>Description</u>
--------------	--------------------

0 - 0.5	Not Detectable
---------	----------------



1 - 1.5	Just Perceptible
---------	------------------



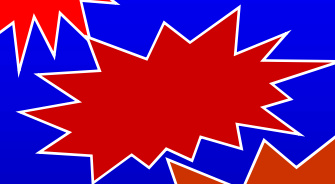
2.0 - 2.5	Slight Intensity
-----------	------------------



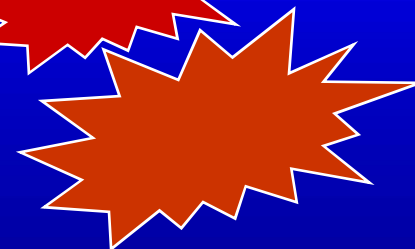
3.0 - 3.5	Moderate Intensity
-----------	--------------------



4.0 - 4.5	Strong Intensity
-----------	------------------

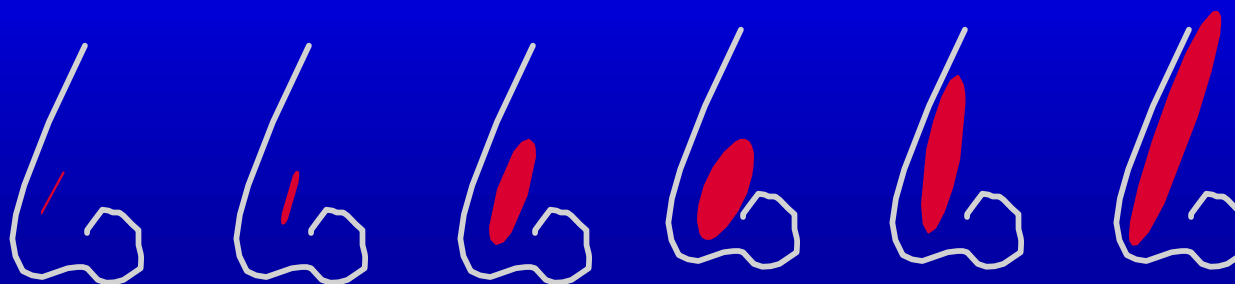


5.0	Very Strong Intensity
-----	-----------------------



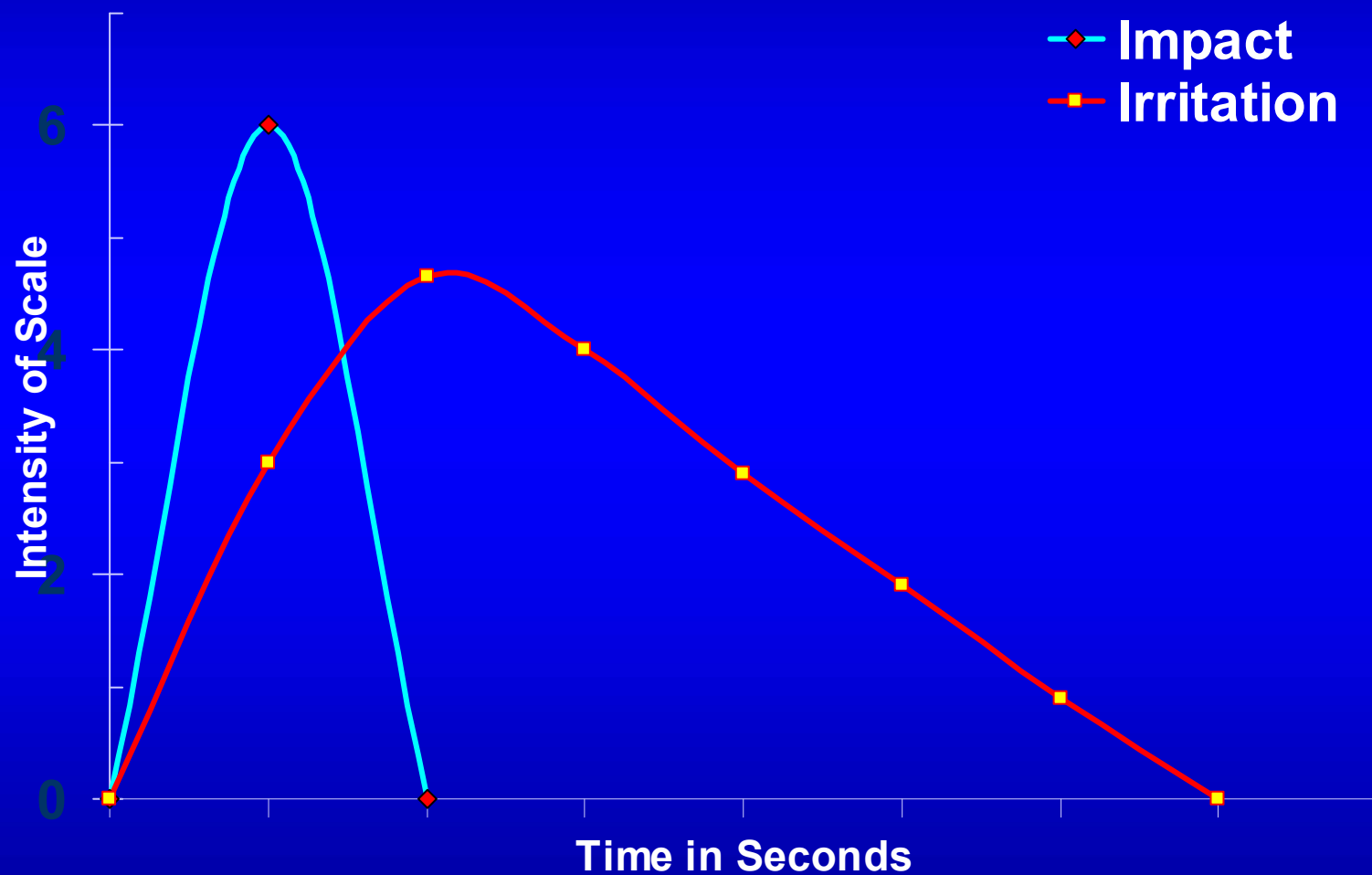
# Irritation

- ◆ Irritation is a more persistent sensation than Impact in which the intensity builds up, often rapidly to a maximum and gradually dies away
- ◆ This sensation usually lasts for several seconds & the term irritation covers such descriptors as hotness, prickling, tingling etc. Perceived in mouth, throat & nose
- ◆ The persistent prickly, scratchy hot , tingling and burning sensation which is noticed when smoke is exhaled through the nose



———— Same effort -- More irritation —————→

# Impact & Irritation



# Flavour Amplitude

- ◆ Total amount of flavour present in a cigarette
- ◆ Overall intensity of flavour irrespective of the type of flavour
- ◆ A good guide for PP





