UK says 'no' to peat- what's the alternative?

An initiative started in 2003 in the Netherlands to study the feasibility of growing pot plants in substrates containing less, or no peat at all. The chain-wide project 'New Growing Media' returned some surprising results: some pot plants even grew better in less peat substrates; coir turned out to be the most favourite replacement.

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To put it straight: hardly any practical knowledge concerning pot plant breeding in peat-low or peat-free substrates has existed in the Netherlands until several years ago. Not much was known about these plants' behaviour either during breeding or further down the trade road - towards the consumers for instance.

To get to know more about it, the New Growing Media[1] project was set up. Being a chain-broad cooperation, its aim was to safeguard Dutch competitiveness in foreign markets, especially in Britain and Switzerland. An initial pilot project, involving 16 growers and 17 pot plant species, was set up under large-scale commercial test conditions. The pot plant species were studied, while grown in various blends of potting soil and raw material, alternatives to peat.

Eventually the research, carried out by Wageningen University's Applied Plant Research department, hoped to find out whether it is technically and commercially feasible to breed in different kinds of substrates, other than peat.

So far, the answer to that question seems to be yes'. In only one case, that of Begonia, the researchers were confronted with problems they could not resolve. In the other fifteen cases, they ended up being more or less successful. Altogether the use of peat in the mixtures decreased from 77% to 30% on average. A total of ten different substrates were used as replacement; in most cases coir turned out to be the most appropriate - either as fibre or as chips. The use of coir in the substrates thus grew from 17% to 40%. The plants were checked on two different properties during its research. On one hand the storage life (or ornamental value) was tested, on the other research focused on the new substrates' water-keeping properties. Thus can be known whether the new substrate could make a plant survive transports without drying out.

The Dutch potting soil producer organisation VPN made sure that advisors paid visits to all cooperating breeders. Together with the growers' own consultants and the growers themselves, they played an important role in adapting the growing strategy to the new substrates, influencing how quickly and well the necessary changes were made. Often water or fertiliser amounts had to be adjusted, different conditions had to be taken into account due to a dryer substrate or a different quantity of growth regulators had to be used. Of all species under scrutiny, both Hedera and Schefflera scored best - both varieties yielded even better results when grown on alternative mixture substrates. In the case of Schefflera compacta it led to better growth, better quality and a breeding impetus by two to three weeks. Five more pot plant varieties (Anthurium, Chrysanthemum, Gerbera, Spathiphyllum and Castana) did not perform any worse with a decrease in peat percentage. In eight other cases (Azalea, Guzmania, Poinsettia, Rose, Saintpaulia, Adiantum, Crassula

[1] Initiative members are Flora Holland, Wageningen University's Applied Plant Research department, RHP Foundation (Quality mark for Substrates), VPN (potting soil producers), Intergreen/ Sionsplant and the Dutch pot plant powers, partly financed by the Dutch Product Board for Horticulture (FT).

and Ficus) the substrate mixtures required more research to improve fertilisation and optimum water supply.
Not only coir was used as an alternative substrate. Products like bark, rice chaff, wood fibre, stone wool granulate, clay grain, pumice, perlite or vermiculite were used as well - mostly because they're known for their airy substance and having no influence on the plant's water absorption. Having used many of these elements in the trials, their percentage increased from 5 to 30. Although these substrates are rather expensive, an economical review of the test learned that total costs of the new substrates altogether cost between 92% and 112% of the original price. In some cases only stone wool proved too expensive.
For the future, more research is needed to learn more about substrate qualities of other elements, like treated organic fibres of grass, flax, hemp or wood. In general, properties like oxygen transport, stability and root intrusion resistance are considered important for creating a usable substrate. Most important for the future however, is flexibility. Thus a plant can be grown by adjusting the amount of water, air and feed quickly; adding disease suppressing elements from compost could be done too.

Europe turning anti-peat
Focus on peat alternatives is partly due to Britain's growing environmental awareness. Concerns about Britain's last remaining peat bogs have been around since the 1970s, and recently the matter received some government attention. In 2004 the worrying sounds were transferred into a chapter in the UK's Biodiversity Action Plan: the level of peat used in pot substrates has to be reduced to 40% and 10% by 2005 and 2010, respectively. British environmental organisations took action as well. A convenant with hypermarkets was signed to reduce the percentage of peat in sold substrates from 95% to 10% by the year 2010. It's not only Britain where peat's become an issue. A somewhat similar process has been going on in Austria and Switzerland as well.
EU and Kyoto
The European Union also helps to get peat out of the shops these days. The EU favours reusable alternative substrate materials, to prevent large volumes of unused materials from emerging. Also there's a lot of unused agricultural by-products that could be used quite easily as substrates, like olive pips, rice chaff, citrus peels and grapes. As far as the Kyoto agreements are concerned, peat alternatives could help, since by both obtaining and using peat a lot of carbon-dioxide (CO_2) is released. However, to be certain of that, a life cycle analysis (LCA) could help predict the new substrate's effects.