



ARVALIS  
Institut du végétal



# Qualidade dos trigos franceses 2015

**ARVALIS**  
Institut du végétal

  
FranceAgriMer



# Inquérito sobre a qualidade da colheita francesa: metodologia

- ❑ Parceria FranceAgriMer / ARVALIS - Institut du végétal
- ❑ Unidades dos colectores representativos da colheita nacional (tamanho, situação geográfica, ...)
  - Trigo mole : 267 unidades e 589 amostras (sem o trigo pasteleiro)
  - Trigo duro : 93 unidades e 152 amostras
- ❑ Recolhas `entrada dos silos pelos agentes da FranceAgriMer antes da secagem e limpeza eventuais
- ❑ Análises realizadas pelos laboratórios FranceAgriMer e ARVALIS – Institut du végétal, certificados pelo COFRAC em conformidade com a norma NF em ISO 17025



# Retour sur la campagne 2014-2015



Sementes      Afilhamento      Espiga 1 cm      1 nó      2 nós      Saída Última folha      Inchamento      Espigamento      Floração      Enchimento



## Outono:

- Temperaturas amenas
- Chuvas moderadas
- Levantamentos rápidos

## Inverno :

- Temperaturas amenas
- Chegada tardia do gelo
- Afilhamento precoce
- Fase espiga 1 cm mto próxima das médias plurianuais

## Primavera :

- Episódios de chuva por sequência
- Períodos secos e ventosos
  - Boa valorização dos adubos azotados na maioria dos casos
- Sem frio tardio
- Doenças discretas

## Enchimento e maturidade:

- Radiações importantes
- Seca crescente
- Calor a partir de 25/06
- « Escalda » tardia
  - Estragos limitados
- Solos secos
  - Mineralização por vezes fraca e absorção difícil
- Bom PMG
- Diluição das proteínas

- Teor de proteínas próximo de 2014 com rendimentos muito superiores
- Características físico-químicas (TCH, PS) de boas a muito boas

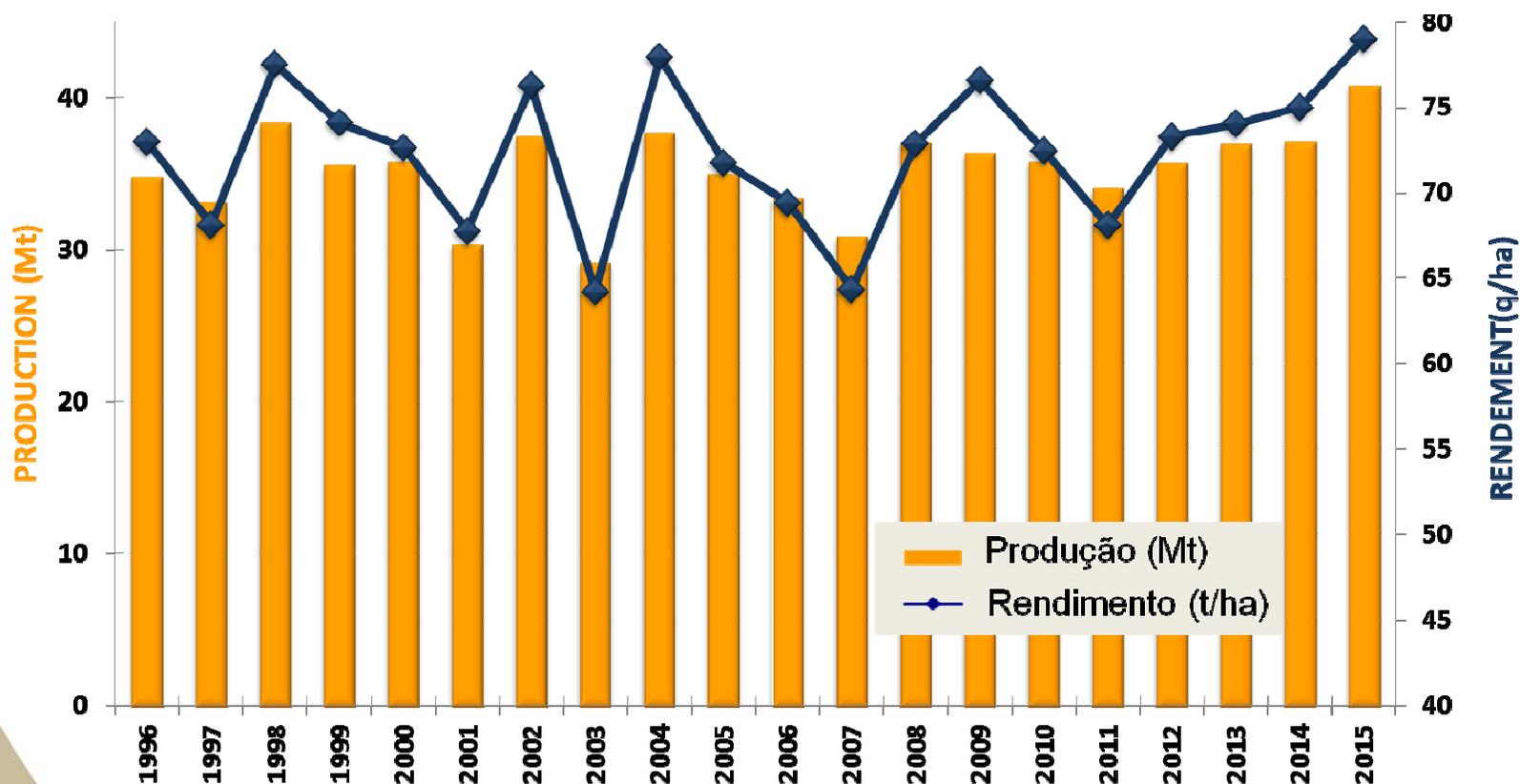
- 
- 1. Trigo mole**
  - 2. Trigo duro**



## Uma oferta francesa sempre importante : produção de 40,7 Mt

A1

- Aumento das superfícies : 5,2 Mha
- Rendimentos muito elevados: 79,0 q/ha



## Diapositive 6

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**A1**

MAJ graph

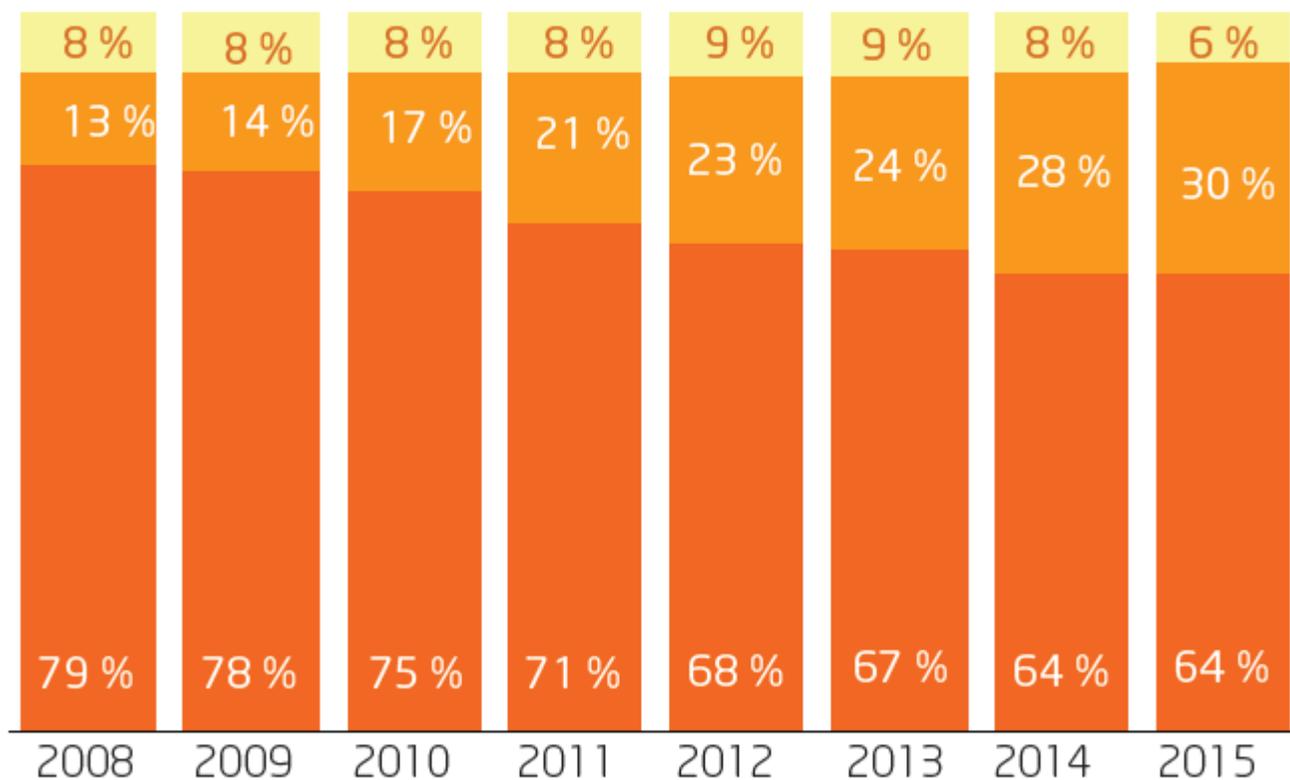
Administrateur; 18/09/2015



# 94% das superfícies semeadas com trigos panificáveis

Classification Arvalis des blés tendres  
(en pourcentage des surfaces nationales)

Avis Arvalis  
BAU  
BP  
BPS+BAF



Source : FranceAgriMer / Enquête répartition variétale des céréales

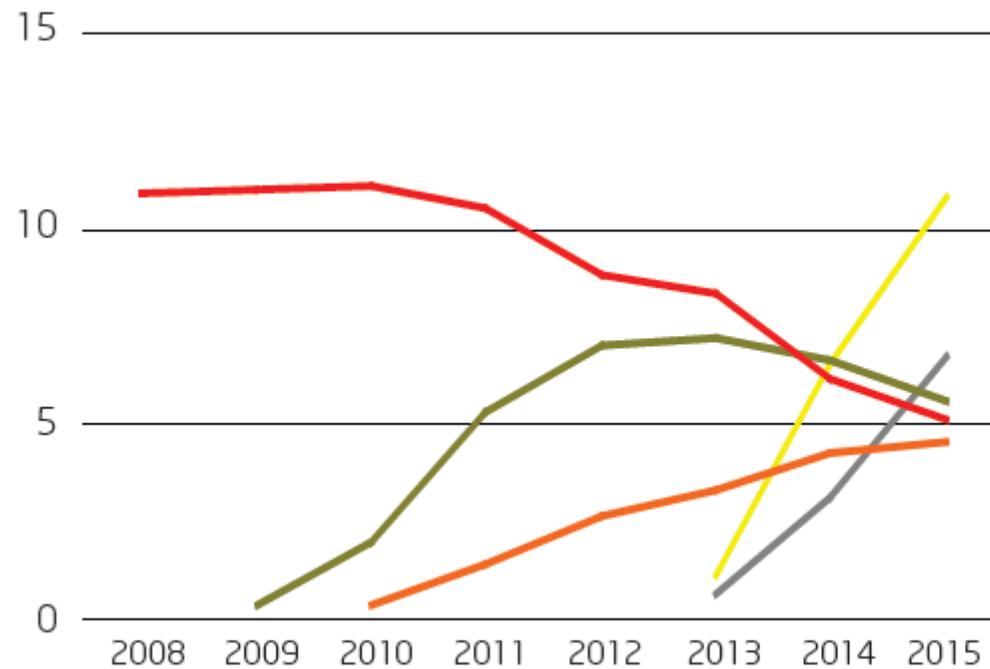


# As cinco primeiras variedades francesas

## Renovação varietal muito rápida

Évolution des 5 premières variétés de blé tendre  
(en pourcentage des surfaces nationales)