# Burley – Basic Descriptions Of “SIDES”

## Buff Side

- Thinner body
- Greater fill value
- Lower side of Burley character
- Harshness and off taste high

## Tan Side

- Thin to medium bodied
- Lesser fill value compared to BUFF
- Well balanced Impact and less off taste

## Red Side

- Medium to heavy body
- Lowest in fill value
- High in Nicotine content



# Burley – Degrees Of Ripeness

## Offside – GL, GF

GL – Green, Yellow / Medium bodied

GF – Tan, Red / Heavy bodied

- Unripe and immature
- Close grain, slick
- Smoke – low in burley character, high in immature off taste

## Mature

- Soft natured with significant elasticity
- Negligible % of injury / blemish
- Bodied when compared to over ripe and ripe

## Ripe

- Low / medium level of injury
- Thin to medium bodied

## Over Ripe

- Thin bodied with high fill value
- Injury / damage, more pronounced



# Case Study – Group Exercise

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  - Grade should be ripe, orange with Nicotines around 2.5 % and sugars around 14 %.
  - Grade can take a little bit mix of ripeness
  - Grade should be thin to medium in body
  - Grade should smoke with medium impact
  - Give the GLC blend and name the grade in BAT language
- ◆ **GRADE = X2M / O2M**
- ◆ **GREEN BLEND = XOA/XOC/XOF**



# USDA Grading System