



Photo credit to: http://m.yesmyfarm.com/index.php?ws=pages&pages_id=9591



Greenhouse Cultivation





Greenhouse cultivation began in the Qin dynasty more than 2000 years ago. During one winter, Qin Shi Huang (The Qin Emperor) ordered melons to be cultivated on Mount Li, despite winter being usually very cold and not suitable for growing plants. However, in the non-plant growing season, it bore fruit. Confucian scholars, who prided themselves in seeing a much wider perspective through the reading of ancient books, had never heard of growing melons in winter. This made Qin Shi Huang very unhappy; he had already been dissatisfied with many Confucian scholars in the past who had gone against his authoritarian rule. He took the opportunity to exact revenge on the scholars by setting up an ambush in the vicinity of Mount Li. When the curious scholars turned up to see the winter melons, more than 700 of them were shot dead by archers and their arrows.

Photo credit to: http://m.yesmyfarm.com/index.php?ws=pages&pages_id=9591



Melons bearing fruit in winter was not impossible in the Qin dynasty, on Mount Li of Xian. It is because Mount Li is rich in geothermal resources while its unique hot springs form a regional climate which make it possible to grow fruit and vegetables in the winter. In the Han dynasty, there were records of greenhouse cultivation. In order to taste fresh vegetables in the winter, people built a special house, heating it day and night to maintain room temperature. Through this method, growing vegetables in the winter was made possible.



Photo credit to: http://m.yesmyfarm.com/index.php?ws=pages&pages_id=9591





Greenhouse cultivation techniques were rapidly developed in the Han dynasty. In addition to cultivating vegetables for fresh food, people also used this technique for flower and fruit cultivation. During the Tang dynasty, Chang-an, which was situated near the capital city, had a constant winter supply of vegetables and fruit brought to the palace for the royal families. Farmers used the warm water irrigation to grow and to carry supplies of fresh vegetables and fruit in the cold weather, for the kings and nobles to enjoy.

Photo credit to: http://m.yesmyfarm.com/index.php?ws=pages&pages_id=9591

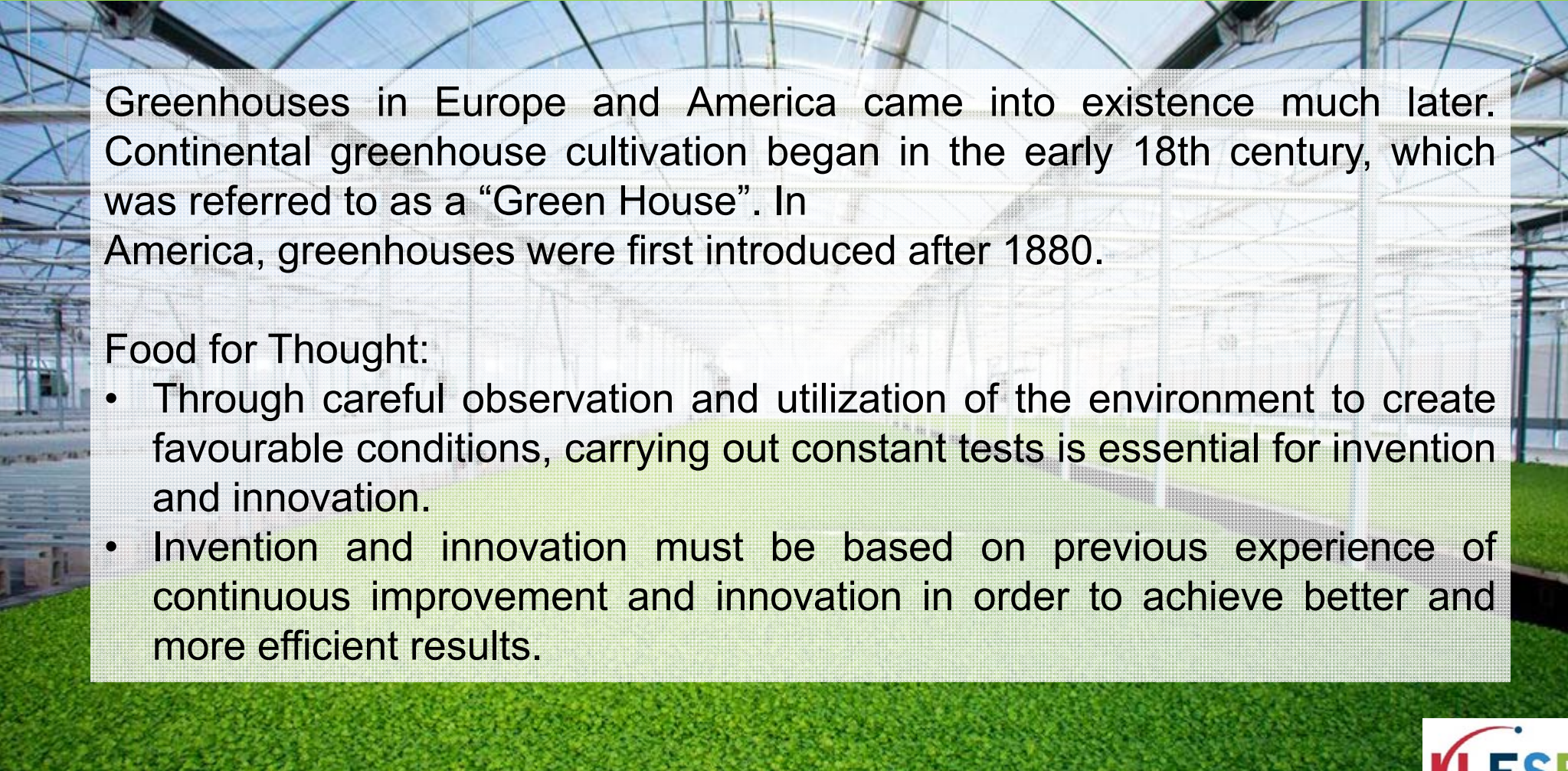


It is worth noting that hot springs alone were not enough to keep the produce warm. Produce had to be protected with layers of insulation to prevent fruit and vegetables from freezing in the winter. The temperature in Xian during the winter was about minus 10 degrees Celsius. If the insulation only covered the cultivated area and not the top, fruit and vegetables would have had difficulty surviving the winter. By covering the sides and the top of the cultivated area, they had formed the shape of the first greenhouse.



Photo credit to: <https://www.youtube.com/watch?v=VMGotloCMo8>, http://m.yesmyfarm.com/index.php?ws=pages&pages_id=9591





Greenhouses in Europe and America came into existence much later. Continental greenhouse cultivation began in the early 18th century, which was referred to as a “Green House”. In America, greenhouses were first introduced after 1880.

Food for Thought:

- Through careful observation and utilization of the environment to create favourable conditions, carrying out constant tests is essential for invention and innovation.
- Invention and innovation must be based on previous experience of continuous improvement and innovation in order to achieve better and more efficient results.

Photo credit to: <http://www.agritechmurcia.com/en/proyecto/greenhouses-for-organic-farming/>