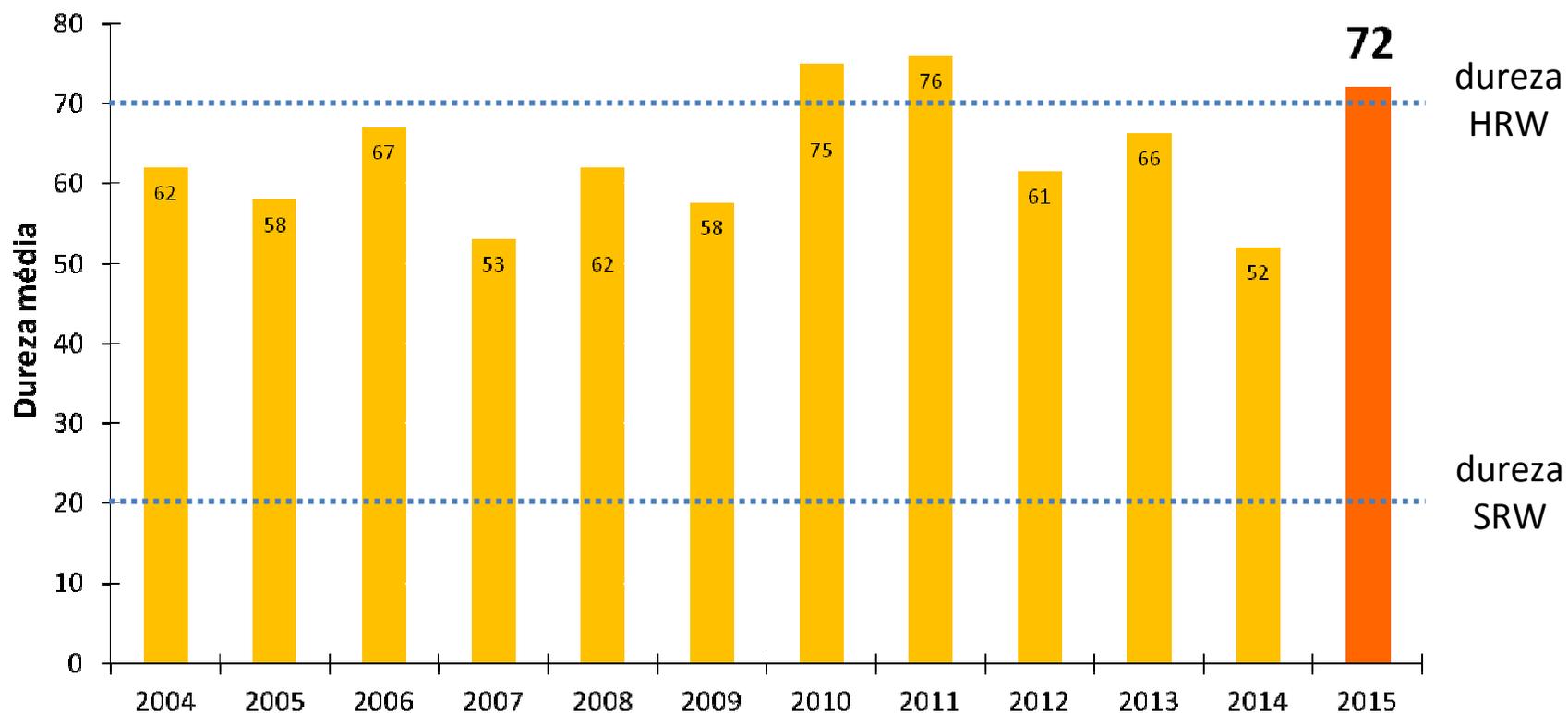
- Rusbisko
- Cellule
- Arezzo
- Apache
- Boregar



Source : FranceAgriMer / Enquête répartition variétale des céréales



## Dureza : os trigos franceses são trigos Medium Hard



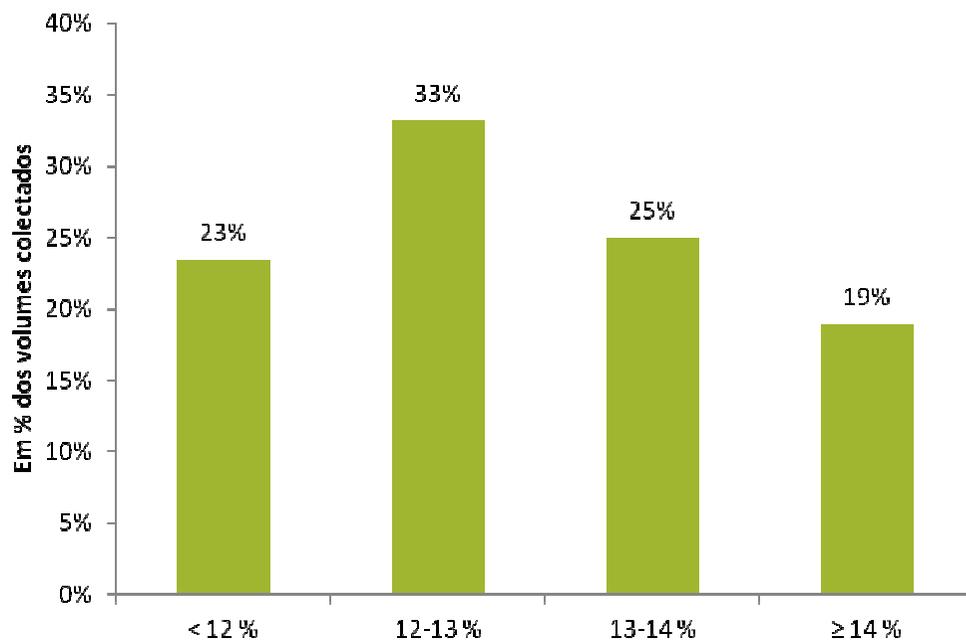
Source : FranceAgriMer / Enquête variétale au champ (jusqu'à 2012) puis Enquête qualité collecteurs



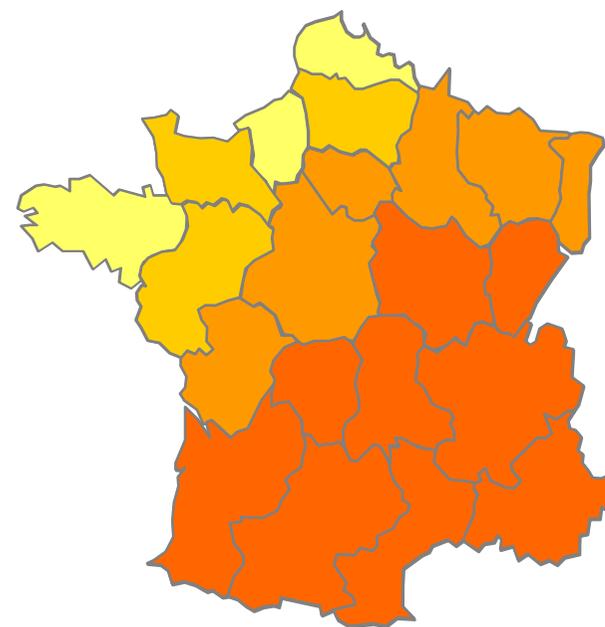
# Teor de água à entrada dos silos de colecta

**12,8 %** em média

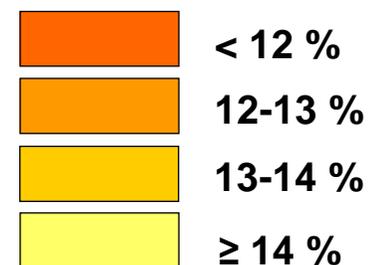
Médias regionais de 10,7 a 14,1 %



Fonte : FranceAgriMer / Inquérito qualidade colectores 2015



**Médias regionais**

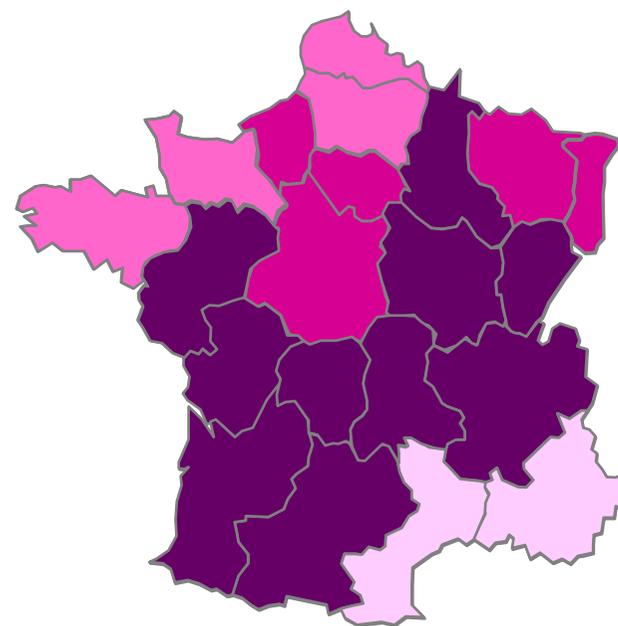
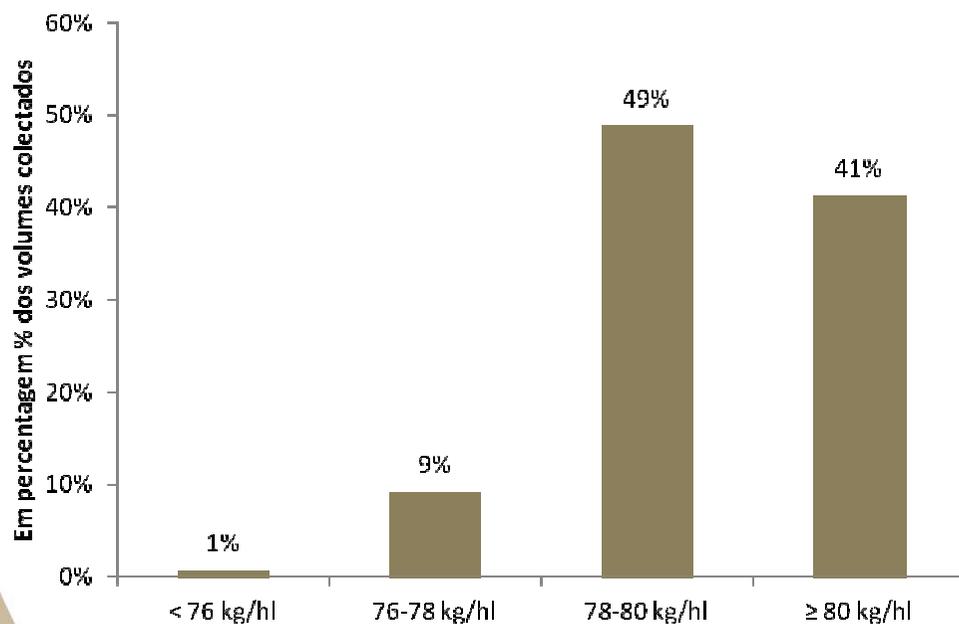




