

THE HOOKER VARIATIONS CLASSIC, NEW, AND DIET

Revisiting The Hooker Formula

Editor

The classic Hooker fertilization formula was first published in 1978. It has been frequently referenced in newsletters, robins, and the journal. Over the years it has been modified, adapted, and varied to the extent that many people claim to use it but no longer know what the original recipe is. I felt it was time to level set our readers by republishing the original and also giving some variations and adaptations that others have found successful. As you will read, even the late George Hooker sometimes used other ingredients, or suggested that we certainly could.

In our own region, John Lambert has seen fit to add Slug-It, a liquid slug killer. I tend to add a fungicide like Benlate, or Zineb, plus Seaborn liquid seaweed in place of the Epsom salts. Stuart Morton of Region 3 basically has adapted the standard formula to an easier delivery system which is reprinted in this issue. I note with interest that Stuart does not use Cygon in his recipe for personal reasons. I have in the past, but would never think of using the concentration noted in the original formula. More on that in a minute.

For several years I have used the lighter spray application in a manner similar to that described by Nell Crandall of Texas. It is quicker, easier, and cheaper to apply. I feel the foliar feeding wastes less of the ingredients while putting them directly to work. I also add a spreader/sticking agent. I try to spray in the Raleigh area about March 1, April 15, and June 1. Nell's article is reprinted for your consideration. She also graciously provided a follow-up evaluation just for us.

So, you have some choices: the *Classic Hooker* (original formula), the *New Hooker* (variations in ingredients and means of delivery), or the *Diet Hooker* (light spray application). Give your daylilies the taste test this season.

Since writing this introduction, I have made the personal decision to drop the use of Cygon and other pesticides, and industrial by-products formerly used in my garden. In recent months I have read of the dangers of Diazinon to our feathered friends, Chlordane to our livers, and the cadmium in Milorganite to our brains and nervous systems. Even that trusted old friend, 2-4-D, is now said to be a carcinogen. Erling Grovenstein, a chemist from Region 5 who does not use insecticides, writes in his newsletter that "all insecticides are likely toxic to people as well as to insects..." He further says, "Can it be that some of us are hooked on insecticides or are covetous of blue and purple ribbons?" Well, I must admit to a love of those show ribbons, and I have a box full that prove I have used chemicals effectively. The challenge now will be to try and win some without chemicals. Even if I cannot, it is a small price to pay for better health, and more birds and butterflies. Thus, to balance this series, we shall discuss another option elsewhere in this issue - the organic and biological way to pest control.

Philosophy Of Fertilizing

George Hooker

(Reprinted From Region 3 Newsletter, Spring 1978)

Long ago I gave up on the use of solid fertilizers and adding the individual ingredients to each plant. It is a tedious, time consuming method, and there is no way to get even distribution throughout the plants' root systems. Finally, adding solid materials through a two inch mulch is a pain in the neck.

The dilute solution I use distributes itself nicely throughout the root area of the plant. An important point - no part of the root system is in contact with a strong fertilizer solution which can cause fertilizer burn. Although the fertilizer solution is available at once, the plant takes only what it needs and the bulk of the fertilizer material is absorbed by the soil particles, and stored for future use. This stored fertilizer will be leached out by subsequent rains or watering and thus be available to the plant in solution form. Always remember that the roots of a plant can drink but cannot eat.

For 15 years I have grown more than 500 plants, roses and daylilies, and recently it has been more than 800 plants. Therefore, I need an efficient and orderly fertilizing system to keep the time and labor down to a reasonable figure, and at the same time add the desired amounts of material to each plant.

Fertilizing Method

Make up 5 gallons of stock solution:

- 1 - 2 lb. coffee can of Peter's 15-30-15
- 1 - 2 lb. coffee can Fish Emulsion
- 1 - 6 oz. can Epsom Salts - Magnesium Sulfate
- 1 - 8 oz. can Cygon
- 1 ounce Sequestrene - Iron Chelate

These materials are all water soluble. Water is added to the 5 gallon mark while stirring. One 12 oz. can of stock solution contains the desired amount of each ingredient for 1 large rose bush or 1 daylily clump. For miniature roses or a small 1 - 2 fan daylily clump I use a 6 oz. can of stock solution. The 5 gallons (640 liquid oz.) is enough for 53 plants (12 oz. can each) or 106 plants (6 oz. can each).

