

commercial grower

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Ethnic produce
p16



Wholesale markets
p20

THE KEY TO GROWING THE BEST CROP

Choosing the correct film is vital to growing successful crops under cover, and there are various considerations which need to be taken into account.

Whether you are a grower in Africa or in England, the start of a new season brings great anticipation; will your product be the right colour, the right size and have the right fragrance? How can you ensure your crop is of the best commercial value to your business?

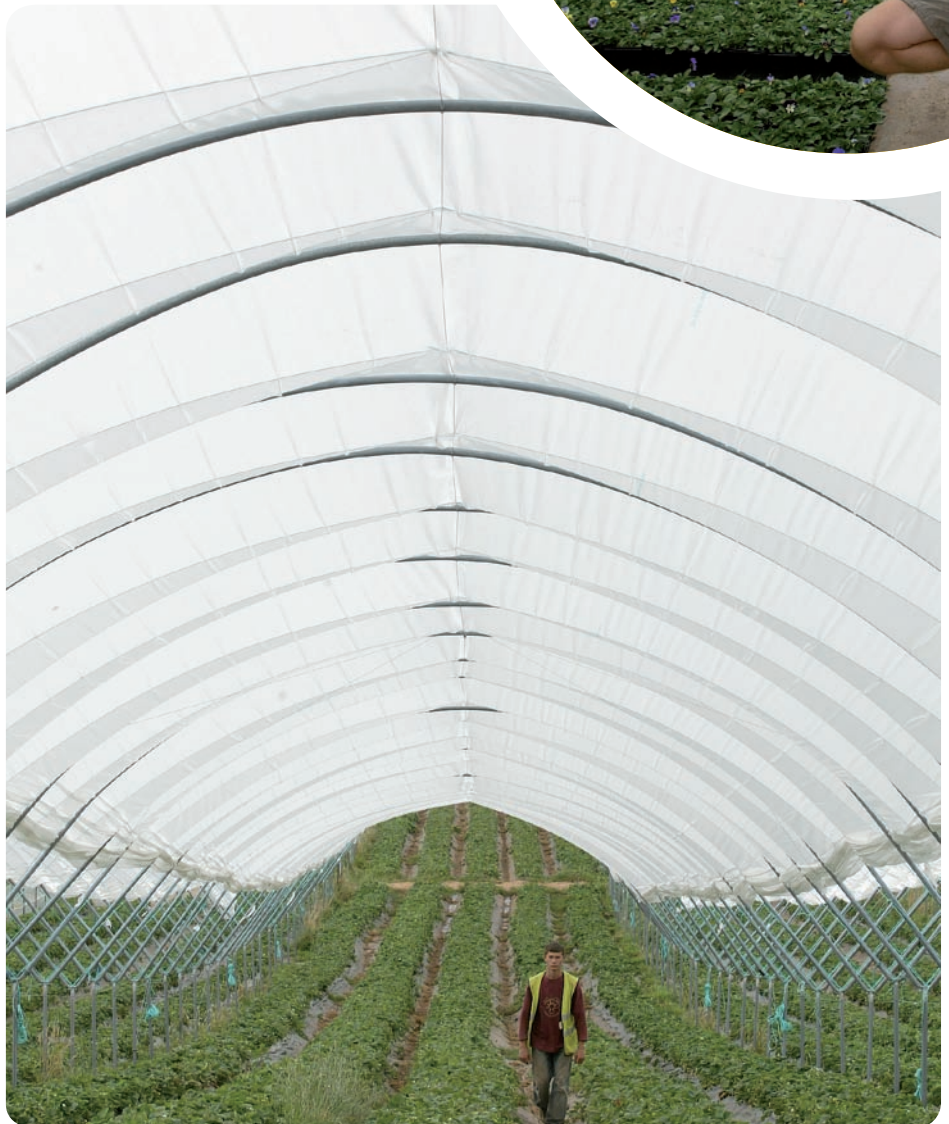
The methods you employ will of course influence the size and nature of your crop and one important aspect of this is the growing environment utilised, be it a greenhouse or field scale tunnel. When it comes to horticulture films the type of film you choose plays a vital role in controlling the growing environment and providing the best results in your local climatic conditions.

Renowned for its research excellence, Lancaster University has been conducting a number of research programmes investigating how different types of horticulture films affect produce. Such research ultimately delivers tangible economic benefits to growers.

