A Few Burning Questions about Growing Saffron

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Many people are growing saffron for the first time this year and the corms are beginning to arrive. Growers are asking many basic questions about production. Because we have been conducting research for only 2 years, we don't have answers to all of these questions based on data. However, below we have provided some short answers based on our limited research and input from others who have been growing saffron for many years. As our research progresses, we will develop and revise our guidelines. Please recognize that the best way to grow saffron will vary depending on where and how you are growing it. You will have to make decisions with this in mind.

1. **How deep should I plant the corms?** It depends on the soil and location. In general, it is recommended to plant corms 6 inches deep (Fig. 1). If the site tends to be wet, you may want to plant them 4-5 inches deep. If you live in a cold climate, you may want to plant them deeper to avoid freezing.

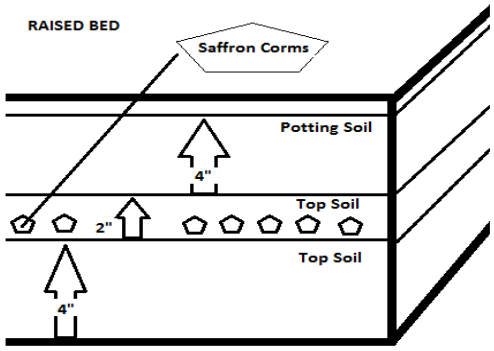

Fig. 1. Position of saffron corms planted in a raised bed at the Vermont research site.

2. **Should I use fertilizer in the hole or furrow when I plant the corm?** The general recommendation is do not use fertilizer. Too much nitrogen may stimulate leaf development, not flowers. We have not studied this question, but it makes sense. As you can see from the diagram (Fig. 1), we planted corms in top soil and added a layer of perennial potting mix containing compost and top soil. The potting mix was not in direct contact with the corms, but provided some slow-release nutrition over the year.

Fig. 2. Corm showing top and bottom.

3. **Which end is up?** It is important to plant the saffron corm right side up. It is fairly easy to tell the top from the bottom. Corms are usually somewhat pear-shaped, broader at the bottom, and tapering to a point (Fig. 2). Often there is a slight indentation in the bottom of the corm where it was attached to the mother corm.

4. **How do I plant the corms?** We have investigated several manual methods for planting corms. We found that a 4-ft hardwood stake with a pointed end worked the best (Fig. 3). We marked the stick at 6 inches so we knew how deep to make the hole. The stick made a larger hole than a commercially-available dibber, which allowed us to easily place the corm in the hole right side up, and then cover the hole with soil. After planting the bed, we tamp the soil down to make sure it comes in contact with the corm. Alternatively, you can make a deep furrow with a hoe, lay the corm at the bottom and cover over the corm with soil. However, it is hard to keep the corm upright with this method. One grower used a mechanical onion planter, pulled by a mule, which apparently worked well with a bit of adjustment.

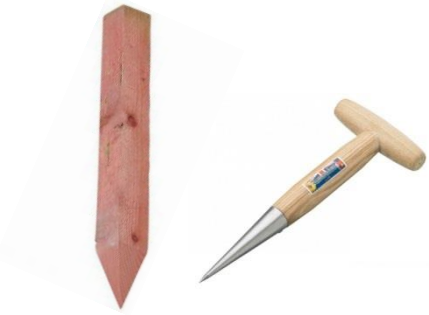

Fig. 3. Tools to make the hole; hardwood stake (left), dibber (right).

5. **Should I treat the corms with a fungicide before planting?** Probably not. If the corms were purchased from a reputable supplier, this should not be necessary. They make sure the corms are relatively free of disease. Any corm with signs of disease (black or soft spots) should be discarded. Don't plant it.

6. **Should I soak the corms in water before planting?** No. If the soil is very dry, you should water it before you plant. At a later date we can discuss the matter of how much to irrigate, and how often. That topic is up for debate.

7. **Are thrips a problem for saffron flowers?** Thrips are tiny insects that feed by sucking the sap out of plant tissue (Fig. 4). They also thrive on pollen and nectar from flowers. We observed a few thrips at our VT research site, but they didn't appear to cause any damage. This issue may vary with location. We will be conducting research in the future on thrips management in high-tunnel saffron production, but for now the best approach is to scout the flowers occasionally for signs of thrips. If you notice an insect problem of any kind, let us know.

Fig. 4. Western flower thrips on the petal of a marigold.

8. **Will deer eat the leaves or flowers?** We have been told by a grower in Massachusetts (where deer are numerous) that they will not eat saffron foliage or flowers. Please report to us if you have a different experience. Based on this information it shouldn't be necessary to put up a fence to keep deer out.

9. **How do I protect the saffron from rodents and small mammals?** These are the most serious damaging agents we have observed in our research so far. We used hardware cloth at the base of the raised bed to keep voles out. It worked very well. We observed minimal vole damage in the crates. To keep squirrels and rabbits out of the beds we cover the beds with plastic deer netting. The netting should be held above the plants with stakes, and the edges should be firmly secured so they can't get in. I suggest you check out the presentation about saffron pests on our website: http://www.uvm.edu/~entlab/Saffron/Saffron%20Workshop%202017/SaffronPests-ArashG.pdf

10. **Will cutworms damage the flowers, leaves or corms**? We have not observed that, but it is possible. It is critical that growers keep checking the saffron beds regularly for any type of damaging agent. Because this is a new crop in most parts of the US, there are bound to be unexpected problems.

11. **Should I mulch?** This is a question that requires research. I know one grower who used white pine needles to mulch his saffron bed and found that corm development was less in that bed compared to one without the needles. That could be due to changes in pH or chemical exudates from the needles. A grower from Pennsylvania strongly believes using wood chips or bark mulch is bad for the corms. Other growers have mentioned that mulch attracts rodents that damage the corms. Based on all of this anecdotal evidence, at this point, it may be best not to mulch. If you need to protect your corms from cold, it may be better to use some sort of row cover or low tunnel structure.

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