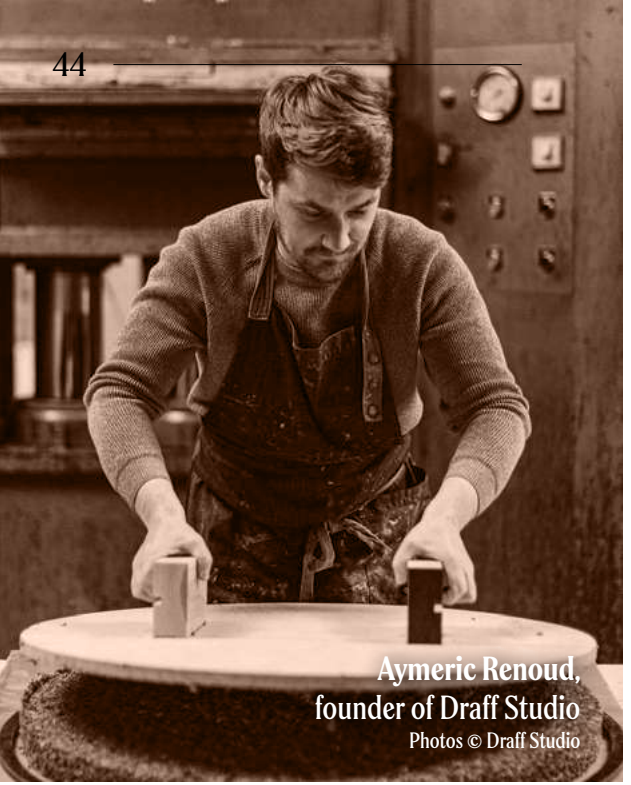

Aymeric Renoud, founder of Draff Studio

Photos © Draff Studio

Stramash N°3 | WOVEN

New ways with whisky waste?

As drinkers question the impact of their favourite tipple, Anthony Gladman looks at the innovative ways some distilleries are cleaning up their act

Imagine finding out the scraps you'd been feeding to the pigs for years were actually full of fifty quid notes. Bucketful after bucketful of perfectly good money turned into bacon and shit.

The whisky industry produces 2.6 billion litres of waste water per year in Scotland alone, plus about 530,000 tonnes of spent grain, which distillers call draff. Much of this ends up as animal feed, or is simply discarded. Isn't that a waste of... well, waste?

Draff

"What I like about this product is we are taking waste and we are creating another story out of it," says Aymeric Renoud, founder of Draff Studio, a contemporary design practice in Dundee that specialises in sustainable furniture.

Most distillers send their draff to local farmers to use as animal feed, just as brewers do with their spent grain. A few use it in anaerobic digesters to produce bio-energy to power their distillery. But when these options aren't available draff can become difficult to get rid of. »

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Renoud learned this while enjoying distillery tours. “I’m interested in beer and whisky production so I visited a lot of distilleries,” he says. Born in Marboz in France, Renoud originally trained as a traditional cabinet-maker before he moved to Scotland in 2013 to study at the Jordanstone College of Art and Design. “It clicked one day in my head, like oh that’s a waste product, let’s send a few emails to some distilleries and see if I can collect some of the grain and experiment with it.”

To work his magic, Renoud dries the draff, mashes the grains to a pulp and combines this with a water-based binder. Then he transfers the mixture to a mould and applies high pressure and heat, which results in a stable material that Renoud can turn into sustainable furniture.

The material has an unusual surface pattern, like a cross between cork board and the inside of a flapjack. It also smells of bread when you cut it. Renoud mostly makes round things with it—stools, tables, trays, etc.—because that’s the shape it wants to take during the pressing process. Working with rather than against the material means he creates less waste.

Renoud’s creations have featured in the Scottish Design Galleries at V&A Dundee, and he has worked with draff from Dalmore, Arbikie, and Glenfiddich among others. “For me the project was driven by the need to develop this eco-friendly material, but I think that the whole idea of the studio is we thrive on collaboration,” says Renoud. As well as spent grain from whisky makers and brewers, Renoud also works with used botanicals from gin distillers and chaff and husks from coffee roasters.

