



Department  
for Environment  
Food & Rural Affairs

# Cereal populations – relaxing EU rules to allow marketing of seed

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# What are cereal populations?

Composite cross populations are controlled crosses of about 10 or more varieties to give a genetically diverse alternative to pure line varieties



# What are cereal populations?

- Genetically diverse – increasingly so with the number and range of the parent varieties
- Every seed and plant is different
- Populations are **not** varieties or mixtures of varieties



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# Background

- Initiated by ORC through a research proposal to Defra
- Resulted in breeding several wheat populations and three years of trials
- Follow up five year project jointly funded by Defra and a range of industry partners
- Encouraging results and interest in commercialisation

# Why grow populations?

- More resilient than varieties
- Greater capacity to buffer against adverse environmental conditions and diseases
- Possible long-term local adaptation





# Benefits of populations

In trials:

- Wheat populations have higher yield than mean of parent varieties
- More consistent performance from year to year



# Challenge to legislation

Seeds legislation founded on concept of morphologically identifiable and uniform varieties

Seed of populations cannot be sold without changing the legislation

**COUNCIL DIRECTIVE**  
**of 14 June 1966**  
**on the marketing of cereal seed**  
**(66/402/EEC)**  
**(OJ P 125, 11.7.1966, p. 2309)**




# Objectives of legislation

Quality assurance of marketed seed – official certification

Facilitate progress in plant breeding – variety testing and registration



## Winter wheat 2014/15 Market options, yield and

RECOMMENDED		NEW		C		C		NEW	
		Skyfall	Crusoe	Gallant	Solstice	Cubanita	Chilton		
End-use group		nabim Group 1				nabim G			
Scope of recommendation		UK	UK	UK	UK	UK	UK		
Fungicide-treated grain yield (% treated control)									
United Kingdom (9.9 t/ha)		102	98	96	96	102	100		
East region (10.1 t/ha)		101	98	98	94	101	99		
West region (9.9 t/ha)		103	99	99	96	105	100		



# Adapting the legislation

Need sufficient assurance of seed quality, eg:

- Germination

- Weed seeds

Need sufficient assurance of identity

- Traceable to original breeding of population

- Traceable through each year of seed production

# Adapting the legislation



March 2014

Change to EU legislation for 5 years, allowing marketing of populations, with conditions

20.3.2014

EN

Official Journal of the European Union

L 82/29

## COMMISSION IMPLEMENTING DECISION

of 18 March 2014

on the organisation of a temporary experiment providing for certain derogations for the marketing of populations of the plant species wheat, barley, oats and maize pursuant to Council Directive 66/402/EEC

(notified under document C(2014) 1681)

(Text with EEA relevance)

(2014/150/EU)





# Conditions for marketing

Population must be officially authorised, based on source varieties, breeding method, unique name etc

Seed production under official supervision - crop inspection, sampling, seed testing, labelling

Limited quantities

Trials and surveys to get more information about benefits of populations

Reporting to European Commission

# Summary

Populations are a completely different approach to plant breeding, maximising diversity in crops

Likely benefits in resilience and consistent performance

EU legislation now allows marketing of seed



A photograph of a lush green wheat field. In the foreground, several wheat stalks are in sharp focus, showing their developing grain heads. The field extends towards a dense line of green trees in the background. The sky is a clear, pale blue with a few wispy clouds. The text "Thank you" is centered over the middle of the image.

**Thank you**