There are various kinds of film available in today's market – standard film, UV blocking film, UV transparent film, anti-condensation film – but how can the various properties of these films be exploited to produce the best possible crop whilst minimising cost? One area which Lancaster University has looked at is how controlling the amount of UV exposure can affect plants' fragrance size and pigmentation.

UV FILMS

Research by Lancaster University has found that using films that transmit a very high percentage of UV have a range of economic benefits for both salad and vegetable propagators. In salad and vegetable crops tested by the university the UV-transparent films produced propagation plants that were 'shorter and stockier' (both desirable quality traits) than plants produced in traditional glasshouses or under standard films. Furthermore, significant increases in the thickness of leaves and the mechanical strength of leaf tissue meant that the crops transplanted much



more successfully. Alongside significant reductions in disease damage under the UV-transparent film Lancaster's researchers also measured increased levels of 'sun-screening' compounds which they say help protect the crop during the first crucial days in the field. Indeed, in large-scale commercial field trials carried out across three UK growing seasons, final yields of both vegetable and salad plants propagated under the UV-transparent film increased by between seven to 20 percent.

The benefits of high UV transparent film carried on into improvements in post-harvest quality. In a wide variety of crops, from head-lettuce to cut flowers, significant improvements in colouration, taste and shelf-life were recorded; all of which are important for retailers and consumers.

However, if you are a cut flower producer or any other producer for that matter who's predominantly interested in increasing your crops weight and biomass (cut-flower producers are often paid by the weight of the stem) then a UV Blocking film can help to deliver this. The film significantly increased the yield of all crops tested and has been especially successful in increasing productivity of cut flowers, where stem weights have been increased by 10 percent, and crops grown for their essential oils such as sage, thyme, peppermint and rosemary. For producers of oil crops it is essential that the concentration and composition of the oils available for extraction is maintained

when using films. Lancaster University and the Scottish Agricultural College (UK) have reported that blocking wide-spectrum UV increases oil yield by between 119 percent and 641 percent without affecting the quality or concentration of essential oils.

ANTI-CONDENSATE FILMS

Another product, the Anti-Condensate film, can be used to control the spread of disease. Such a film contains additives designed to control the way in which water condenses on the film. Reducing droplets avoids plant damage and can reduce the spread of fungal diseases such as botrytis cinerara (grey mould) and downy mildew and hence reduce the use of chemicals necessary to control these diseases. Additionally, these films also have thermic properties to assist night time heat retention and are best for crops that respond well to high direct light levels and warm temperatures.

GREENHOUSE CLADDING FILMS

With greenhouse cladding, a clear, colourless film may transmit the maximum amount of solar radiation, but there can be advantages in terms of delivering healthier plant growth if the film is made cloudy in a controlled way. Dr Richard Henbest of manufacturer bpi.visqueen explains: "The ideal is to create a degree of light diffusion so that the amount of light reaching the plant is not significantly less, but it reaches the plants from numerous directions and is spread more evenly around the plant canopy. This is not only advantageous to plant growth, it also helps to control heat build up in the growing environment."

The degree of diffusion provided by a film is

normally measured as a haze factor and the European Standard for light diffusing films sets a minimum haze value of 35 percent, with most commercially produced films offering 40-70 percent. However, there has been a great deal of research in this area and there are now films available offering 90 percent solar radiation diffusion, maximising the crop's exposure to solar radiation whilst preserving the benefits of growing under cover.

John Phoenix, sales director at the same firm, said: "When deciding upon which film product to use growers across the globe now have a range of 'smart films' to choose from. As the environment is continuously changing, the horticulture film industry is having to adapt to the changing requirements of growers. Through advances in manufacturing technology and the findings of research projects such as those undertaken by Lancaster and Reading Universities it is possible to design technically advanced films to cater for a variety of climates." ○

FOUR POINTS TO KEEP IN MIND WHEN SOURCING HORTICULTURE FILMS:

- Advice - Seek the advice of your local distributor to help you choose the right film
- Price – Don't automatically go for the cheapest product on the market, it may seem like you are saving money but if the product isn't right for your crop you could risk losing much more than the money saved in the initial investment
- Crop – consider the type of crop you are growing and to what specification
- Climate – consider the climate you are growing in and how this could impact upon your crop, then choose a film that will help you to control the growing environment