Note: I do NOT, repeat, do NOT apply the stock solution to the plants.

The Actual Procedure

In practice, the job is best done by two persons - 1 easy job and 1 active job. A large garden cart (or wheelbarrow) near the bed contains the 5 gallon can of stock solution, 3 or 4 ten quart pails, a 12 oz. can and a 6 oz. can. Person #1 (easy job) holds a running water hose (fast enough to fill up a ten quart pail in a minute or less) and also dips (rubber gloves) a can full of stock solution into each pail.

Person #2 (active job) lifts the full pails from the cart and pours the dilute solution into the soil at the base of each plant. By working hard, it is possible to fertilize 100 plants per hour, but 50-60 plants per hour is an easy pace and will take care of my 800 plants in two days.

But in those two days the plants have:

- (1) been watered, and
- (2) have been fertilized for the next six weeks, and
- (3) have been protected from sucking insects for a month to six weeks.

Of course, for the system to work, the soil should be loose and friable, as it should be anyway, so the solution will soak into the ground and not run off. Sometimes if the soil is hard, I cultivate around the base of the plants before starting to fertilize. Usually this is not a problem for I like to add cow manure in the fall or winter and also use a ground corn cob mulch so the ground is receptive and the solution goes right through the mulch (no problem). Also I pour the dilute solution right into the center of a daylily clump with no harm to the foliage.

Purpose Of The Components

The 15-30-15 soluble fertilizer is a good growing composition and the high phosphate corrects a general phosphate deficiency in the Pittsburgh area soils. Not only that, but the solution distributes the phosphate throughout the root area which solid phosphate fertilizers cannot do. If you think this is too much nitrogen, change to 9-45-15 plant starter for May 15 and July 1 application (41% less nitrogen).

The Fish Emulsion adds hormones, vitamins and promotes vigorous growth. The Epsom Salts supplies magnesium, in soluble

form, required in photosynthesis. The Sequestrene supplies iron required in photosynthesis. Iron also gives deeper and richer colors, desirable in most cases, notably lavenders, purples and pinks. Too much iron, however, does not improve bright scarlet roses and daylilies. The resultant deeper red is not nearly so bright. The Cygon protects roses and daylilies against sucking insects like aphids (deadly) and thrip. Roses are protected against rose midge. Cane borers often start to drill a rose cane protected with Cygon and quit after about 1/4 inch without laying eggs. Maybe they do not like the taste of Cygon.

Sometimes I add a growth hormone, or a soluble seaweed to the brew. You can add your own magic components.

Time schedule for Pittsburgh climate (just a reasonable guideline):

Daylilies

March 15 - April 1

May 15

July 1 *

Roses

March 15- April 1

June 1 *

July 15

Sept. 1 *

* About 2-3 weeks before show time.

At current prices, March 1978, the components for one application to my 800 plants cost about \$80 or about \$300 per year.

In Conclusion

This is my system. It works for my conditions. The plants grow luxuriously. It is not a rigid system, so you can modify it for your conditions. Good Luck.



CLASSIC HOOKER - getting wrapped up in your hobby

How I Fertilize

A. Stuart Morton, Media, PA

(Reprinted from Region 3 Newsletter, Spring 1986)

Since my garden is an American Hemerocallis Society Display Garden, I get more than the usual number of visitors each year. Several hundred daylily lovers will look the cultivars over, make notes, take pictures and ask many, many questions. One of the most frequent is, "What do you feed your plants to get such bloom?" My answer is usually in two parts. First, I will talk about the importance of water and its relationship to good bloom. Then I will tell them about George Hooker's *Philosophy of Fertilizing* (Region 3 Newsletter, Spring 1978, *The American Hemerocallis Journal*, Sept. 78).

My soil is a porous loam to which I have added leaves, compost and grass clippings before the daylilies took over. It dries out rapidly after a rain so I have used drip irrigation to keep the soil moist. In the month before peak bloom I may water every day if it is hot or dry. The increase in quality and quantity of bloom is significant.