## Peso específico à entrada dos silos de recolha

**79,6 kg/hl em média**

90 % dos trigos > 78 kg/hl



Médias regionais

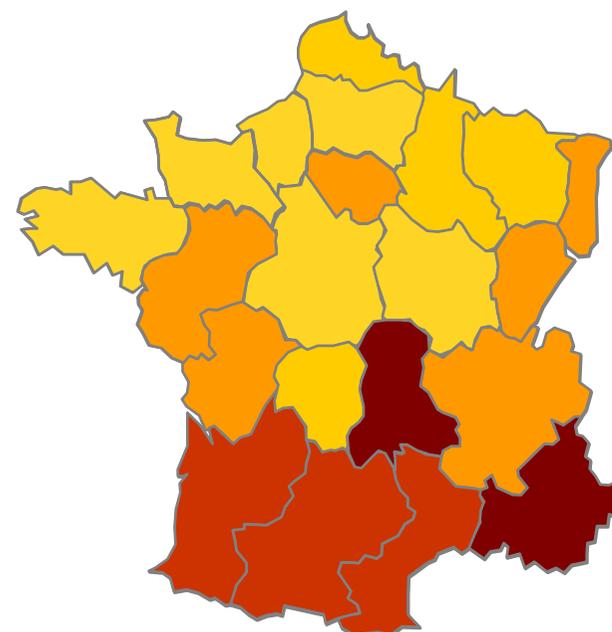
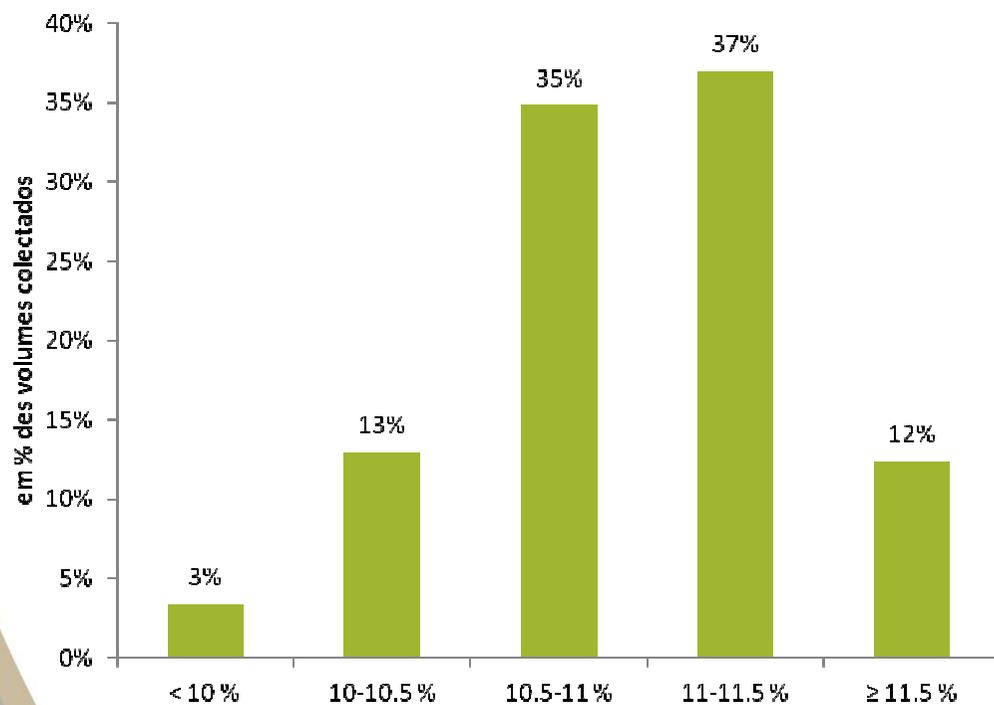


Fonte : FranceAgriMer / Inquérito qualidade colectores 2015

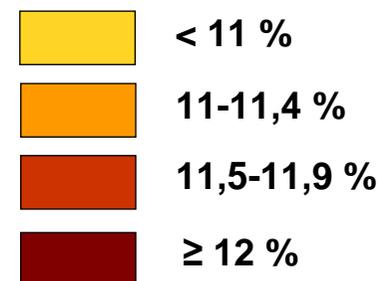


# Teor de proteínas à entrada dos silos de colecta

**11,0 %** em média



**Médias regionais**

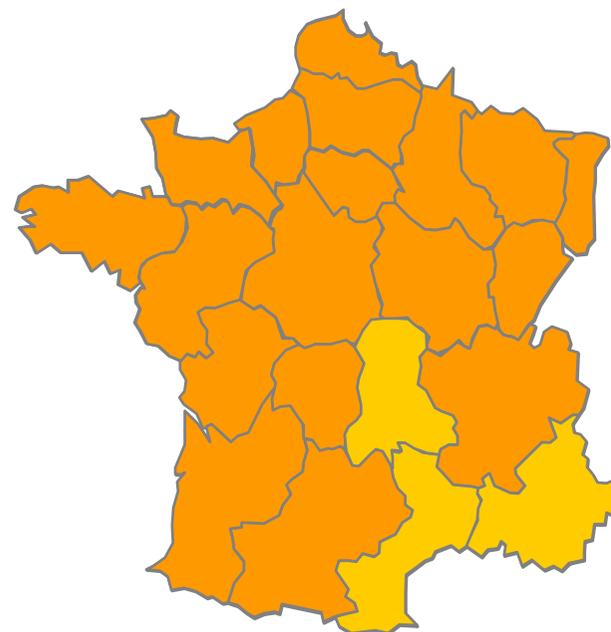
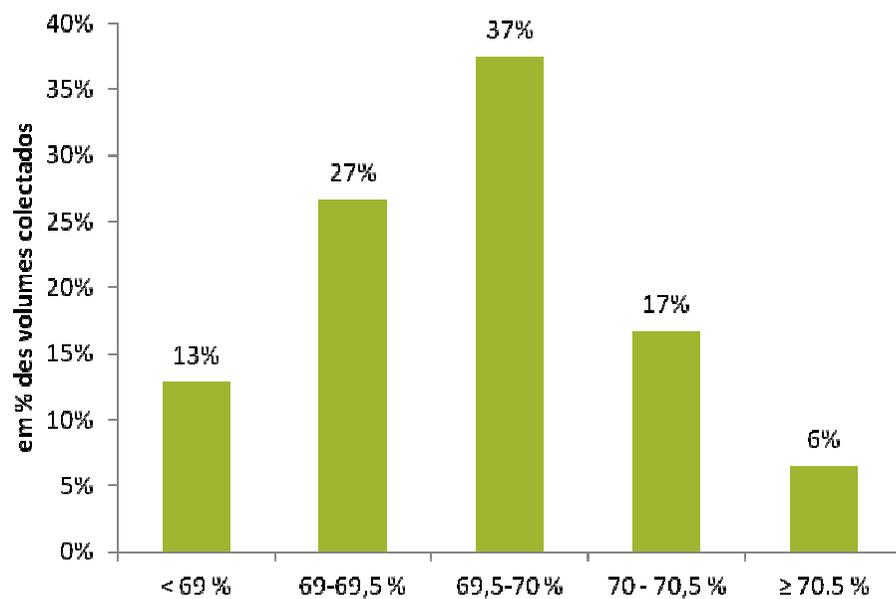


