

# Instructions For Preparing Feeder Sugar Solution

Your first step will be to make sure your hummingbird feeder is clean and dry prior to preparing your feeder sugar solution. Go and download our [feeder cleaning instructions](#) to see how this is done.

The sugar solution will consist of granulated sugar and plain tap water, as shown below.



It is not necessary to use bottled or filtered water, and I would not recommend using distilled water (since the distillation tends to remove all of the minerals in the water). Bottled water can be used, but it will not produce better results than tap water. You may be tempted to experiment with other sugar substitutes like honey, molasses, agave syrup, corn syrup, turbinado sugar, fructose, sucrose, brown sugar, or any other sweetener that humans use for food preparation (and definitely don't use any of the diet sugar substitutes like Splenda, Stevia, Saccharin, Aspartame, or any other "artificial sweetener"). I would suggest that you stick with just granulated sugar (and not powdered sugar) since that has been shown to be closest to flower nectar, is the cheapest, and it has been proven out in the field over millions of applications.

A few words about the sugar solution before we start. Granulated sugar can be kept in an airtight container for an indefinite period of time. It will not go bad if it is kept dry. So, from a cost-cutting standpoint, it is worthwhile to buy and store larger quantities of granulated sugar, as opposed to buying smaller amounts like 12oz boxes, or even 5lb bags. I usually buy a 50lb bag at a store like Costco in order

to reduce my out-of-pocket costs (i.e., lower cost per pound), and to reduce the number of trips I have to make to the store to stock up on sugar. Storage of any excess sugar solution is also an issue. Excess sugar solution is subject to the growth of mold or other nasties if stored at room temperature for several weeks. Normally, if the sugar solution is only going to be stored in a clean container for a week at room temperature there should be no problem. Longer than a week, and you are at risk of running a petri dish science experiment. It is always safer to store any excess solution in an airtight glass container in the refrigerator if it may be kept for several weeks. Some folks may not have room for this storage method, so just remember not to store the solution at room temperature for too long.

The actual preparation of the sugar solution is pretty simple. The solution will consist of granulated sugar and heated water mixed together.

**Note: Regarding red coloring of the sugar solution. Even though you will commonly find "prepared" hummingbird solutions that are a nice red in color when mixed and added to the feeder (most new feeders come with a packet of red feeder solution), the red coloring additive is not necessary for attracting hummingbirds (contrary to the sales pitch on the commercial packets). So, suffice to say that you do not need a red solution to attract your hummingbirds, and you don't need to pay more for a prepackaged solution that has a red coloring additive. There is also a lot of discussion about whether the coloring additive is harmful to the hummingbird, but I have not seen any conclusive studies that back up this contention. Of course, as with our own food intake, the truism that "less is more" may also apply relative to this dispute.**



The normal ratio of water to sugar is four parts water to one part sugar (4:1). So, four cups of water to one cup of granulated sugar is one mixture example. You can also take this ratio as high as 2:1, or two parts water to one part sugar. I happen to use this ratio with the hummingbirds in my area simply because it seems to be more attractive to the black-chinned hummingbirds that we have with us year round. I would suggest that you experiment with the ratio that works for you, starting with the generally accepted 4:1 ratio. If you are having problems getting hummingbirds to show up, then gradually increase the sugar-to-water ratio until you get something that works. The process of preparing the water is simple. The water can be heated on a stovetop in a saucepan, or you can heat the water up in a microwave oven in a microwave-safe glass container, like a large Pyrex measuring cup or bowl.



You can bring the water to a boil if you wish, but it is only necessary to get the water hot in order to get the granulated sugar to dissolve.

[Note: There are a lot of recommendations out there to make sure that you boil the water first to eliminate any organisms in the water so that the sugar solution lasts longer before any mold or other growth can form. I have not found this to be necessary, but then again I usually have to replenish my feeders on a weekly basis due to the number of hummingbirds showing up all year. It won't hurt anything to boil the water first, but I have not found it to be necessary. If your water supply has a significant amount of chlorine in it, boiling may help to reduce the level of the chemical.]

For seven cups of water in a Pyrex measuring cup, I will put it in a microwave oven for 11.5 minutes, at full power, in order to adequately heat up the water. When the water is hot, you just need to add the granulated sugar to the water, and then stir the solution until the solution is clear. **Safety Note: I do not recommend allowing children under 10 years old to assist with this step due to the risk of scalding. Close adult supervision of this step is necessary regardless.**



The sugar solution will usually have a slight golden/yellow tinge once the sugar is dissolved (this will depend on the water to sugar ratio).



You can also experiment with adding a little bit more sugar than the 4:1 ratio calls for in order to come up with a sweeter solution. As mentioned earlier, I have found that a sweeter solution is quite acceptable to the hummingbirds in my area, and I think it may just give them a little bit more energy in return for their visit.

Prior to adding the sugar solution to the hummingbird reservoir, you should make sure that the solution has cooled down. This is especially important if your reservoir is made of plastic. I have known plastic reservoirs to deform and almost crumple/collapse when a hot sugar solution has been poured into them. Plus, there may be the issues of chemicals leaching out of the plastic if the solution is too hot. When filling a glass reservoir the solution temperature isn't as critical, but it is still a good idea to let the solution cool before using it. The other thing to consider is that hummingbirds don't appreciate finding a hot solution when they arrive at your feeder to feed (Even though, living in southern California, I have noticed that the sugar solution in the feeder can get rather warm during the summer. In our region the peak temperature can reach as high as 115° F, so I know that the sugar solution is reaching at least 105° F, and the hummingbirds still continue to feed during those times.).

**Safety Note: While the hot sugar solution cools, please keep it in a place that is out of reach for small children. A hot sugar solution can still produce a nasty burn, and small children, who are typically below kitchen sink level in height, are at great risk of pulling the hot sugar solution over on top of themselves. You can't be too cautious here!**

Adding the cooled sugar solution to the feeder reservoir is usually just a matter of pouring the sugar solution into the mouth of the reservoir. For a number of feeder models out there that have a very small mouth (like the glass ones that I use, and that you can see pictured below) you will probably want to use a small funnel to make sure that the sugar solution gets into the reservoir, instead of all over the sink. I have tried pouring directly into these small openings without the use of a funnel, but it is not easy, and accidental spills do happen.



#### Points To Remember:

- ✓ Your sugar solution will last longer in a clean feeder.
- ✓ Use tap water – nothing fancy needed here.
- ✓ Get the water hot prior to adding the granulated sugar – no need to boil.
- ✓ Use only granulated sugar – no substitutes.
- ✓ **Think safety with the hot water and hot sugar solution if children are anywhere in the vicinity.**
- ✓ Store any extra sugar solution in the refrigerator if it is not going to be used within a couple of days. If you keep the sugar solution stored at room temperature for several days or more it will get cloudy due to things beginning to grow, and it will need to be discarded.