





All Flower Bulbs listed in this catalog (except Oxalis and Paperwhites) need a cold period (condensed winter) prior to forcing into bloom. The cold periods vary per variety and are listed.

There are three main forcing groups which are explained below. Details for each are listed by each variety.

A partial cooling period (generally 6 weeks) is given to the "dry" bulbs after which the bulbs must be planted. After the initial rooting of 2 to 3 weeks, they should be stored cold at optimum temperatures (see individual product).

This application is mostly used for the **EARLY** group. This group is for bulbs which need to flower from middle of January until middle of February.

Flower Bulbs that have not received any cooling prior to planting

need to receive the full cold treatment after the bulbs are planted and well watered.

It is strongly suggested that the bulbs are planted immediately upon arrival, (See earliest plant date) which is different for each category.

Follow suggested number of cooling weeks listed by each variety before forcing the product in the greenhouse.

This is for the most part the MID group, for flowering immediately after Valentine until early March.

> For the last group indicated by either MARCH or EASTER,

the bulbs can be planted later than the MID group, but close attention must be paid to the numbers of cool weeks needed.

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We are honored to use a photo of Mr. Lee Pell, a special personal friend and a longtime supporter of Ednie Flower Bulbs.

The other photos are the fifth generation flower bulb experts!





General Information





Before the pots are taken out of cold storage, make sure the roots are well developed and sprouts have emerged. If taken out of cold storage too early, it will add unnecessary time in the greenhouse. If not 100% sure, add some extra cooling time before starting to force.

A rule of thumb for Tulips is to <u>feel</u> if the flower bud is above the bulb inside the emerged sprout by moving down the sprout with fingers. One other way is to cut a bulb open and <u>see</u> where the flower bud is located. If the bud is mostly inside the bulb yet, extend the cooling period for a few more days or week. (Just like pre-mature babies take extra time...) This will eliminate extra time in the greenhouse.

After watering well (possibly repeat the next day) grower should contemplate whether to use Plant Growth Retardants to ensure the final plant will be the desired height.

Since each type of flower bulb reacts differently and uses different Plant Growth Retardants, please check the introduction to each flower bulb.

Greenhouse Temperatures

Greenhouse temperatures vary for each different Flower Bulb crops:

HYACINTHS tolerate warmer temperatures from the top as well as from the bottom.

(Just make sure not to bring them from the cooler into full daylight, see page 8).

MUSCARI do best when grown with Tulips as they take longer to force into flower than Hyacinths.

NARCISSI perform best when the greenhouse temperature is 63°F. (17°C.) and will

stay shorter than when grown warmer OR colder.

TULIPS can be grown warmer than indicated by each variety, however they do

NOT tolerate bottom heat as this will cause dessication of the flower buds.

The suggested number of days is based on growing the Tulips at 60-63°F.

(15-17°C.). They can be grown cooler at 55°F. (13°C.) but add 7 days to the suggested

number. They can even be grown at 45°F. (7°C.) night temperature,

but then add 14 days to the suggested number of days until colored buds.

Make sure there is enough air movement during the day and Tulips need water!! A few

doses of 200-250 ppm Calcium Nitrate can be added to strengthen the plants.





Crocus vernus



FLO	WER RECORD
K	

is a member of the Family Iridaceae. These harbingers of Spring are stemless plants growing from corms.
Crocus is the Greek name for saffron. The foliage is narrow, grasslike and appears before, with, or after the
flowers. They can be forced into bloom from January on but are not recommended for forcing after March
as the flowers do not last as long as other bulb flowers. They do well in Dutch Flowering Bulb Gardens (See
page 7.)

