

Achieved

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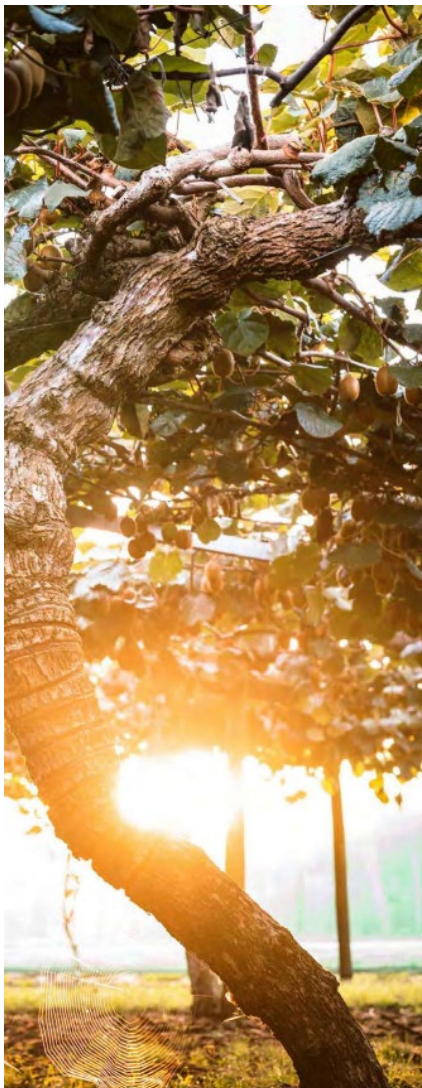
Life process of photosynthesis in Kiwifruit

Photosynthesis generates energy, this energy is captured through light and converting the light to chemical energy. Energy in the sugars is used for growth.

The leaves of kiwifruit contain chlorophyll, this creates the green color in the kiwifruit. Chlorophyll absorbs the light energy. This energy and carbon dioxide is taken in through the kiwifruit leaf pores and the water is taken in through the roots, this combines to make glucose sugar and water. So, photosynthesis occurs in the leaves of the kiwifruit, these sugars need to be moved up to the stem, stalks, flowers and other leaves by the phloem. Water moves from the roots up to the rest of the kiwi plant (especially leaves) through the xylem.

Considering this, the word equation for photosynthesis that proves all these products are put together to create energy from photosynthesis are Carbon dioxide + water + glucose + oxygen gas. The carbon dioxide is a reactant along with water, and the glucose and oxygen gas are the products.

All this is needed to continue the life process of photosynthesis within the Kiwifruit Plant to maintain quality kiwifruit. The kiwifruit crop relies on this (photosynthesis) to develop successfully towards a purposeful harvest for the market.



Pruning

Pruning is a management practice that provides more light to the fruit (photosynthesis). This practice ensure the fruit ripen. With more light from pruning more kiwifruit shoots will occur from the photosynthesis – light entering in. The kiwifruit need this sunlight to promote healthier growth as the kiwifruit plant originated from ample sun exposure so lots of shadowing on the plants will negatively impact the kiwis.

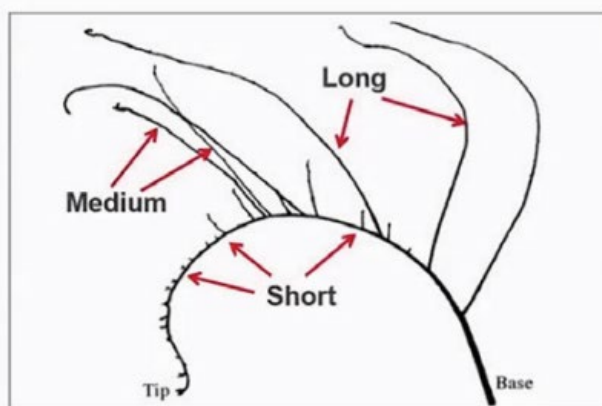
By pruning the kiwi plants, it allows sunlight. Sunlight helps the process photosynthesis through the sunlight giving cells carbon dioxide and energy. This energy increases the kiwifruit sugar levels.

We carried out the management practice pruning, by trimming the kiwi canes, spurs and average amount of required leaves to reduce the canopy. If we didn't do this, the canopy will get overgrown and not allow sunlight to peek though to the fruit to ripen in time for the market – they will lose value.

The bottom photo, shows the required lengths to have the canes, spur, and number of leaves after pruning to ensure light reaches the fruit so photosynthesis can occur.



The above photo shows what our kiwifruit looks like after we prune. As you can see there is plenty of space for the kiwifruit to grow and light to enter.



Short	Terminated, short internodes (spurs)	8 cm long, 5 leaves
Medium	Terminated, long internodes	56 cm long, 14 leaves
Long	Non-terminated, often pruned	187 cm long , 40 leaves

Mātauranga Māori concept

The Maori concept I am choosing is Kaitiakitanga this is a New Zealand Maori term that means guardianship for the sky, sea and land. The kaitiaki is guardian and the process and management practices within protecting our land and environments, this is referred to as Kaitiakitanga. This maori concept, Kaitiakitanga relates to the management practice, pruning, by allowing photosynthesis into our kiwifruit. This is by caring for our kiwifruit - guardianship of land.

To carry out this process we pruned in early winter months to have a healthy, good-sized kiwifruit for the market and pruning at the right time to protect the plant from sap. We cared for the kiwi plant by doing this as if we did it later there would be less quality fruit (bud numbers) and cause the canes to sap which weakens the vines.

To the right shows the photo of pruning the canes correctly to ensure we produce quality kiwifruit for the market. This is our process along with many other practices (like girdling) to care for our land – Kaitiakitanga - that ensures we have a successful yield for fellow NZ citizens to buy from their local supermarkets.

We are also protecting the environment around us as if we left excess fruit rotting on the ground after an unsuccessful harvest from not carrying out our management practices, we would attract pests to eat them instead of helping citizens live healthier lives through our orchard providing great nutrition with high standards of fruit quality for the market.



The above photo shows sap dripping from the pruned end of the kiwifruit this happens when you prune too late.