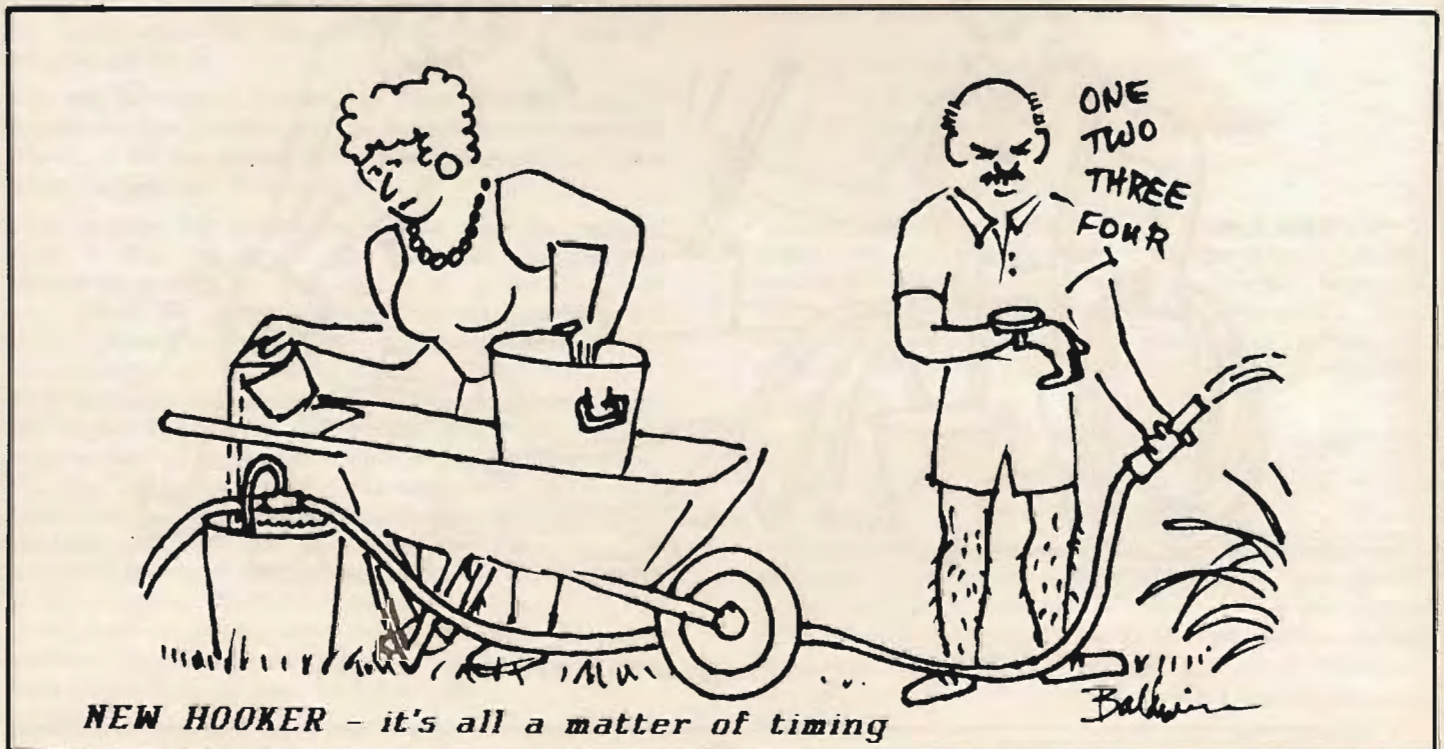
I started using the *Hooker Method* several years ago. The Cygon ingredient was left out for personal reasons and I fed the plants only once a year. As the number of clumps increased to 600 and the seedling area grew, the size of the job began to concern me. A 10 quart bucket of water weighs about 20 pounds. That meant that I would carry over 6 tons of water during the weekend (600 clumps x 20 pounds = 12,000 pounds - 2000 pounds/ton = 6 tons). No wonder I was tired on Monday!!!

I saw an advertisement in a garden publication for a "Hyponex Brass Siphon Mixer"; cost, less than \$10.00. The mixer would add 16 times as much water to a solution in a 10 quart bucket. My problem was solved! All I had to do was calculate how much to dilute the basic stock solution and figure how long it would take to put 10 quarts of solution on a clump. Now instead of carrying tons of liquid I could spend the day walking up and down the rows of daylilies with a hose in my hand, counting to 40 and enjoying a day in the garden (My wife, Betty, keeps the concentrate bucket full).

