

Is Mulch Necessary?

The Effects of Planting Lilies with Mulch

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The question of whether it is necessary or useful to plant lilies with a layer of mulch may have crossed many a gardener's mind, but little actual research has been done on the subject. After all, adding mulch may be expensive and time consuming, but is it worth it? The Olds College, funded by the ARLS, addressed this question in the three year long pilot experiment that took place in the years 2009 to 2011. [i](#)

In the Olds College Lily Trials, three mulch trials were developed. Six cultivars were tested, with two bulbs of each cultivar grown and measured per trial. In one plot, bulbs were planted at a fifteen cm depth and had no mulch layer, meant to act as a control. In the remaining two, the bulbs were planted at a fifteen cm depth with a five and ten cm mulch layer. As the lilies grew, their emergence date, height, bud count, date of first bloom, flower count, and date of last bloom were recorded. The measurements of each lily cultivar were compared to one another to see if there were any discernable differences in the growth performance of the mulch trials versus the control.



No mulch



5 cm Mulch



10 cm Mulch

Attached are numerous graphs highlighting the heights, peak bud count, peak flower count, and bloom time span of all cultivars within each mulch trial over the three years. These graphs are formatted to compare the control mulch trial ("No Mulch") with the 5 cm mulch and 10 cm mulch trials. [ii](#)

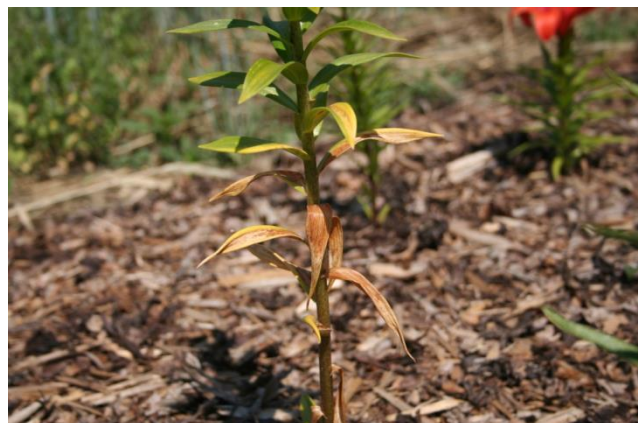
Our results suggest that growing lilies with mulch is unnecessary, and may even have negative effects on the performance of the lilies when laid too thickly.

As mentioned in a previous articleⁱⁱⁱ the presence of mulch affects the emergence dates of the plants. That is, bulbs planted with mulch emerged later than those planted without mulch. While plants with a 5 cm mulch layer typically bloomed at the same time as the control, plants with a 10 cm mulch layer generally bloomed a couple weeks later.



Crimson Pixie in 5 cm mulch

Three lily cultivars, 'Crimson Pixie', 'Connecticut King', and 'Gran Pariso', were generally taller when planted with no mulch covering than with a 5 cm or 10 cm mulch layer. On the other hand, 'Fangio', 'Royal Club', and 'Orange Upfacing' were taller when planted with a 5 cm mulch covering. Throughout the three years, plants with a 10 cm mulch covering were variable- sometimes they performed well and sometimes they experienced slightly stunted growth. In 2009 it was noted by summer student Daniel Chappell that lilies planted with 10 cm mulch showed some signs of chlorosis, or yellowing, in the first few weeks of growth, however as the growing season progressed they soon became healthy looking plants.



Lily in 10 cm mulch



Lilies in 5 cm mulch

It was also observed that some plants of the mulch trials did not even grow, or experienced stunted growth. In 2009, 8.3% of the mulch trials lilies did not grow or had stunted growth, in 2010, that number doubled to 16.6% of plants, and in 2011, the number dropped again to 5.5% of plants. It is unclear as to why the percentage greatly increased in the year 2010. Note the plants that had stunted growth or did not grow were either in the five cm or the ten cm mulch trial, not in the control group.

What really makes a lily is the flower. So did the addition or absence of mulch affect the blooms? After comparison within each cultivar of the peak bud and flower counts and bloom time spans of the plants within each trial, it was found that ten cm of mulch has a negative effect on the production of buds and flowers, as well as the amount of time the plant retained the flowers. Bulbs planted at fifteen cm depth with a ten cm mulch layer consistently produced fewer buds and flowers over the years than the control. Bulbs planted at fifteen cm depth with a five cm mulch layer typically experienced similar bud and flower counts as the control.



Royal Club in 5 cm mulch

The addition of mulch to gardens may be useful for weed control and water retention. The mulch layer blocks sunlight to the soil surface, inhibiting weed germination, and preserves the soil moisture by preventing evaporation. It also insulates the soil, keeping it at a steady, cooler temperature.^{iv} These are factors worth considering when deciding whether or not to lay a layer of mulch in the garden, however, the positive effects on the growth of lilies in mulch are minimal. The trends observed in the Lily Trials suggest that while planting lilies with (no more than) five cm of mulch is acceptable, it is not necessary for growing healthy lilies.

ⁱ For more information on the experiment, please refer to the [Olds College Lily Trials](#) preliminary article

ⁱⁱ [Mulch Trials Performance Comparison](#)

ⁱⁱⁱ [The effect of planting depth and mulch presence on the emergence and flowering dates of lilies](#)

^{iv} Benefits of Mulch; Contra Costa Water District, <http://www.ccwater.com/files/Drought101Mulch.pdf> (accessed Aug 20, 2012)