

# Hydroponic Vegetables

## *in Hafacha*



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*In recent years, it has become more popular to grow fruits and vegetables hydroponically. The advantage for a farmer to grow his produce in this manner is that it allows for year-round food production in any climate. There is also a potential advantage for the kosher consumer, as it is possible to prevent insects from accessing leafy vegetables that are often infested with bugs. This is easier said than done, as will be explained.*

*This article will cover three important areas: insects, brachos, and Pesach.*



### What is Hydroponics?

By definition, hydroponic produce grows in water – not soil. The seeds are placed into what is called a “growth medium”, such as a coconut coir (made from ground up coconut husks) or other kind of material that is not considered soil, and it is fed with water and various nutrients.

### Insects

#### *Misconception*

There is a misconception out there about hydroponics. People think that if something is grown hydroponically, greenhouse-grown, or grown indoors, that means that it’s not going to be infested. After all, bugs are only outdoors, in the soil, but if something is grown in water, there are no bugs. How could bugs get in there? It’s definitely going to be clean of bugs, right? But that is incorrect. All it takes is one or two bugs to get into a greenhouse or hydroponic farm, and those bugs will now infest the farm with just as many bugs as you have in an outdoor situation.

The good news is that for the hydroponic farms that have safeguards to prevent bugs getting in, they will go to extreme measures to make sure that there is no infestation.

#### *How Do Bugs Get Inside?*

There are numerous ways that bugs can come into a hydroponic farm. Firstly, the grow media may be infested with bugs or eggs. Another simple way for the bugs to get in is when someone opens

### HYDROPONICS VS. VERTICAL FARMING

“Vertical farming” should not be confused with “hydroponics.” Vertical farming is related to the space in which the produce is grown - picture a bookshelf, where you have one shelf on top of another shelf, and each shelf has growing plants - as opposed to traditional farming, where produce is all grown on ground-level. In fact, in vertical farming the produce can be grown traditionally, i.e., in soil, and does not necessarily denote hydroponics. The term “hydroponics” only refers to the growth medium, which may – or may not – be grown vertically. In summary, if something is labelled as “vertically farmed”, the produce may be grown in soil, which could actually be even more infested than hydroponics.

the door to the farm and they enter through the door, or by clinging to one’s clothing or shoes.

Also, the farm may not be completely secure. All it takes is a tiny hole – whether it’s in a window, in a wall, in the duct work, the HVAC, etc. – and bugs can come in, and they will infest the farm.

Further, all the nutrients are coming through the water which may be infested with bugs or eggs. Once the bugs get inside, they are going to lay eggs and infest the produce. Finally, different seasons may cause various issues. For example, in the spring and summer there is more infestation due to the larger number of bugs in the outdoor environment. Also, during a rainy season, certain types of bugs, like spiders, will seek shelter indoors.

### The Solution

A company has to have a lot of experience and knowledge to effectively keep those bugs out. For starters, the farm needs to be completely secured; for example, they need to install fans to blow air and bugs out when the door is opened, and the staff and all visitors are carefully geared up with special clothing and special shoes.

However, after all that, bugs can somehow still get in there. Therefore, they need a protocol to detect and get rid of the bugs. The produce needs to be constantly checked by a *Mashgiach* on an ongoing basis to make sure that no bugs are coming in. If bugs are found, the company has to have the right know-how to get rid of them, how to treat the water and growth media, and other methods to get rid of the bugs in the farm. If there is an ongoing infestation issue, the company can treat the water or smoke out the bugs.

### Verification

Even after the correct protocols are in place, one can't make any assumptions that the produce is not infested. Even before the produce is cut, cRc checks samples before every weekly harvest, before it's going to be distributed, to make sure that it's bug-free. If we don't find bugs in that sample, then we'll allow that lot of produce to be distributed as kosher-certified.

If, however, the samples are found to be infested, the infested produce is rejected. If several samples are infested, everything is rejected until the company can demonstrate that they have eliminated the overall issue. A strong system needs to be implemented to monitor this.

### Summary

After reading the above, it should be obvious that if hydroponic produce is being sold without a reliable *hechsher*, and no one verifies that the necessary protocols are in place, you're very likely to have bugs in the produce that is being sold.

We always advise consumers to check every bag of produce for a reliable *hechsher* and not assume that the produce is bug-free if there is no *hechsher* on the label for any given batch.

## Brachos

### What Bracha?

What *bracha* should be recited on lettuce or any other vegetable that is hydroponically grown? Ordinarily, one recites "*borei pri ha'adama* - He creates the fruit of the ground" – when eating vegetables that grow from the ground. However, when vegetables are hydroponically grown, they are not growing from the ground and perhaps it may not be appropriate to recite "*borei pri ha'adama*."

