The author
Colin West is Executive Director of the Maltsters’ Association of Great Britain.

Further information on the Assured Combines Crops Scheme can be found at www.assuredcrops.co.uk.

The Assured UK Malt scheme covers not only the barley delivered by the farmer or grain merchant, but also every aspect of production through to delivery to the end user. More information on the scheme is included on the AUKM website at www.assuredukmalt.com, which also features case studies on how the scheme is audited and how brewers such as Carlsberg, Shepherd Neame and Adnams benefit from using Assured UK Malt.

Like many malting barley growers in the UK, M. Gibbons and Sons is a family business. Julian Gibbons is one of two brothers who represent the second generation that has farmed the land around Bradley, Hampshire in Southern England for the last 40 years.

Today they have 800 hectares with malting barley taking up around 25 per cent and wheat being the largest crop at around 50%. They also grow oilseed rape and oats, and participate in environmental schemes, such as the UK government’s Entry Level Stewardship scheme. All the grain produced by the farm, including the malting barley, is either farm stored or sent to a local central facility. From there it will either go to malsters who are part of the Assured UK Malt (AUKM) scheme or be exported. As a grower supplying AUKM, Julian is aware of the need to deliver barley to the high standards laid down by the scheme. The simplest way to do this is by participating in one of the UK farm assurance schemes, in this case the Assured Combines Crops Scheme (ACCS). Julian says that participation is an absolute necessity for farmers in the 21st century. “It provides a degree of supplier assurance that is required by all the markets we serve including the flour millers and malsters,” he says, “However, I think the malsters have taken the lead in integrating farm assurance with their own malting assurance scheme.”

There is no part of the growing process which is not touched by farm assurance. Farmers must be able to show that they follow the highest standards including statutory obligations from the planting of seed to the moment the barley leaves the farm. The standards laid down by ACCS cover:

- **Seed** – the grower must either provide details of certification for bought seed or records of farm-saved seed including the qualifications for the person who has treated the seed.
- **Applications of pesticides and fertiliser** – use of crop sprays are subject to detailed regulations including licensing of those who operate the machinery, and regular checks on the machinery itself. Both fertilisers and pesticides are also subject to regulations with regard to their storage.
- **Grain harvesting** – checks must be carried out on the combine harvester.
- **Storage** – detailed provision is made concerning the storage of the grain if it is stored on the farm for...
any length of time. This includes the buildings, rodent, insect and moisture control

- **Transportation** – whether provided by the farmer or by a third party, vehicles used to move barley have to undergo detailed checks

All of this is subject to annual audit, with the farmer having to prove that all the necessary licenses and training are in place, as well as the auditor conducting a visual inspection of the farm and its buildings. Registration requirements apply not just to farmers such as Julian, but also to any advisers that they use.

“We keep detailed computerised records at every stage of the process, as well as retaining samples of all the batches that leave the farm. When malting barley goes from here it takes a ‘passport’ with it that shows all the details and includes a stamp to show which farm it comes from and that it is ACCS certified. Everyone in the chain including maltsters, brewers and distillers, and the ultimate retailers can be confident that it has been produced to the highest standards,” says Julian.

One of the strengths of the AUKM scheme is the level of grower assurance which exists in the UK with some 25,000 farmers in assurance schemes. Tony Pexton is Chairman of the Assured Combined Crops Scheme, he says: “In a world increasingly concerned with not only food safety, but also environmental and animal welfare issues, our customers need confidence in our on-farm production and storage standards. Red Tractor schemes, with its standards set right across the industry and independent inspection, gives them the assurance that they seek, and provides the first step for processors to set up integrated assurance schemes right through the chain to the final product.

“The Assured UK Malt scheme is an excellent example of integration between on-farm schemes and processing. It adds value for the grower, and gives buyers, retailers and consumers total confidence in the ingredients they are using and consuming.”

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**Fuelling the future**

*The science behind fuel alcohol yeast fermentations*

**By Graeme Walker and Jane White**

*University of Abertay, Dundee*

**The question remains, however, can they be produced efficiently at the required levels by sustainable processes? This article will focus on the scientific and technological challenges that lie ahead, rather than the political and economical concerns.**

The main biofuels are biodiesel and bioethanol. The former is produced following chemical esterification of vegetable oils or animal fats (with Germany being a world leader) whilst the latter can be produced from a variety of agricultural crops and residues (USA and Brazil dominate). Fuel alcohol from renewable sources, or bioethanol, is currently produced from maize, sugarcane/beet and wheat. USA leads the way for maize starch hydrolysis and fermentation to produce bioethanol, whilst Brazil dominates world production from sugarcane sucrose. The greatest potential and challenge is to bioconvert lignocellulosic material from agricultural, forestry and industrial residues into ethanol. These so-called second generation biofuels, are being rapidly developed in several countries. In the US, ethanol from lignocellulosics is the target of state-driven research with bioethanol forming part of the focus of George W Bush’s State of the Union address in Jan 2007.

How are brewers and distillers, with their intimate knowledge of...