Fonte : FranceAgriMer / Inquérito qualidade colectores 2015



## Teor de amido à entrada dos colectores

**69,6 %** em média  
médias regionais de 67,5 a 70,2 %



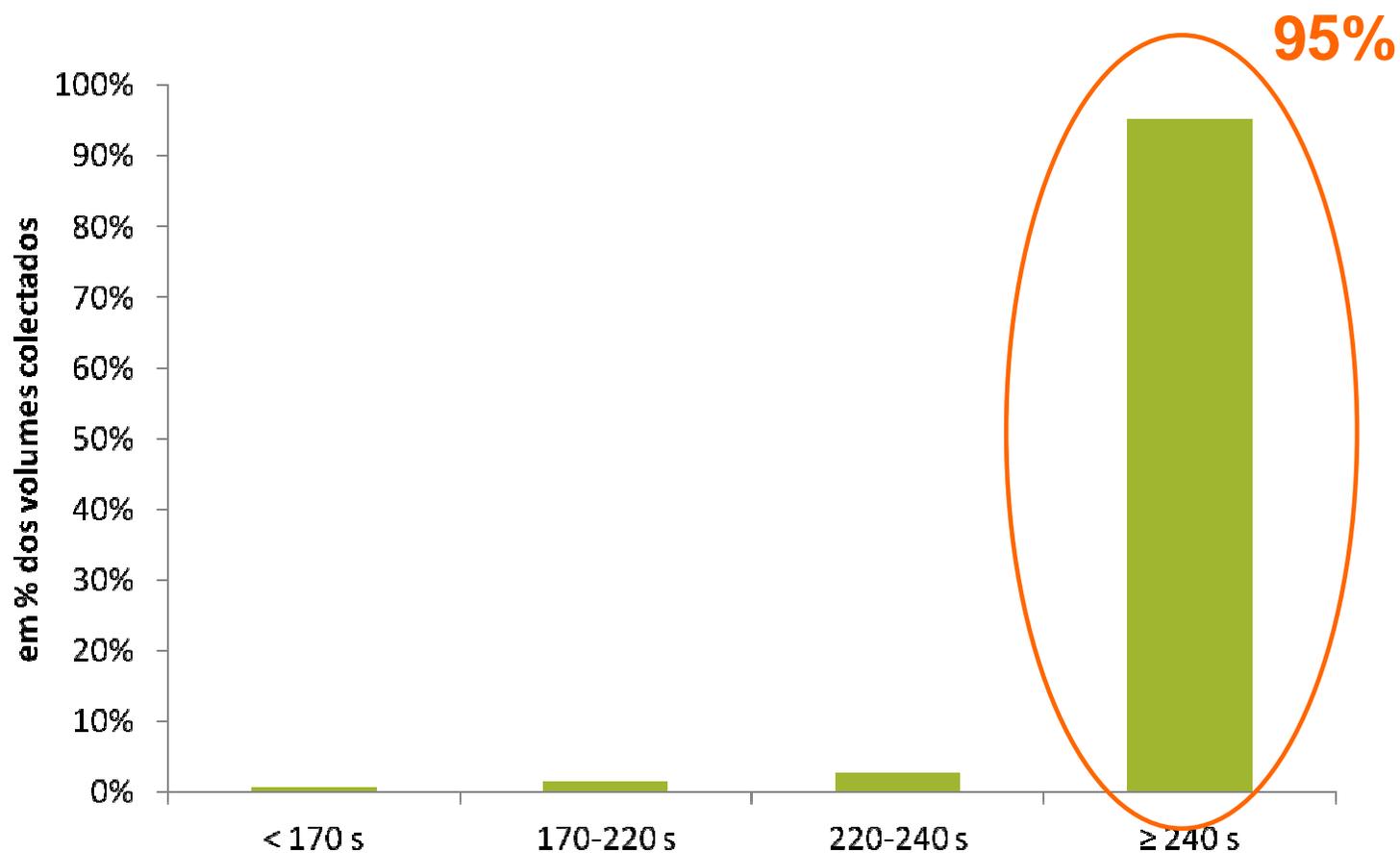
**médias regionais**



Source : FranceAgriMer / Enquête qualité collecteurs 2015



## Índices de queda de Hagberg (Falling Number)



Fonte : FranceAgriMer / Inquérito qualidade colectores 2015

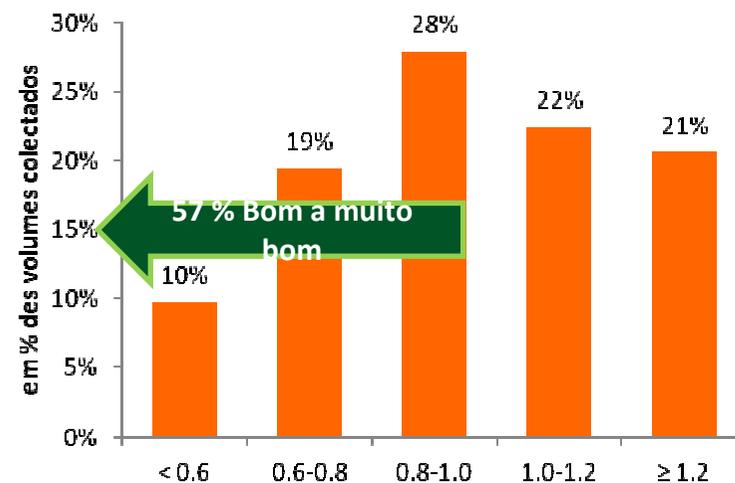
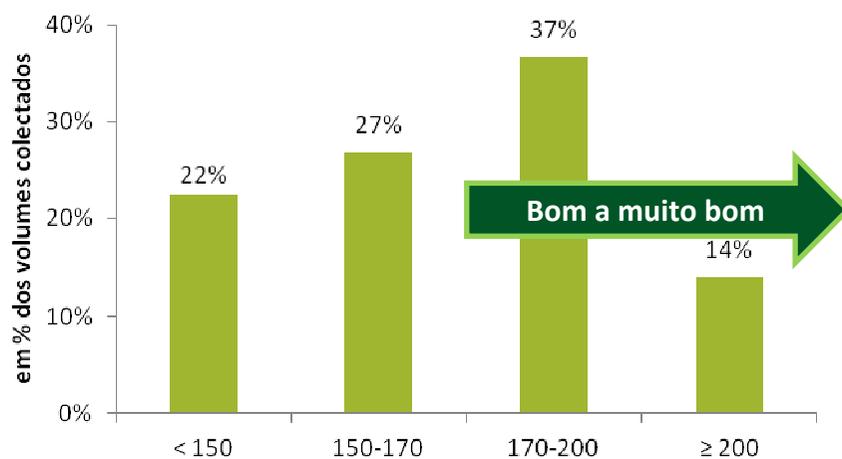


## Força panificadora W e P/L



- W superior a 2014 (média **173**)
- Adaptado a muitas utilizações

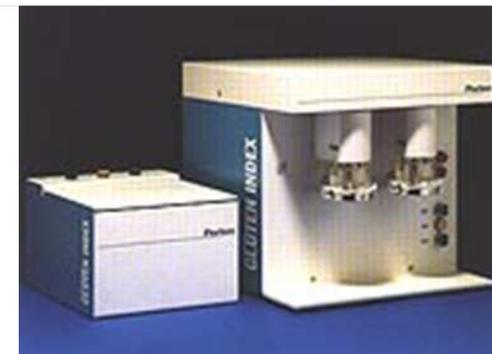
- P/L de **0.98** em média
- Adaptado a várias necessidades



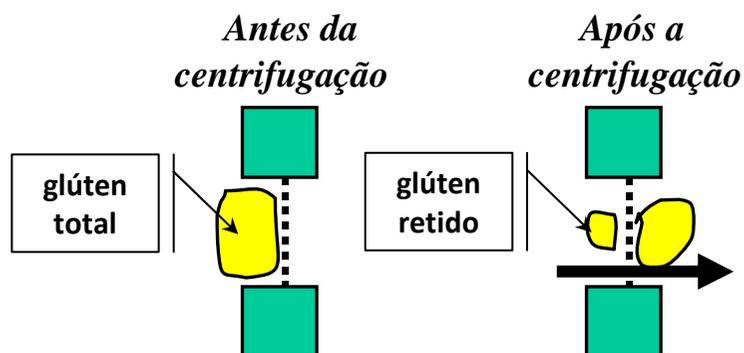
Fonte : FranceAgriMer / Inquérito qualidade colectores 2015



# Glúten Índex

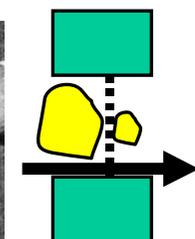
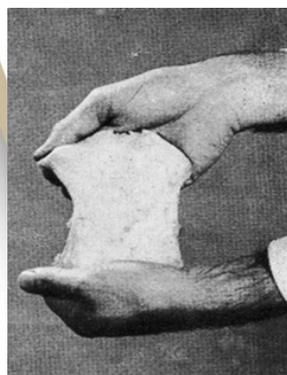


**PRINCÍPIO do Glúten Índex** : mede a proporção de glúten retida numa grelha perfurada após centrifugação

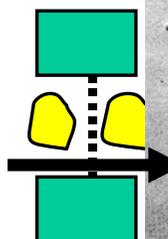
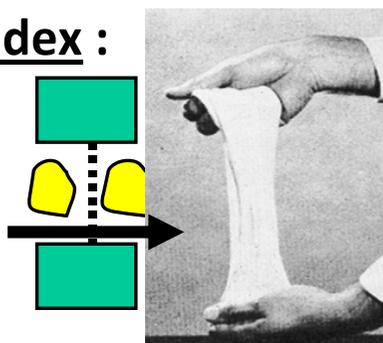


$$\text{Glúten Index} = \frac{\text{glúten retido}}{\text{Glúten total}} \%$$

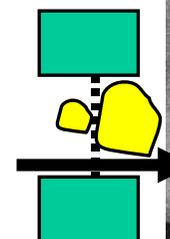
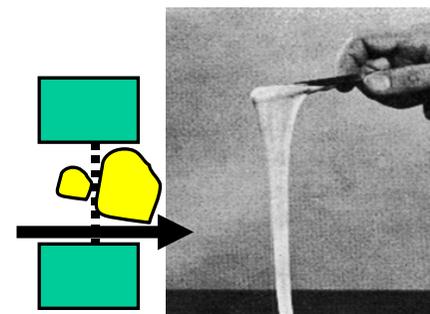
## INTERPRETAÇÃO do Glúten Índex :



GI próximo de 100  
Glúten elástico



GI entre 60 e 80  
Glúten equilibrado

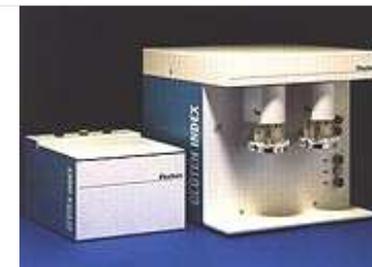
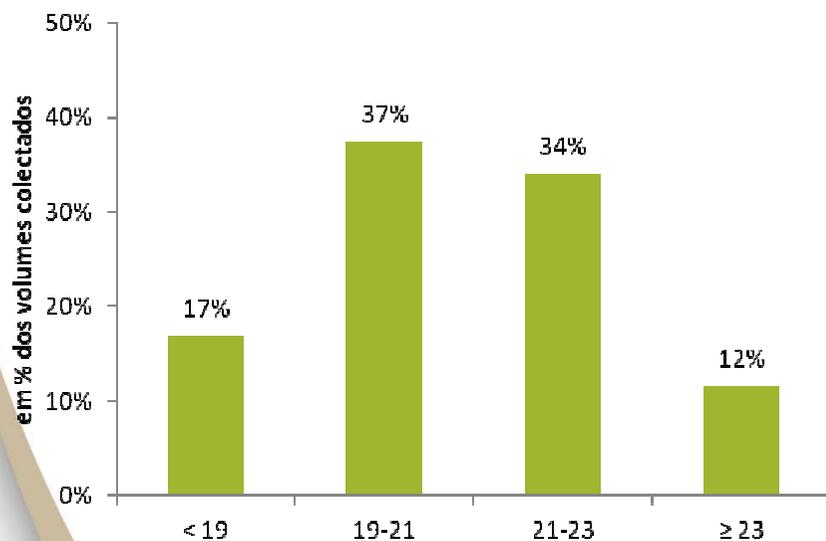


