

November meeting

An ambitious planned £1bn investment in soil-free vertical farming in England will be producing high-quality fruit and vegetables within the next few years, members heard at the November meeting.

Trial production is planned to start outside Norwich at Fischer Farm's latest investment early next year. The initial £33m investment is on a five-and-a-half acre site at Honingham Thorpe on the Food Enterprise Park.

Another three vertical farms are to be built on the same site, which is planned for the next 18 months to two years, said Tim Smith, general manager of the company's Farm 2 operation.

He briefed about 50 members and guests of Holt & District Farmers' Club on the rapid progress, which has been achieved. All the main structures have been built but fitting out of the internal racking will be completed soon, he said. In further phases, he said that more robust tunnels would be built, which would enable solar (PV) panels to produce more on-site "greener" energy.

A small-scale operation, Farm 1, in Burton-on-Trent, had shown the way forward to producing a range of home-grown quality vegetables and potentially fruit.

Mr Smith, who spoke with enormous energy and enthusiasm for almost 45 minutes, certainly excited his audience. As he repeatedly emphasised, there was an opportunity to meet a large market in Britain for quality produce and initial response from supermarkets had been extremely positive. In addition, as salad crops could be grown without pesticides or without washing, it could easily extend the average shelf life of packs to possibly 14 days.

This would reduce food waste because vertical farming systems were intrinsically much more efficient and reliable than traditional field-grown cropping.

Mr Smith said that once the 20 tunnels are producing initially a range of mainly leafy salads, Fischer Farms – backed by specialist investors Gresham House – plans to build Farms 3, 4 and 5 in the next couple of years. Each "vertical" acre was able to produce as much as 250 acres of open cropped area, said Mr Smith.

Fischer Farms has also advanced plans for further vertical farming operations near Hull, which will include growing soft fruit including strawberries and possibly other berries.

Mr Smith stressed the numerous advantages of vertical farming, using hydroponic growing techniques and special sophisticated lighting regimes to achieve maximum yields of crops. Crops would be grown in the strictest bio-security and a fully-controlled environment, which would minimise disease risks and avoid the use of synthetic crop protection products including pesticides, herbicides and insecticides.

Farm 2's operation would require about 3MW of electricity – currently being produced from a combination of "renewable" sources including wind and solar. Further expansion of solar, possibly closer to the site, would further improve the green footprint.

The growing tunnels would contain a total of 7,200 trays, each 1.2m by 3.3m. These would be stacked, depending on the state and height of the growing crop, either six high for final growing, or in eights for the nursery stage and 12s during germination.

A range of light spectrums from the 33,000 LEDs (light emitting diodes) would ensure optimum growing conditions. Apparently in early and late stage growth "red" light was ideal but in between

“blue” light would ensure correct root growth. A nutrient formulation would feed the plants, which would be growing on clay-based “pebbles,” which would be carefully “scrubbed” after each crop before re-use.

The strategy for Farm 2’s cropping would begin with a range of leafy-based crops, then in further phases, fruit including strawberries, blueberries may be grown. Ultimately, it may be profitable to grow soya or wheat in such vertical farming systems, said Mr Smith.

A trial first sowing in completed tunnels would start in January, which would be harvested in March with production expected to ramp up as the fitting out was completed.

Mr Smith said that typically he expected the germination phase (in the dark) would about three days – probably using about four tunnels, and then into the nursery phase for 10 to 12 days before the trays were moved into the growing operation. Initially, 20 staff have been recruited, he said.

In a lively question and answer session, members highlighted the obvious advantages but there were also raised eyebrows given the scale of the (projected) capital investment and the running costs.

He was thanked by the chairman, Pat Cubitt, for his in-depth introduction to vertical farming techniques and the exciting developments on the Food Enterprise Park.

Further information

This extract was included in asset manager Gresham House’s latest 64-page sustainable investment report, actually published in April 2022.

Case study: Quantifying our impact.

We first invested in vertical farm producer, Fischer Farms in 2018. The business produces high-quality leafy greens at a vertical farm based in Burton-on-Trent, UK.

We recently appointed carbon consultants to analyse the carbon and wider environmental benefits of Fischer Farms’ prospective second farm. The analysis highlighted some material environmental benefits vs. traditional farming methods including:

99% reduction in land required to produce the same yield as conventional farms

Less than 1pc of the water-related emissions generated by conventional farming to grow the same yield

99pc less greenhouse emissions per tonne of produce compared to conventional domestic farming (0.003t CO₂ per tonne of produce compared 0.349t CO₂).

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Full report – www.greshamhouse.com/sustainable-investment-report-2022

Footnote

Pat Cubitt, chairman, who welcomed the speaker, was pleased to introduce the new treasurer, Laurie Hill, who is a partner with chartered accountants Larking Gowen. He also welcomed seven students from Gresham’s School, who were undertaking BTec studies, and three members of Thornage Hall Independent Living.

He said that the secretary Tim Nicholson was away. He noted apologies from Bruce Poortvliet, Peter Perry-Warnes and Andrew Ross.