



HOME FORCING OF HYACINTHS

Gwendolyn H. Pemberton, former Graduate Research Assistant
A. A. De Hertogh, Professor

Causing spring-flowering bulbs like hyacinths to flower by other than naturally occurring conditions is called *forcing*. This practice is carried out world-wide by commercial flower growers. With planning and effort, any homeowner can have a steady supply of bulb flowers from late December through April. Forcing bulbs is a rewarding challenge to those interested in the growth and development of plants.

General Information

The key steps required to force hyacinths are very simple and are listed below.

1. Table 1 lists some cultivars which are highly suited for winter and early spring forcing. The proper forcing cultivars (cultivated varieties) and type of bulb preparation must be selected for the desired flowering periods. This is necessary since all cultivars are not suitable for all flowering periods.
2. The bulbs must be planted, rooted, and given a cold treatment with temperatures ranging from 35 to 48 °F for a minimum of 10 weeks for Prepared (PR) bulbs and 13 weeks for Regular (RG) bulbs.
3. After being rooted and properly cooled, they can be placed in the home. On the average, the bulbs will take about 2 to 3 weeks to flower. During this time homeowners can enjoy the growing plants.

Materials Needed

Bulb Selection

The selection of the proper cultivars and type of bulb preparation for the desired period is very important. Table 1 lists several cultivars which are suitable for the various winter and early spring months and whether Prepared (PR) or Regular (RG) bulbs are most suitable. Prepared (PR) bulbs are recommended for early forcings, while Regular (RG) bulbs are suitable for late forcing. It is strongly suggested, since some cultivars may be in short supply, that bulb orders be placed in the spring to make sure they are available and ready for fall planting. This is very critical for the Prepared bulbs for early forcing.

Planting Medium

The planting medium anchors the bulbs and retains moisture. It must be well-drained and yet retain sufficient moisture for growth. An example of a suitable planting medium is a sterilized mixture containing equal parts of loamy soil, peat, and sand. Fertilizer should not be added to the mixture.

Containers

Use clean pots with adequate drainage holes. Four to eight inch diameter pots can be used. If previously used, scrub the pots and rinse them thoroughly. If they are new plastic pots, be sure the holes in the bottom of the pot are open. When clay pots are to be used, soak them overnight so they will not draw moisture from the planting medium.

Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Employment and program opportunities are offered to all people regardless of race, color, national origin, sex, age, or disability. North Carolina State University, North Carolina A&T State University, U.S. Department of Agriculture, and local governments cooperating.

Procedures

Handling of Bulbs Prior to Planting

It is extremely important that flower bulbs be handled with care at all times. They are living plants and should not be dropped or subjected to extremely high or low temperatures. After arrival or purchasing, keep the bulbs well-ventilated and away from ethylene producing fruits, e.g., apples. If they are in paper bags, open the bags for maximum air movement. Whenever possible, store them in open trays. Keep the bulbs in a room with temperatures between 45 to 50 °F. Bulbs can be stored for several weeks at these temperatures. Temperatures above 63°F should be avoided at all times before planting.

Planting

This can take place from mid-September to December, depending on the desired date of flowering, and the cold storage system used. As a general rule, for early flowering, plant early, and for late flowering, plant late. Remember, the minimum length of the total cold treatment should be 10 to 13 weeks (see Table 1 for optimal cold-weeks for the cultivars).

If bulbs were held at 45 to 50 °F (precooling) prior to planting, this time contributes to the total number of cold weeks. Thus, if bulbs were pre-cooled for 3 weeks before planting, they only need 7 to 10 additional weeks after planting.

For flowering in late December, planting must be done in mid-September. For February flowering, the bulbs should be planted in mid-October, and for March and April, in mid-November.

When planting, the pot should be loosely filled with enough planting medium so the top of the bulbs will be even with the top of the pot. Place 1 hyacinth bulb in a 4-inch pot, 3 bulbs in a 6-inch pot, and as many as possible in larger pots. They can be planted bulb-to-bulb. **NOTE OF CAUTION:** Hyacinths contain oxalic acid which can produce an irritation of the skin. Thus, before planting hyacinths, it is advised to thoroughly wet the bulbs, in order to reduce the potential of skin itch. Also, wear gloves for protection.