GI inferior a 50  
Glúten extensível



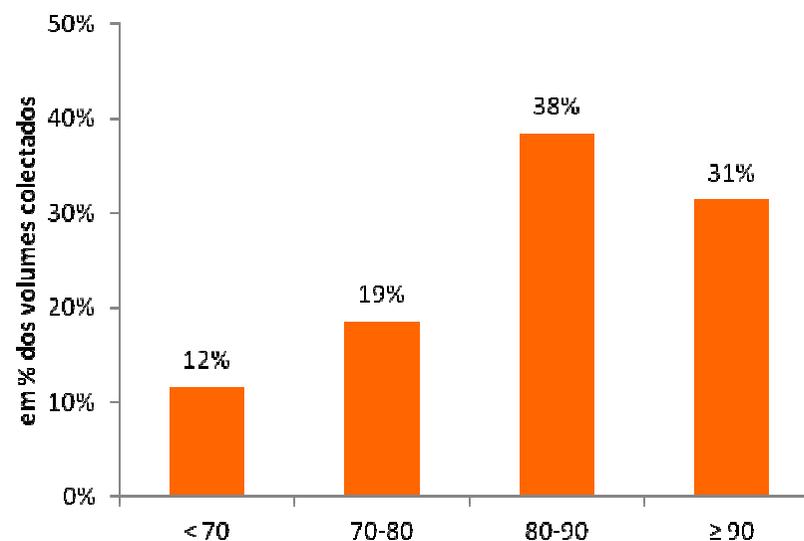
## Teor de glúten húmido

- média de **20.7 %**



## Glúten Index

- média de **83**
- Boa qualidade viscoelástica



Source : FranceAgriMer / ARVALIS - Institut du végétal / Enquête qualité collecteurs 2015



# Comportamento na panificação um teste de panificação certificado (NF V03 – 716)

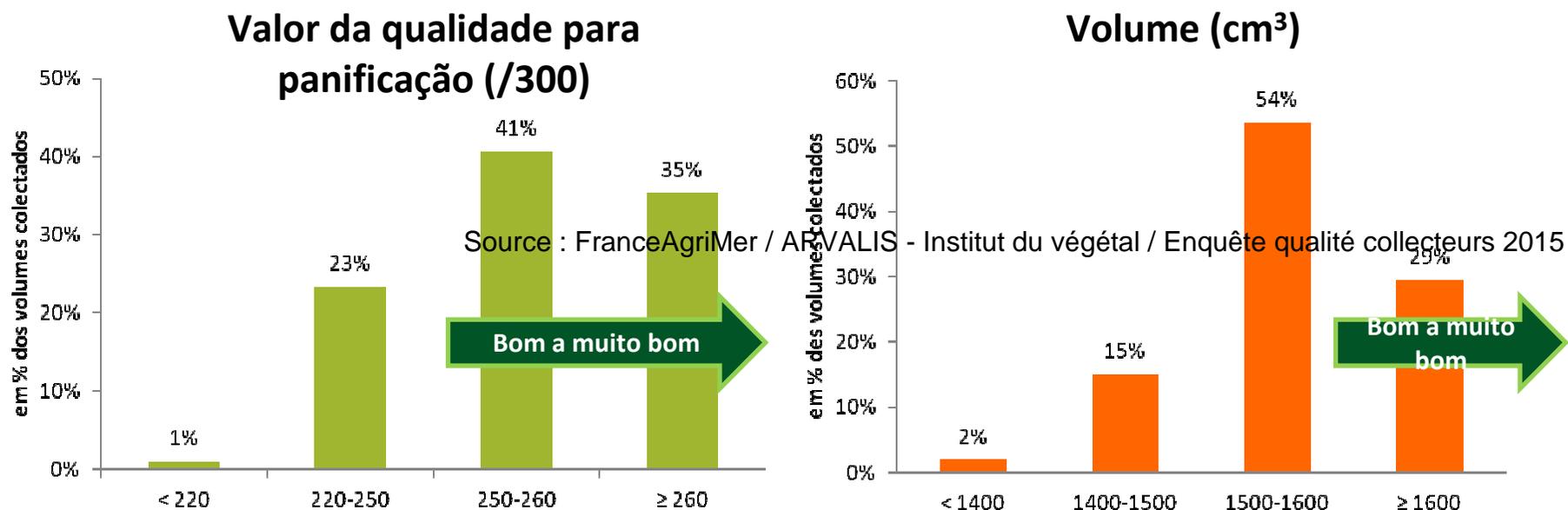
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LISSAGE									× 8.5	-	
COLLANT DE LA PATE									× 8.5	-	
CONSISTANCE											
EXTENSIBILITE									× 8.5	-	
ELASTICITE									× 8.5	-	
RELACHEMENT									× 8.5	-	
<b>POINTAGE</b>											
DETENTE: RELACHEMENT									× 1	-	
<b>FACONNAGE</b>											
ALLONGEMENT									× 8.5	-	
DECHIREMENT									× 8.5	-	
ELASTICITE									× 8.5	-	
COLLANT DE LA PATE									× 1	-	
<b>APPRET</b>											
ACTIVITE FERMENTAIRE									× 8.5	-	
PATE: DECHIREMENT									× 8.5	-	
<b>MISE AU FOUR</b>											
COLLANT DE LA PATE									× 1	-	
TENUE DE LA PATE									× 2	-	
<b>CARACTERISTIQUES DU PAIN</b>											
SECTION									× 1	-	
COULEUR									× 2	-	
EPAISSEUR									× 8.5	-	
CROUSTILLANT									× 8.5	-	
<b>COUPS DE LAME</b>											
DEVELOPPEMENT									× 1	-	
REGULARITE									× 1	-	
DECHIREMENT									× 1	-	
<b>VOLUME</b>											
VOLUME MOYEN									× 1	-	
MASSE MOYENNE									× 1	-	
<b>CARACTERISTIQUES DE LA MIE</b>											
COULEUR									× 1	-	
TEXTURE									× 1	-	
SOUPLESSE									× 1	-	
ELASTICITE									× 1	-	
COLLANT									× 1	-	
<b>ALVEOLAGE</b>											
REGULARITE									× 1	-	
EPAISSEUR									× 1	-	
<b>ODEUR</b>											
									× 4	-	

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 Y01 × C011C02Y - M010100C #30  
 Y01 × C011C02Y - E010100C #70  
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## Comportamento na panificação francesa

Notas totais que vão de boas a muito boas em mais de 76 % dos casos testados



Os pontos mais notáveis:

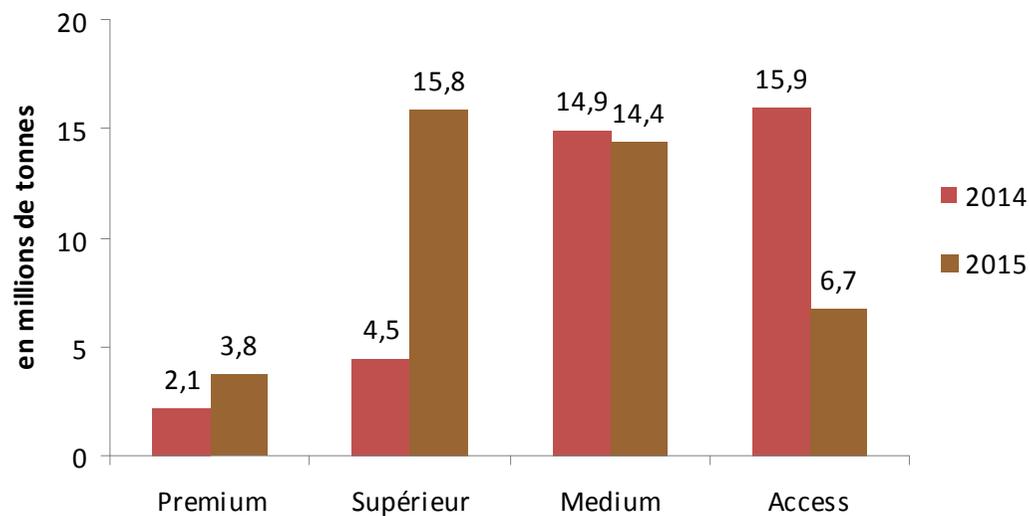
- Hidratação satisfatória das massas
- Massas equilibradas ao serem trabalhadas
- Belo aspecto do pão com golpes de lâmina bem desenvolvidos
- Volumes médios





# Classificação dos trigos 2015

Classes	Proteínas	W	Peso específico	Índice de queda de Hagberg	Repartição nacional
<b>Premium</b>	≥ 11,5 %	≥ 170	≥ 77	≥ 240	<b>9 %</b>
<b>Superior</b>	≥ 11 %	não especificado	≥ 76	≥ 220*	<b>39 %</b>
<b>Medium</b>	≥ 10,5 %	não especificado	não especificado	≥ 170*	<b>35 %</b>
<b>Access</b>	Especificado no contrato	não especificado	não especificado	não especificado	<b>17 %</b>

