



RESEARCH NEWSLETTER



This Flower Bulb Research Program Newsletter is published by Anthos, Royal Dutch Trade Association for Nurserystock and Flowerbulbs in cooperation with Dr. Bill Miller of Cornell University.

Easy, Large Scale Tulip Planting No Digging!

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Everyone welcomes tulips in the spring landscape! Their bright colors, form and the unmistakable signal of spring after a long and dreary winter are loved by all. Not without their problems, however, as we are all too familiar with the deer issue, for which we have no perfect solutions.

Another issue, not limited to tulips, is the work involved in their planting in the fall. No doubt about it, gardening is good, healthy exercise, and avid gardeners enjoy being outside and the labor involved in planting bulbs.

But, can we make bulb planting any easier? Can we come up with ways to make it easier for people? Can we find methods that might allow more people to plant more bulbs more often without sacrificing their long-term potential in the garden? Perhaps this newsletter, which highlights an old method, might offer at least one solution.

Based on a meeting in Holland in June, 2008, it was decided to install experiments to look at planting and mulching depth on perennialization of tulips. In the fall of 2008, and again in fall 2009, we installed plots with planting depths ranging from 0 " (bulbs placed onto bare, tilled ground) to 8" deep. There were 16 bulbs per plot, spaced 5" apart. Plots were then mulched with 0, 2, 4 or 6" of double ground hardwood mulch using a 36" x 36" frame that was 2, 4 or 6" high to provide uniform mulch depth on the plots. Each combination of planting depth and mulch had 2 replicate plots per cultivar.

Tulip cultivars 'Ad Rem' and 'Negrita' were used. These were selected based on trials from North Carolina by Paul Nelson that suggested these cultivars were both "good perennializers".



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The newsletter is distributed in North America by the North American Flowerbulb Wholesalers' Assn, 2424 Hwy 72/221 E, Greenwood, SC 29666, email: nafwa1@aol.com



Before planting, the area was tilled to 8" deep, and a slow release bulb food (Bulb Tone, 4-10-5) was incorporated at the recommended rate. After plants flowered each spring, they were allowed to continue growth, and held fallow over the summer. All water was from natural rainfall, no irrigation was used. In the fall, the mulch for each plot was reestablished to the original height (2, 4 or 6") as needed. Bulb Tone fertilizer was top-dressed over the entire area in the fall of 2009, but no fertilizer was applied thereafter.

In this newsletter, we will focus on the 0" planting depth plots, based on 3 years of flowering. Essentially, this was a "top planting" or a "drop and cover" approach. The idea is simple: till the area, place bulbs on the tilled soil (no digging!), then cover with 2-6" of mulch. While this is an easy way to plant, we were interested to find out whether this would reduce the perennialization potential of the bulbs.

What we found

Quite simply stated, "top-planting" and mulching was found to be an excellent method to plant tulips, and to also allow their perennialization. Obviously, no bulbs survived the top-planted plots with no covering mulch, these were likely the result of animals making off with them.

Bear in mind, this trial was done in USDA climate zone 5, which is cold. There was no evidence of injury from ground freezing over the three years.

The pictures nearby show the same plot, for years 1, 2, and 3 and the tables give the number of flowers per year for the experiment. There were 16 bulbs originally planted

per plot, and most treatments gave an increase in the number of flowers. For Negrita, top planting with 2 or 4" of mulch had an average of 2 flowers per planted bulb in year 2 (2010). For both cultivars, by year 3 (2011), there was at least 1 flower per planted bulb, and most treatments averaged 1.5-1.8 flowers per original bulb.

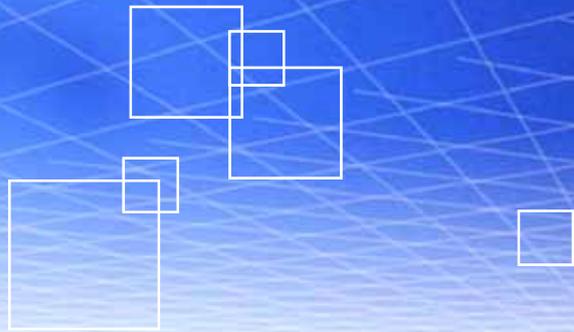
By year 3, all plots had at least two categories of flowers. Some were very large, huge plants (Probably coming from very large bulbs in the ground!) and a smaller, shorter "understory" of color. In the tables, the total number of flowers are given for 2011, then the last column lists the number of the very large flowers per plot. In general, there is 0.5 -1 of these very large plants per original bulb. I think this is acceptable for a three year trial.

To summarize, it is clear that top planting with mulch, is a good way to go. Customers can be advised that "top planting" is a good way to go!