There is a discussion in the *Poskim* regarding produce grown in soil in a non-perforated flowerpot. *Chayei Adam* (51:17) rules, based on the *Gemara Yerushalmi (Kilayim 7:6)*, that one should not recite a "*borei pri ha'adama*" on vegetables that grow in a non-perforated flowerpot, since a flowerpot is not considered "the ground"; rather, one should recite the *bracha* of "*shehakol*". Therefore, according to the *Chayei Adam*, one should recite "*shehakol*" before eating a tomato grown in a flowerpot.

Other *Poskim*<sup>1</sup> disagree with the ruling of the *Chayei Adam*. They rule that such produce, grown in soil, requires the standard *bracha* of *ha'adama*. Many *Poskim*<sup>2</sup> follow the ruling of the *Iglei Tal* and *Sdei Chemed* that "*ha'adama*" is the correct *bracha* to recite.

Moving to hydroponics, where the vegetables are not even growing in soil, there is more reason to recite "*shehakol*" rather than "*ha'adama*." Nevertheless, *Shevet HaLevi* (1:205) rules that one should recite "*ha'adama*" even on hydroponically grown vegetables. He posits that since vegetables

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generally grow in soil, they are always “*ha’adama*.” Likewise, *Ohr Litziyon* (2:14:13) says that one should recite “*ha’adama*”, since the vegetables are being grown from seeds that originated from the ground. However, other *Poskim*<sup>3</sup> rule that one should recite “*shehakol*” on vegetables grown hydroponically.

### Bottom Line

In conclusion, the prevalent ruling is that one should recite “*shehakol*” on vegetables grown hydroponically, but if one recited “*ha’adama*”, *b’dieved* the *bracha* is considered valid, since one may rely on the other opinion which rules that the correct *bracha* is “*ha’adama*”.

### When in Doubt

One who purchased a vegetable and does not know whether it was grown hydroponically or in soil should assume that it is grown in soil and recite “*ha’adama*”, since most vegetables grow in soil. If the label indicates that it was vertically-grown, there’s a strong chance that it was grown hydroponically, and “*shehakol*” should be recited.

### A Mixture

If one has a salad that consists of hydroponic lettuce along with small pieces of standard vegetables, and the majority ingredient is lettuce, one should only recite “*shehakol*” on the salad.

### Summary

There is a disagreement in the *Poskim* regarding the correct *bracha* to be said on hydroponically grown vegetables, and the prevalent ruling is to recite “*shehakol*”. Nevertheless, if one recited “*ha’adama*”, *b’dieved* the *bracha* is considered valid. When one is unsure if a vegetable was grown hydroponically or not, “*ha’adama*” should be recited. One should recite “*shehakol*” on a salad which has the majority grown hydroponically.



## Pesach

### May one use hydroponic vegetables at the Pesach Seder for the mitzvah of marror?

The *Gemara* in *Pesachim* (35b) states explicitly that one can fulfill the *mitzvah* of *marror* with lettuce or horseradish grown in a flowerpot (see *Chazan Ish Kilayim* 13:16). Likewise, HaRav Padwa (*Cheishev HaEifod* 3:9) rules that one can fulfill the obligation of *marror* using hydroponically grown lettuce. However, he concludes that in practice one should avoid using it, as it is a deviation from the *mesorah* (tradition) of our fathers who never used such lettuce. In addition to the abovementioned reason, one should preferably use romaine lettuce grown in soil at the *Seder* because the “*ha’adama*” recited on the *karpas* is not the ideal *bracha* for hydroponic romaine lettuce being eaten as *marror*<sup>4</sup>. However, one who can’t obtain bug-free lettuce grown in soil should certainly use hydroponic lettuce with a reliable *hashgacha* at the *Seder*.

### Summary

Ideally, one should avoid using hydroponically grown vegetables at the *Pesach Seder* for *marror*, but one may do so if bug-free lettuce grown in soil is not available.



1. Iglei Tal, *Dosh* #8 and *Sdei Chemed* *mareches chafklal* 100.

2. *Chazon Ish* as quoted by Rabbi Chaim Kanievsky zt”l, brought in *Orchos Rabbeinu* Vol. 3 p. 223, *Kovetz Halachos*, *Pesach* 24:6, *Hagaon Rav Shlomo Zalman Auerbach* zt”l as quoted in *Vzos Haberacha Birurim* #24, Harav Elyashiv zt”l as quoted in *Ashrei Ish* O.C. 36:29.

3. HaRav Shlomo Zalman Auerbach zt”l quoted in *Vzos Haberacha*, *birurin* 24, HaRav Ovadia Yosef zt”l in *Yechaveh Daas* 6:12.

4. Rav Yona Reiss suggests that this issue can be avoided if one can obtain a hydroponic vegetable to be used as *karpas*, in which case one would recite *shehakol* on *karpas*.