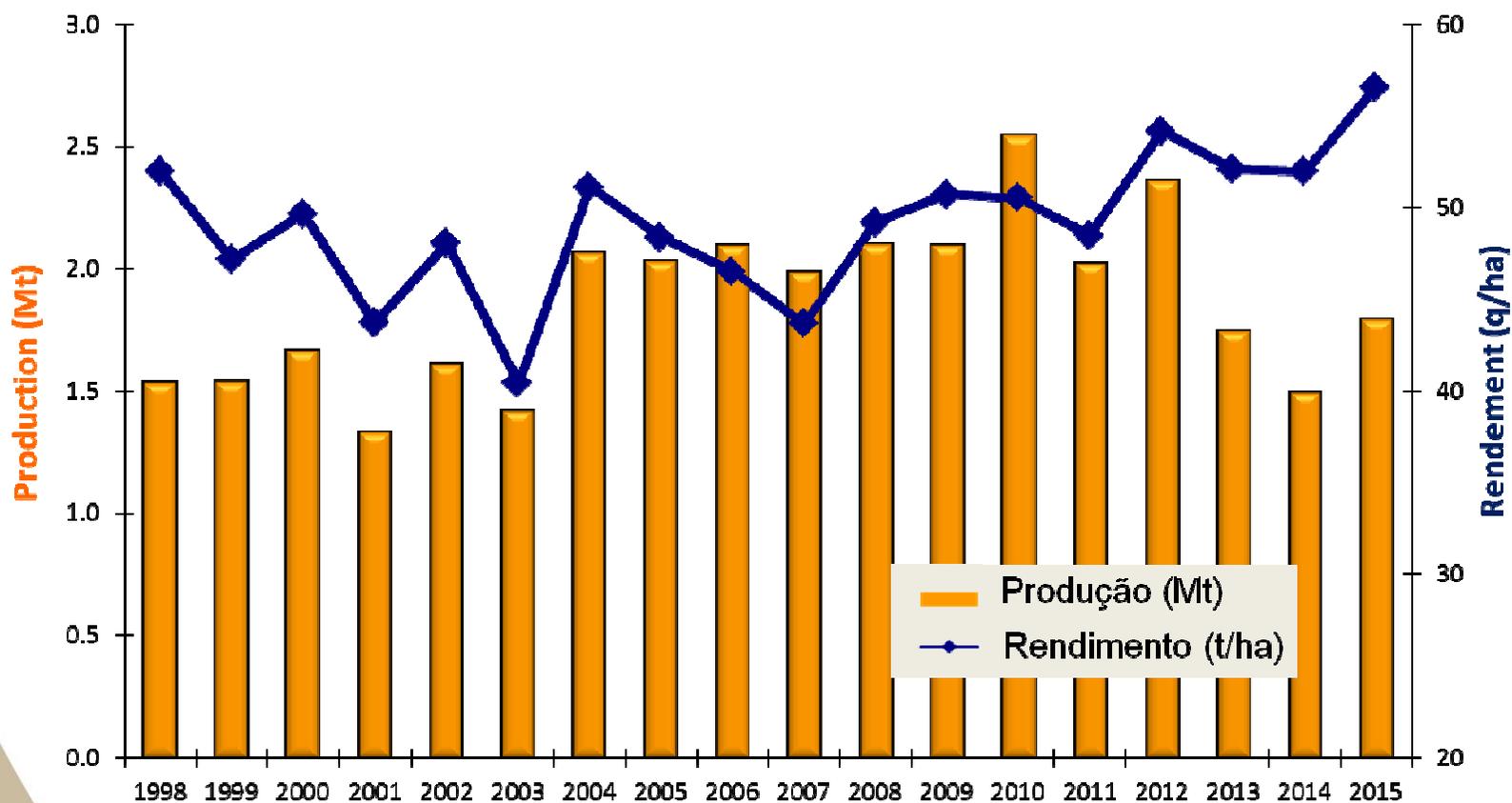


- 
- A photograph of a wheat field. In the foreground, a single wheat ear is shown in detail, with its golden-brown grains and awns clearly visible. The background shows a vast field of similar wheat plants stretching towards a clear blue sky. The overall scene is bright and sunny, suggesting a late summer or early autumn setting.
1. Trigo Mole
  2. Trigo Duro



## Uma produção em alta de 1,8 Mt

- Aumento das superfícies: **+12 %**
- Aumento do rendimento: **+ 9 % a 56,6 q/ha**





## Quatro regiões de produção de trigo duro

*estimativas  
produção 2015*

**FRANÇA**  
**1,82 M de toneladas**

**Oeste-Oceano**  
**460 000**  
**toneladas**

**Centro**  
**550 000 tonnes**

Estimativas Agreste  
22/09/2015

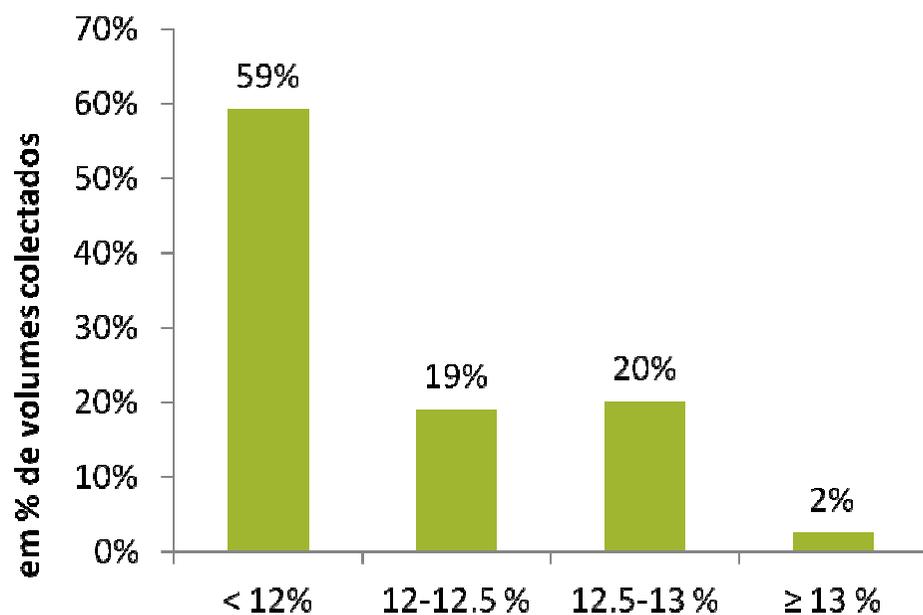
**Sudoeste**  
**530 000**  
**toneladas**

**Sudeste**  
**280 000**  
**toneladas**

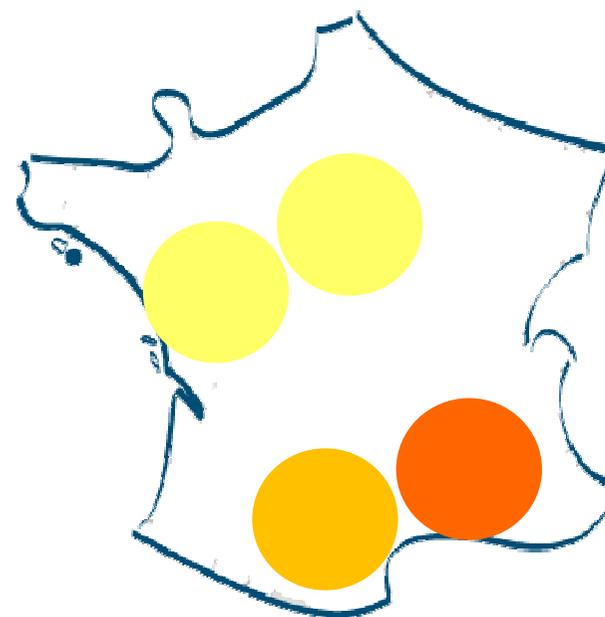


## Teor de água à entrada dos silos de colecta

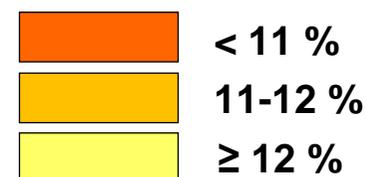
**11,7 %** em média



Source : FranceAgriMer / Enquête qualité collecteurs 2015



**médias regionais**

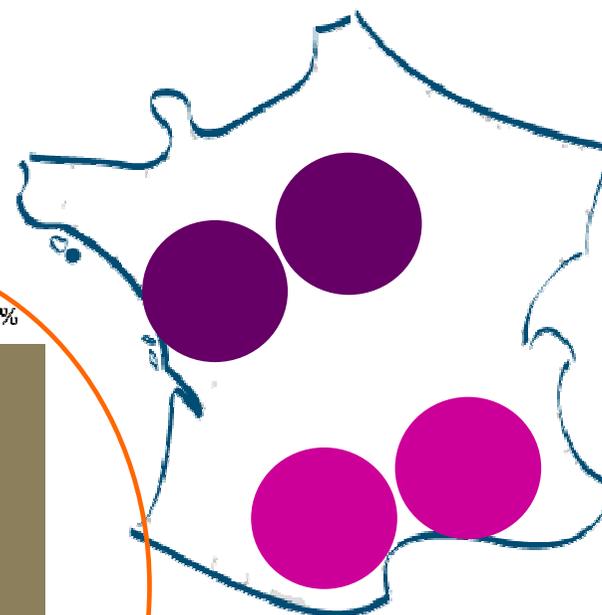
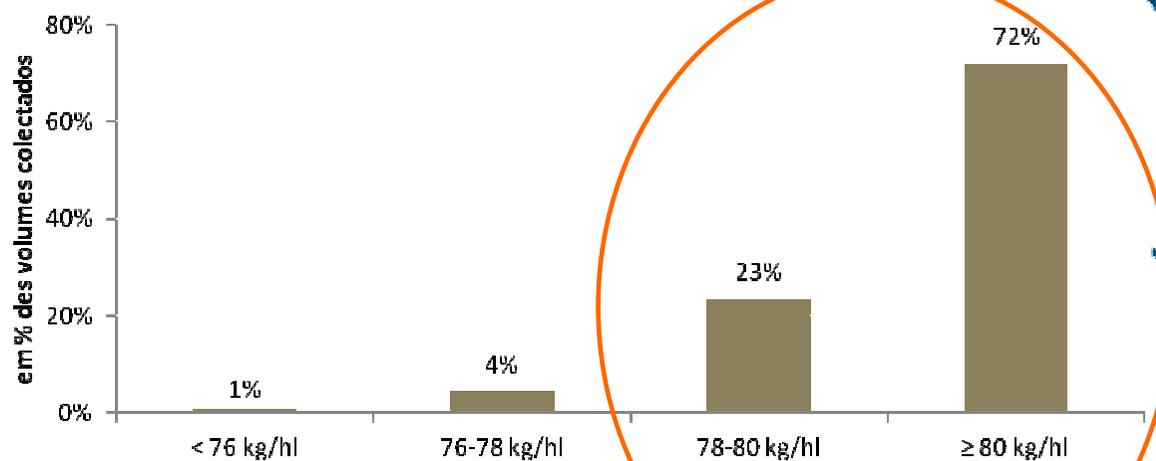




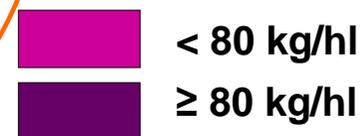
# Peso Específico à entrada dos silos de colecta

