

## Fruit & vegetables. MAPAX®.



Consumers demand high-quality fresh fruit and vegetables all year round. This is both an opportunity and a challenge to producers, processors, and packers. Careful handling supports hygiene and product integrity throughout the supply chain – from harvesting, through storage, preparation, packaging, and distribution. It promotes product quality and longer shelf life.

For growers and food producers, the solution to meet these demands for high quality lies in new highly-sophisticated, efficient production and packaging processes that guarantee taste, appearance, food safety, and value.

### The challenges

The right choice of modified atmosphere in the right packaging material is essential in extending shelf life and mitigating the factors leading to spoil.

If fruits and vegetables are sealed with a film that has insufficient permeability, undesirable anaerobic conditions (less than 1% oxygen and more than 20% carbon dioxide) will lead to loss of quality. Conversely, if they are sealed in a film which has excessive permeability, little or no modified atmosphere will be retained.

Another risk is moisture loss, which can accelerate the deterioration process. It is crucial to achieve the right balance between a product's respiration rate and the transmission of oxygen and carbon dioxide through the packaging medium. An equilibrium modified atmosphere (EMA) is determined through rigorous testing and is influenced by the following:

- Respiration rate
- Pack volume
- Food types and ingredients
- Maturity and intensity of produce preparation
- Temperature
- Packaging material
- Fill weight
- Light permeability

### The solution

Atmospheric control combined with the right packaging is proven to extend the lifespan of fresh produce. Micro porous film is a good example of fit-for-purpose Modified Atmosphere Packaging (MAP). It has the right level of permeability to retain freshness and lengthen the shelf life. It also offers the correct intermediary permeability and supports the establishment of a desirable EMA. Typically, EMAs of 3 – 10% oxygen and 3 – 10% carbon dioxide significantly increase the shelf life of fruit and vegetables. However, determining the optimum EMA for a particular fruit or vegetable is a complex issue that can only be solved with practical testing.