Here's what they should do:

- Till the area 3-4" deep with a tiller
- Spread a bulb fertilizer, if possible, and till again
- Place bulbs on top of the tilled area. (Resist the urge to press them in, this could damage the bulb base)
- Cover with 2-4 inches of aged mulch or well rotted compost.

There are a couple of limits to this study. We really can't say whether or not top planting with mulch is better than normal planting, since the experiment was not large enough to accurately test this. However, visual inspection of the plots clearly shows the good quality and vigorous growth seen in the top planted plots.



Ad Rem 0" planting depth 0" mulch

Deeper mulch was not better, as the tables suggest a decrease in the number of flowers in the third year (2011) as mulch depth increased from 2 to 6". This study does suggest top planting with top dressing with 2 to 4" of mulch to be the best approach.

Over time, an organic mulch will decompose and release some nutrients and organic matter into the soil. In this trial it is very likely the mulch has decomposed quite a lot, as fresh mulch has been added each fall. We made no attempt to add extra fertilizer to the non-mulched plots.

Ad Rem. Effect of different depths of mulch after "top planting" on the number of flowers (from 16 original bulbs planted in 2008).



Year 1 Image 2149.

Total number of flower per year				
Mulch depth (inches)	2009	2010	2011	Number of large stems in 2011
0	0	0	0	0
2	14	17	28	17
4	16	20	20	11
6	14	19	16	11



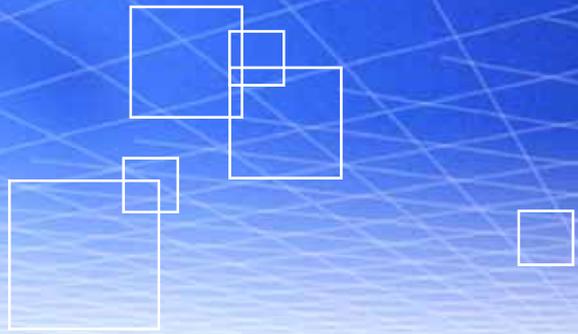
Year 2 Image 1549.

Negrita. Effect of different depths of mulch after "top planting" on the number of flowers (from 16 original bulbs planted in 2008).

Total number of flower per year				
Mulch depth (inches)	2009	2010	2011	Number of large stems in 2011
0	1	0	0	0
2	14	32	28	11
4	14	33	21	10
6	12	22	17	8



Year 3 Image 1083.



0" planting depth 2" mulch

0" planting depth 4" mulch



Year 1 Image 2145.



Year 1 Image 2157.



Year 2 Image 1553.



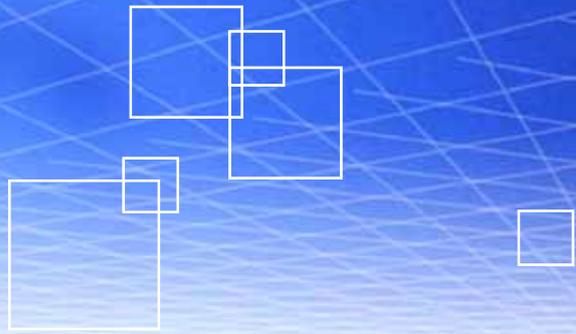
Year 2 Image 1541.



Year 3 Image 0187.



Year 3 Image 0175.



0" planting depth 6" mulch

Negrita 0" planting depth 0" mulch



Year 1 Image 2142.

Year 1 Image 2133.



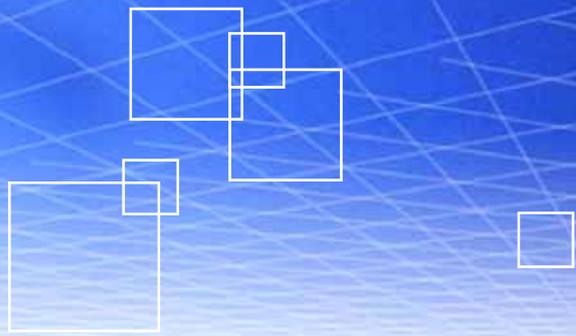
Year 2 Image 1556.

Year 2 Image 1533.



Year 3 Image 0190.

Year 3 Image 0166.



0" planting depth 2" mulch

0" planting depth 4" mulch



Year 1 Image 2134.

Year 1 Image 2135.



Year 2 Image 1534.

Year 2 Image 1535.



Year 3 Image 0167.

Year 3 Image 0168.

0" planting depth 6" mulch



Year 1 Image 2136.



Year 2 Image 1536.



Year 3 Image 0169.