**80,3 kg/hl** em média

95 % dos trigos  $\geq$  78 kg/hl



médias regionais

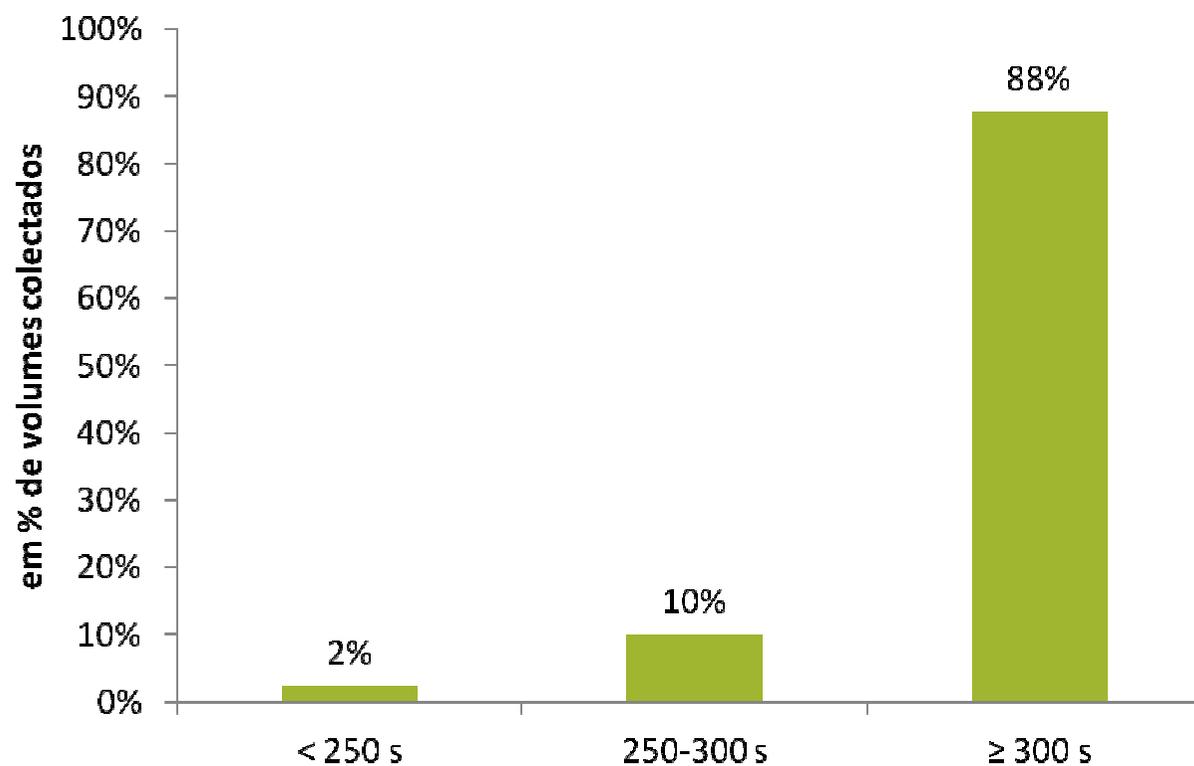


Source : FranceAgriMer / Enquête qualité collecteurs 2015



## Índices de queda de Hagberg

88 % dos trigos acima de 300 segundos



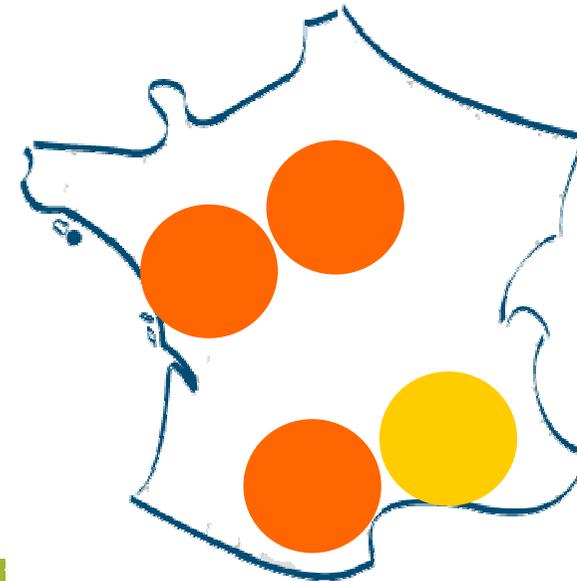
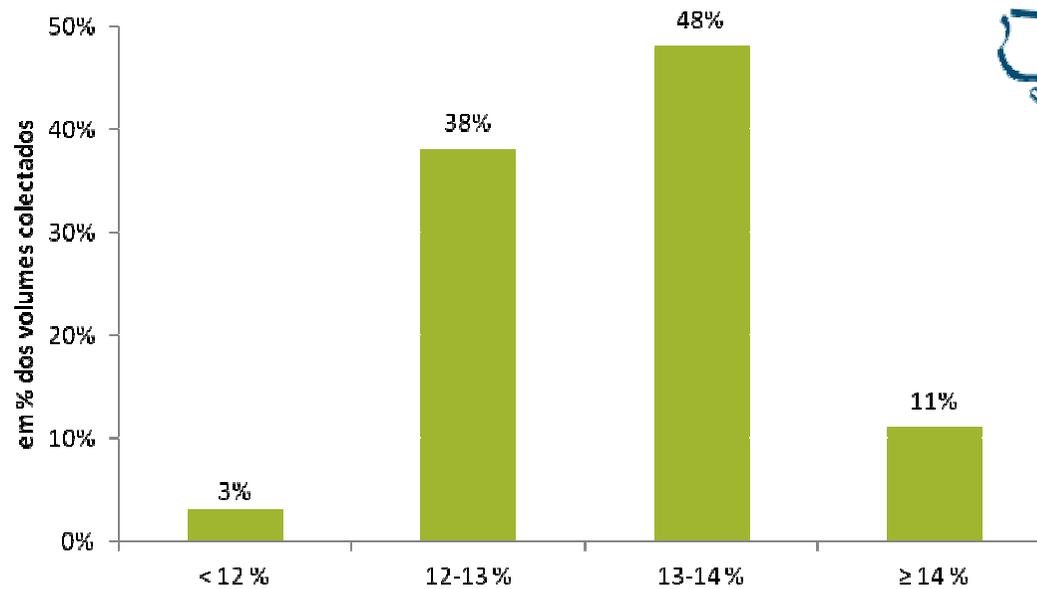
Source : FranceAgriMer / Enquête qualité collecteurs 2015



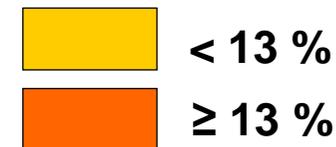
# Teor de proteína à entrada dos silos de colecta

**13,2 %** em média

59 % dos trigos > 13 % em média



médias regionais

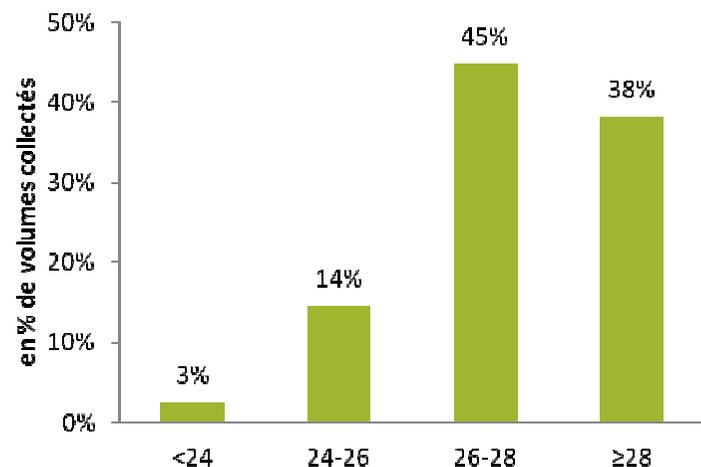


Source : FranceAgriMer / Enquête qualité collecteurs 2015

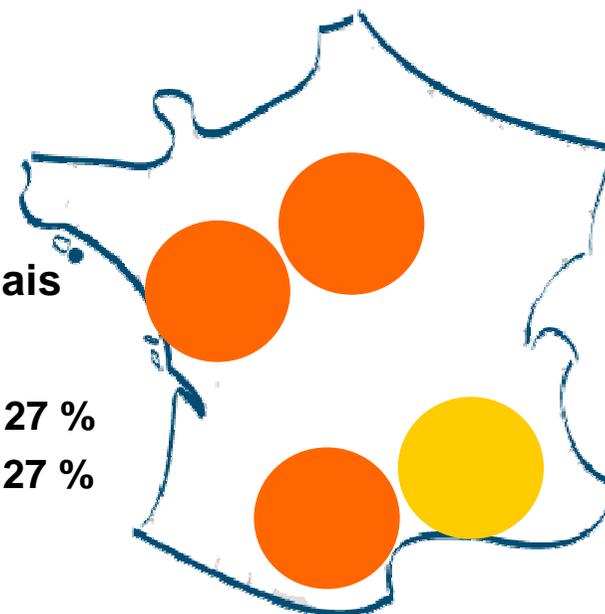
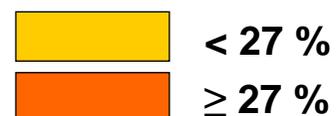


# Glúten húmido, Glúten Índex

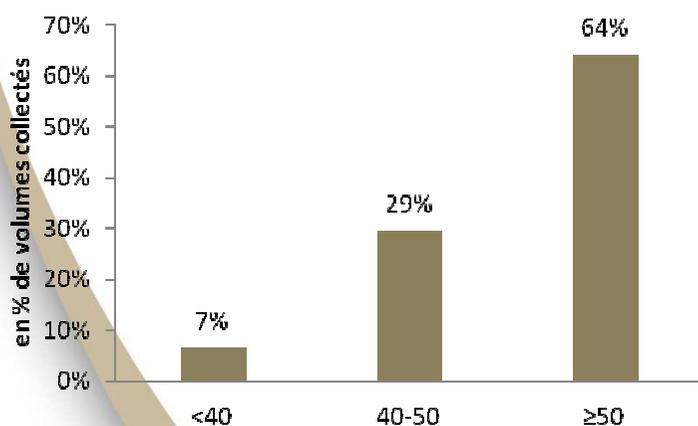
Glúten húmido : **27.7 %** em média



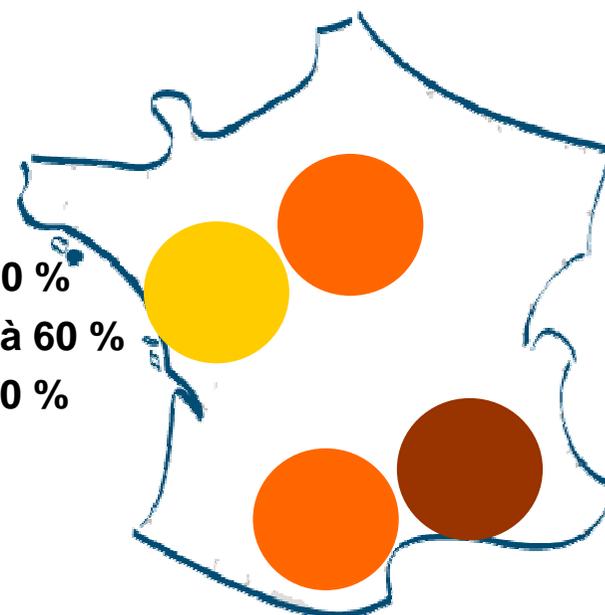
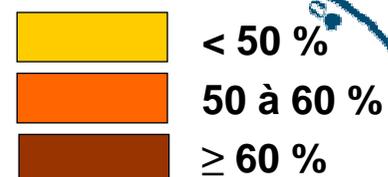
médias regionais