Here is how I do it. I take a large plastic trash can (32 gallon capacity) and put it in my wheelbarrow. This enables me to move freely about the edge of the garden. Five gallons of water is measured into the trash can and the ingredients are added. I stir the mixture with a stick to dissolve the materials. An additional 13 quarts of plain water is added to make the proper concentrate for the mixer. This mix is removed by the bucketful and poured into another container in which the siphon is placed. The siphon is placed between 2 sections of garden hose with not more than 50 feet of hose between it and the open end or nozzle. The small black suction hose is dropped into the concentrated mix and the water is turned on. With average water pressure, one gallon of concentrate will be discharged at the hose end with 16 gallons of water. One gallon of concentrate should be drawn through the mixer every 5 minutes. At this rate, each clump should get about 40 seconds of the diluted mix. To prove out the timing, take an empty 10 quart bucket and see how long it takes to fill it. The proof of our calculations is as follows:

Start	20 quarts of stock solution
Add	13 quarts of plain water
Result	33 quarts
At 16 to 1 we add	528 quarts plain water
Result	561 quarts diluted solution

At 10 quarts per clump, we have fed 56 clumps. The hand method by Hooker fed the same stock solution to 53 plants. In my large garden I usually make 2 batches at a time. It saves time this way and the strain on the human body is minimal.



Evaluation Of The "Diet" Hooker Formula

Nell Crandall, Houston, TX

As I mentioned in my article in the Region 6 Spring 1986 Newsletter, I sprayed my daylilies with a watered-down version of the Hooker formula, using approximately 1/26th the amount that Mr. Hooker used. I sprayed in March and again in April. The spraying in May never got done. In the second spraying in April, I used more Cygon than Mr. Hooker had in his recipe. I mixed up the formula as Mr. Hooker did, leaving out the Cygon 2-E, and then added 4 T. of Cygon 2-E for each 6-gallon sprayerful. The small amount of Cygon in the Hooker formula is really not strong enough for the bug population in Houston.*

I was pleased with the results. I had more bloom than I have ever had. The color was brighter, and I had more rebloom than I have ever had. However, everyone in this area had more rebloom than they have ever had. We had good rains in June, so the Hooker formula may not have been a factor there. I think it takes more than one bloom season to evaluate, because more first bloom could also be attributed to the weather. I do believe the extra brightness in the color is due to the Hooker formula.

My friend, Joan Oglesby, who used the spray formula also, and used some of the formula full-strength, had much more bloom and branching than I did. She had much taller scapes. In fact, they were much too tall for her liking. She thought that she must have gotten an extra concentration of the Hooker formula on those plants that grew extra tall.

I am going to try the *Diet* spray again in the Spring of 1987 and do some further evaluating during the next bloom season.

** Editor's Note: One point must be clarified. Like Nell, I realized that the dosage of Cygon in the soil drench stock solution was not effective when lightly applied through a sprayer. However, do not take her remark about "the small amount of Cygon in the Hooker formula" out of context. Do not confuse the amount in the concentrate with how much is actually delivered per plant via the diluted solution. I feel that that chemical is too toxic (over twenty-six times as toxic as Malathion when absorbed through the skin according to a table published by Patricia Steinborn in the Region 11 newsletter) to risk drenching my soil with the amount specified in the original formula. It would require something close to 2.5 gallons of Cygon for three applications of the original formula to 700 plants. I would never feel that I could touch the soil with bare hands if I did that. Using the original stock solution as a spray would reduce that to about 12 ounces per season if used per Nell's method on 700 plants (2 1/2 gallons of concentrate would have 4 ounces x 3 sprayings = 12 ounces) and I can see that it might not be enough. In the past I have never used more than 8 ounces per year in Raleigh, but then I have only 350 plants, seldom make all three sprayings due to a simple lack of time, and do not use as much stock solution as Nell. I have used Nell's suggestion of 4 T. per 6 gallons of diluted spray which is within the manufacturer's recommended guidelines for plants like iris and roses - daylilies not being on the list of authorized plants, naturally. If I compute it correctly, Nell is therefore applying Cygon at the rate of about 22 ounces per application, or about 1/2 gallon per year, about 1/5 what would be applied via the original soil drench method.*