Do not press the bulbs into the planting medium! It should be loose so that rooting can take place quickly. When covering the bulbs, do not overfill the pot! Fill only to within 1/4 inch of the top, so the plants can be easily watered. Place a label in each pot with the name of the cultivar, date of planting, and date to be placed in the home.

Cold Treatment

After planting, water the pots thoroughly and place them in a refrigerator at 35 to 45 °F. The medium should be kept moist throughout the rooting and cooling period. After 5 to 6 weeks, roots should grow out of the holes of the containers. The shoots will subsequently emerge from the bulbs.

After a minimum of 10 to 13 weeks of cold (Table 1), the first bulbs may be placed in the house. Longer cold storage will result in taller flowers, while storage periods shorter than the required 10 to 13 weeks will result in smaller plants and sometimes aborted or malformed flowers. If the first planting of Prepared bulbs was made in the middle to end of September, the first plants may be taken into the house before Christmas. For a continuous supply of flowers, bring in a few pots at weekly intervals.

Forcing the Bulbs

In the house, place the plants in a 60°F area. For best results, place them in direct sunlight. The plants require about 2 to 3 weeks to flower. Once the flowers begin to open, take the plants out of direct sunlight. The flowers will last longer. Since the bulb contains all the plant food it needs, it is not necessary to fertilize it. Spring flowering bulbs that have been forced indoors are usually of little value for outdoor plantings. Hyacinths, however, can be placed outdoors as soon as spring arrives. Many of them will flower after 1 to 2 years in the garden.

For Further Reading

De Hertogh, A. A. 1996. *Holland Bulb Forcer's Guide*, 5th ed. International Flower Bulb Centre, Hillegom, The Netherlands.

For additional floricultural information, contact your County Extension Center.

Table 1. Hyacinth cultivars for home forcing in winter and early spring.

Color	Cultivar	Optimal Cold-Weeks		Suggested Forcing Periods				
		Prepared Bulbs	Regular Bulbs	Dec	Jan	Feb	March	April
<i>Blue</i>	<u>Atlantic</u>	10	13-14	PR	PR	RG	RG	--
	<u>Blue Star</u>	10-11	14-16	PR	PR	RG	RG	RG
	Delft Blue	10-11	13-15	PR	RG	RG	RG	--
	<u>Ostara</u>	11-12	14-16	PR	RG	RG	RG	--
	Viking	9-10	--	PR	PR	RG	--	--
<i>Pink</i>	<u>Anna Marie</u>	10-11	13-14	PR	RG	RG	RG	--
	Lady Derby	--	14-15	--	--	RG	RG	RG
	<u>Marconi</u>	--	16-19	--	--	--	RG	RG
	<u>Pink Pearl</u>	11-12	14-15	PR	RG	RG	RG	RG
	<u>Pink Surprise</u>	--	15-17	--	--	RG	RG	RG
<i>Light Pink</i>	Champagne	--	16-17	--	--	RG	RG	RG
<i>Red/Rose</i>	<u>Amsterdam</u>	11-13	14-16	PR	RG	RG	RG	RG
	Jan Bos	10-11	13-14	PR	RG	RG	--	--
<i>Violet</i>	<u>Amethyst</u>	--	16-19	--	--	--	RG	RG
	Anna Liza	11-12	13-15	PR	PR	RG	RG	--
<i>White</i>	<u>Carnegie</u>	14-15	14-16	--	PR	RG	RG	RG
	L'Innocence	10-11	13-14	PR	RG	RG	--	--
	<u>Polar Giant</u>	--	15-16	--	--	RG	RG	RG
	<u>White Pearl</u>	12-13	14-15	PR	PR	RG	RG	RG
<i>Yellow</i>	Yellow Queen	--	15-16	--	--	RG	RG	RG

Underlined cultivars are suggested for 4-inch diameter potted plant usage.