Glúten índex : **55** em média



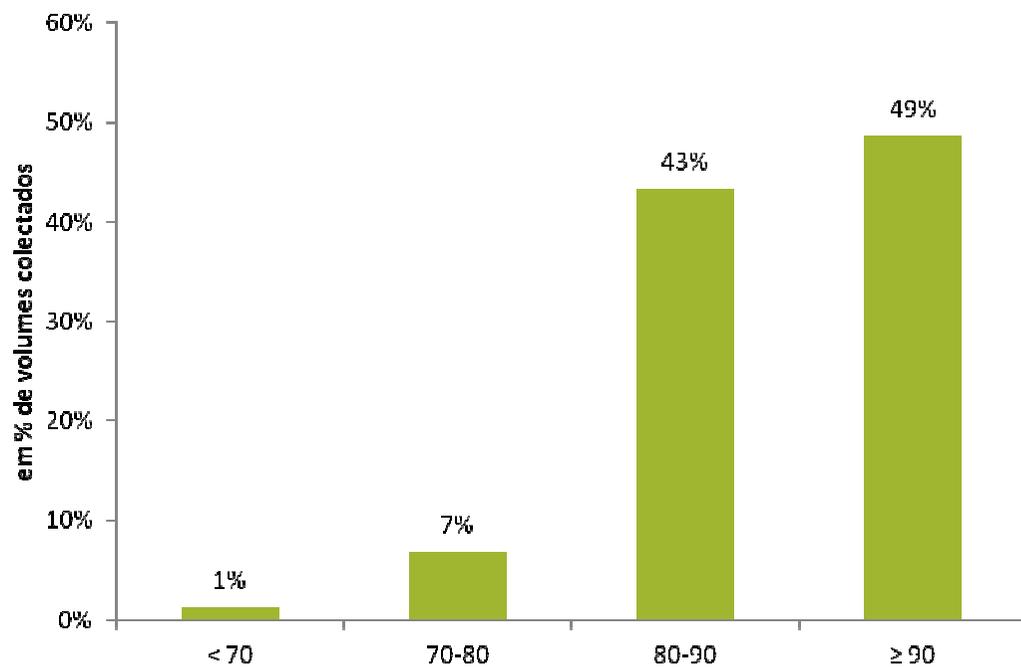
médias regionais



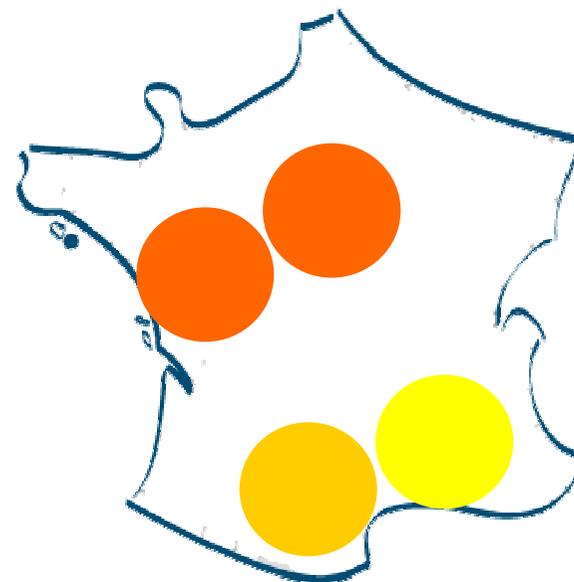


# Vitrosidade

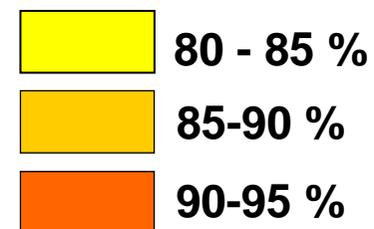
**89 % em média**



Source : FranceAgriMer / Enquête qualité collecteurs 2015



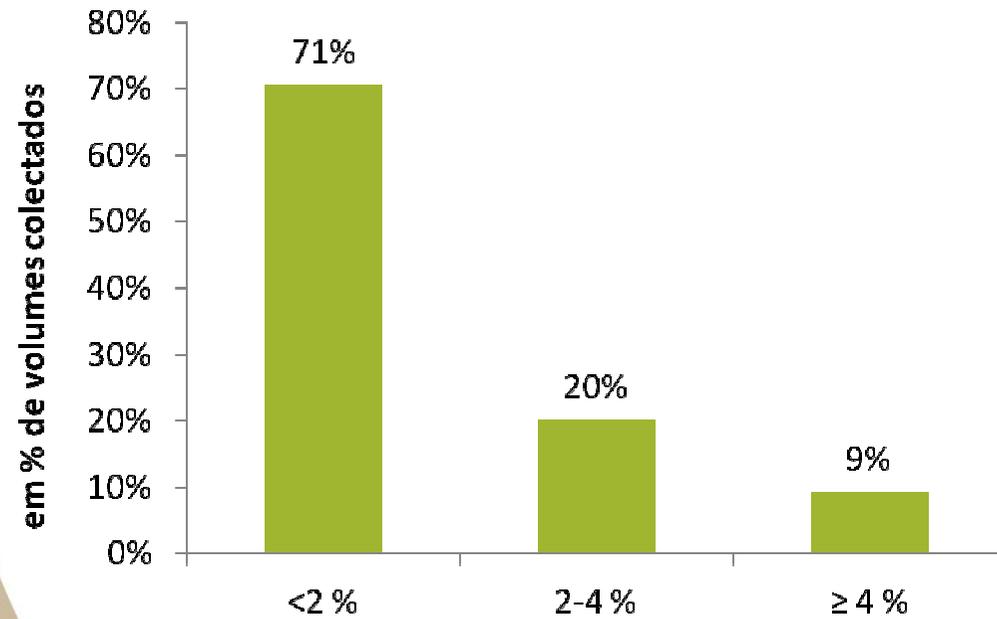
**Moyennes régionales**



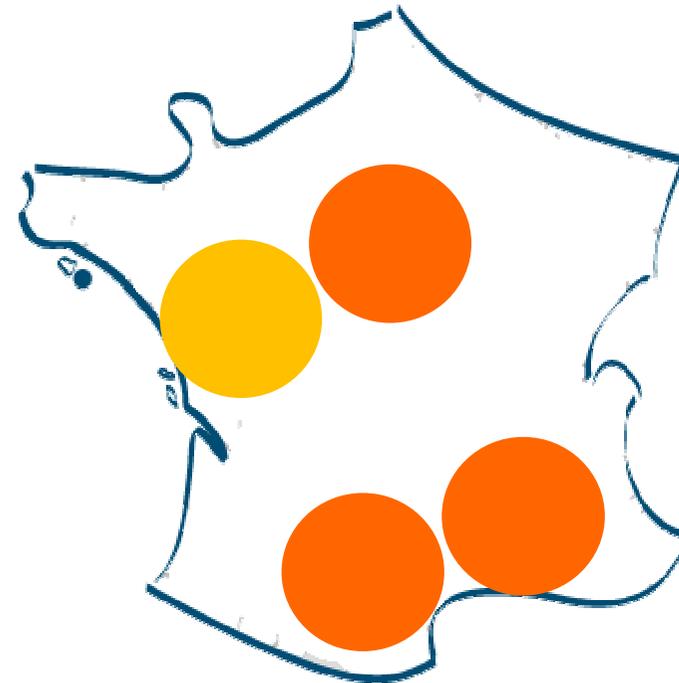


# Manchas

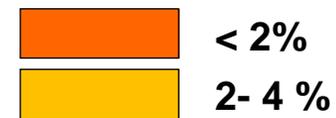
**1.5 %** em média



Source : FranceAgriMer / Enquête qualité collecteurs 2015



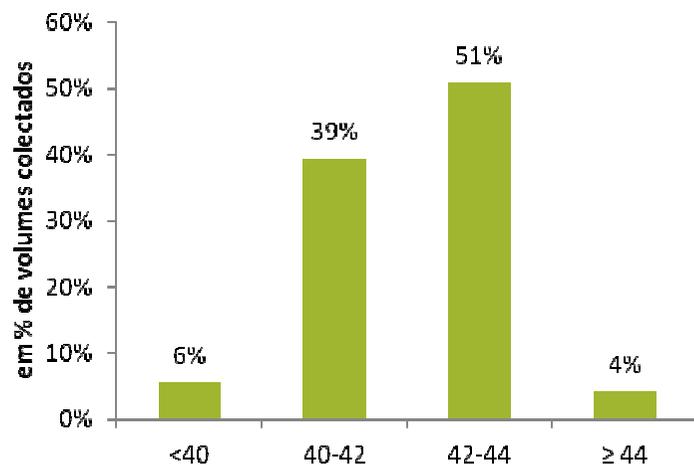
médias regionais



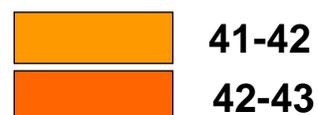


## Cor

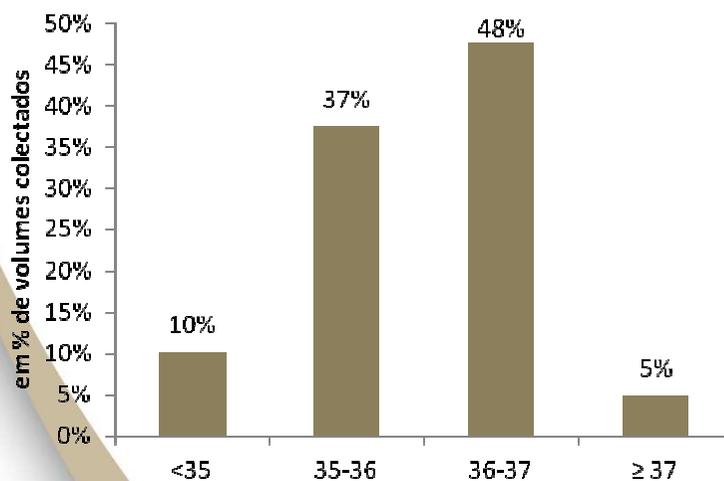
Índice de amarelo: **41,8** em média



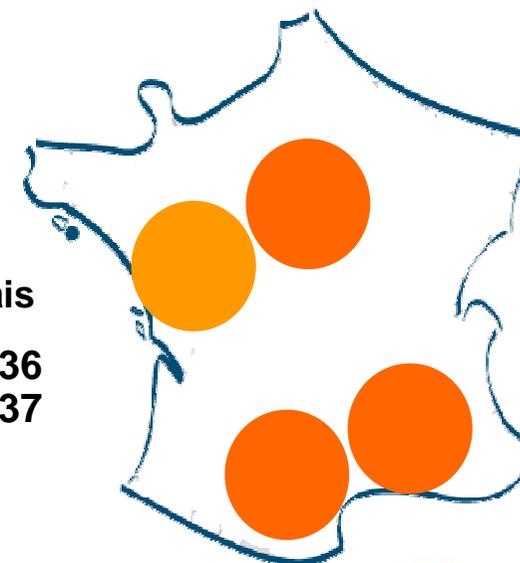
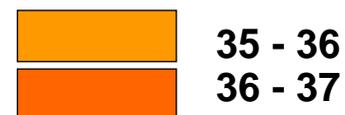
médias regionais



Índice de castanho : **36** em média



médias regionais





ARVALIS  
Institut du végétal

Obrigada pela vossa atenção