Pot ale

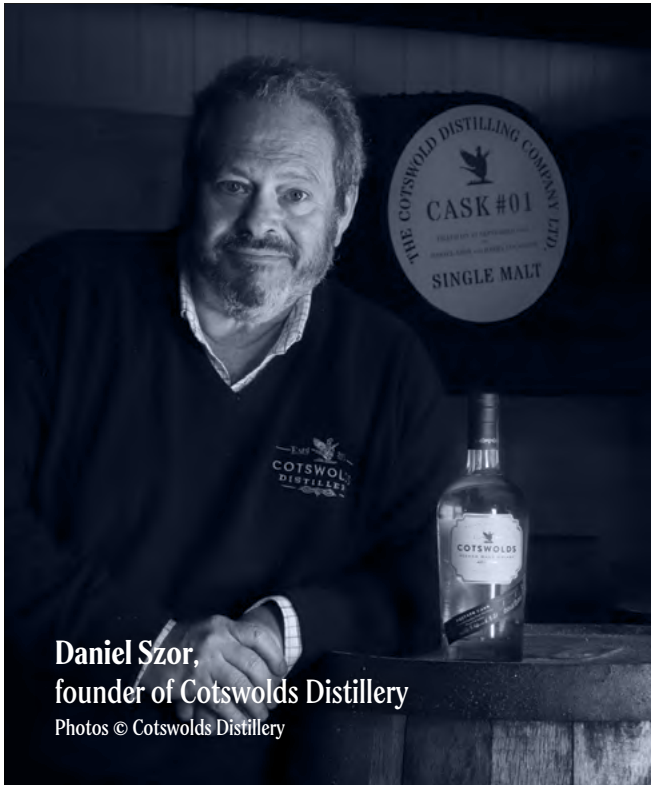
Whisky—Scotch whisky, at least—must undergo two distillations. First in the wash still, to separate out the ethanol and a few flavour compounds, and second in the spirit still to further select and concentrate these desirable goodies.

Every time a distillers runs a wash still, about two-thirds of the whisky-to-be gets left behind in the boil pot. This pale golden gunk, all malty and yeasty, is known as pot ale. And it turns out it may be rather valuable.

An Aberdeen-based startup, Ripcell, says it has found a way to recover organic compounds from the stuff which could be worth as much as £90,000,000 a year. Ripcell was founded in 2021 by Dr Eve Wildman, a former lecturer and research lab manager at the University of Aberdeen, who has a long history of working in sustainable energy and green materials.

The company processes up to 1,000 litres of pot ale each hour to extract ultra pure bio-acetic acid and other platform chemicals. There’s a market for these in »

Dr Eve Wildman, founder of Ripcell
Photos © Ripcell



Daniel Szor,
founder of Cotswolds Distillery
Photos © Cotswolds Distillery

> It's good quality water. It's just got little bits of yeast, bits of malt, maybe a little bit of whatever was in the still. But it's not all that dirty.

food and drink, pharmacy, textiles, and cosmetics, where commercial versions are synthesised from petrochemicals. Ripcell's versions would save 1.59 kg of CO_2 for every kilogram produced and reduce greenhouse emissions by 392 million kg of CO_2 per year.

But Ripcell has another use for them too. "Essentially what we're doing is we're taking waste from the whisky industry and using it to process waste from the lithium-ion battery industry in a truly circular economy," says Wildman.

Trials have shown that Ripcell can use its chemicals to recycle electric vehicle batteries and extract metals such as lithium, nickel, cobalt, and manganese. "Instead of mining these raw materials from the ground, which contributes to global greenhouse emissions, we can recycle them," says Wildman. This would bring down the carbon footprint of future electric cars and make them more affordable.

White waters

Another important waste stream is the "white water" effluent. This is the water used for washing out equipment plus the oily, cloudy stuff left in the spirit still after a whisky's second distillation, which is known as spent lees.

"It's good quality water. It's just got little bits in it," says Daniel Szor, who founded the Cotswolds Distillery in 2014. "It's got bits of yeast, bits of malt, maybe a little bit of whatever was in the still. But it's not all that dirty."

Still, you can't just dump it. This used to mean tankers lumbering through the surrounding countryside to collect it, 30,000 litres at a time, three or four times a week. But now the distillery, which is based in an Area of Outstanding Natural Beauty, »

> Now the distillery has a new way of dealing with its effluent that has taken all this traffic off its local roads

has a new way of dealing with its effluent that has taken all this traffic off its local roads. And it's incredibly simple.

In 2021 the distillery bought six acres of horse pasture that adjoined its land and began a project to turn it into a wetland with over 50 species of plants—wildflowers, reeds, willows—that acts as a biological filtering system. All the distillery needs to do is pump the effluent to the top of the wetlands, which are built on a gentle slope, and let gravity, the plants, and evaporation do the rest. It can treat 100,000 litres of effluent each week.

It has led to an increase in wildlife too, with more insects and birds visiting the site. "We've certainly seen lots of dragonflies. We see a lot of bird life, particularly red kites," says Szor. "Some of the distillers were rhapsodizing over the first newt that they found."

Szor says the wetlands project is important because it achieves something meaningful in terms of the distillery's environmental impact. "In all honesty, we have traded shamelessly on the name of the Cotswolds and on the reputation and the beauty of the Cotswolds. So if we're doing all that, shouldn't we actually make it a better place, or at least our little bit of it, than it was when we started?"

New ideas

None of this is to say that more usual methods of dealing with distillery waste are lacking, except perhaps in pizzazz. Using draff as animal feed for instance has knock-on environmental benefits for the farmers, whose cattle will need less drinking water than those fed on silage alone. Still, it's good to see new options emerging. Particularly ones that can cut emissions and rustle up some cash at the same time. S