5	Code	Cultivar	Description & Plant Characteristics	Natural Height " / cm	Number weeks Cold	Progani.	Approx. Plant Week	Earliest Forcing Week	Number Days to Force
	1625	FLOWER	R Large, purple flowers, This early	6"		9°C.	wk 43	wk 01	21
		RECORD variety produces many flowers. Excellent!!	15 cm	15	Regular	wk 40	wk 04	18	
					March	wk 45	wk 10	8	
M	1540	JOAN of ARC	Many, large, pure white flowers	6"		9°C.	wk 43	wk 03	21
		have contrasting orange yellow stamens.	have contrasting orange yellow	15 cm	16	Regular	wk 40	wk 04	21
			stamens.			March	wk 44	wk 10	11
	1965 PICKWICK Flowers are white alternating with	6"		9°C.	wk 43	wk 01	23		
2)			purple; very unique. Early forcing	15 cm	15	Regular	wk 40	wk 04	23
7		variety	variety			March	wk 44	wk 10	10
	1295	YELLOW	YELLOW Largest yellow flower available.	6"		9°C.	wk 43	wk 04	20
	MAMMOTH This outstanding varie	This outstanding variety does not	15 cm	17	Regular	wk 40	wk 06	20	
		force well early.	force well early.			March	wk 43	wk 09	11



JOAN of ARC



After Crocus and Iris are planted, they need cold storage prior to forcing, similar to Tulips. The number listed in the column above indicates the total number of weeks the varieties need in order to force into bloom. If 9°C. bulbs are used, the grower may deduct 6 weeks.





Ireticulata

These miniature Iris are very colorful and attractive. Ideal for 4-inch pots or in Dutch Gardens.









Hyacinths orientalis

Hyacinths are primarily used as pot plants from early January until after Easter.

They can also be used in combination or Dutch Gardens (see previous page).





Hyacinths can be grown for **EARLY** (January) flowering by using early varieties which need fewer cold weeks.

All varieties can be grown for MID Season. Valentine is a popular Hyacinth holiday in some areas.

For <u>EASTER</u>, the later blooming varieties are suggested. They usally need extra cooling weeks. (See suggested weeks by each variety).

If Hyacinth bulbs are stored prior to planting, <u>DO NOT keep them at cool</u> temperatures which will hamper root development later or cause diseases (penicillium). Best storage temperature is 63-72°F. (17-20°C.)

After planting Hyacinths, make sure the pots are thoroughly watered. Repeat this several times since Hyacinths are fast rooters. If the soil is not wet enough, roots will push the bulb out of the pot. Besides water, the planted bulbs need lots of fresh oxygen to prevent the bulbs from pushing out of the pots. It is best to either leave the planted Hyacinths outside of cold storage until the pots are well-rooted or keep the cooler doors open during the rooting process.

The best rooting temperature for Hyacinths is 55°F. (13°C.) for approximately 2 to 3 weeks. When roots are developing well, the temperature can be gradually lowered. Hyacinths and Dafffodils/Narcissi can be rooted at the same temperatures and timing. After 3 weeks, Tulips can be added when temperature in cooler is lowered (See section Tulips).

When taking Hyacinths out of cold storage, <u>DO NOT</u> place them in direct sunlight. This will cause sprouts to "spit", meaning the flower stalk tears off the basal plate due to a too rapid temperature increase. To prevent this problem, leave the product in a shaded (cooler) "holding" area until the sprout has started to open up and the first florets can be seen. Some varieties are more sensitive than others.

The greater the temperature difference between cooler and the greenhouse, the greater the risk of "spitting", especially with the later group.





Plant Growth Retardants for Hyacinths

Other Plant Growth Retardants to reduce the final height of the Hyacinths have been tested but Florel (Ethephon which releases Ethylene) is still being used successfully.

CAUTION: When spraying Florel, please stay away from products (such as Tulips) that can be damaged by Ethylene.

- 1 Foliage must be dry at time of treatment, later afternoon is prefrerred.
- 2 Florel should be applied in a well-ventilated, 60 70 °F. (16 21 °C.) greenhouse.
- 3 The leaves or flower stalk should be 3 to 4" (7 to 10 cm.) tall.
- 4 DO NOT water foliage for 12 hours after application.
- Florets must not show color, otherwise damage will show.
 This is most critical if a 2nd spray is needed.

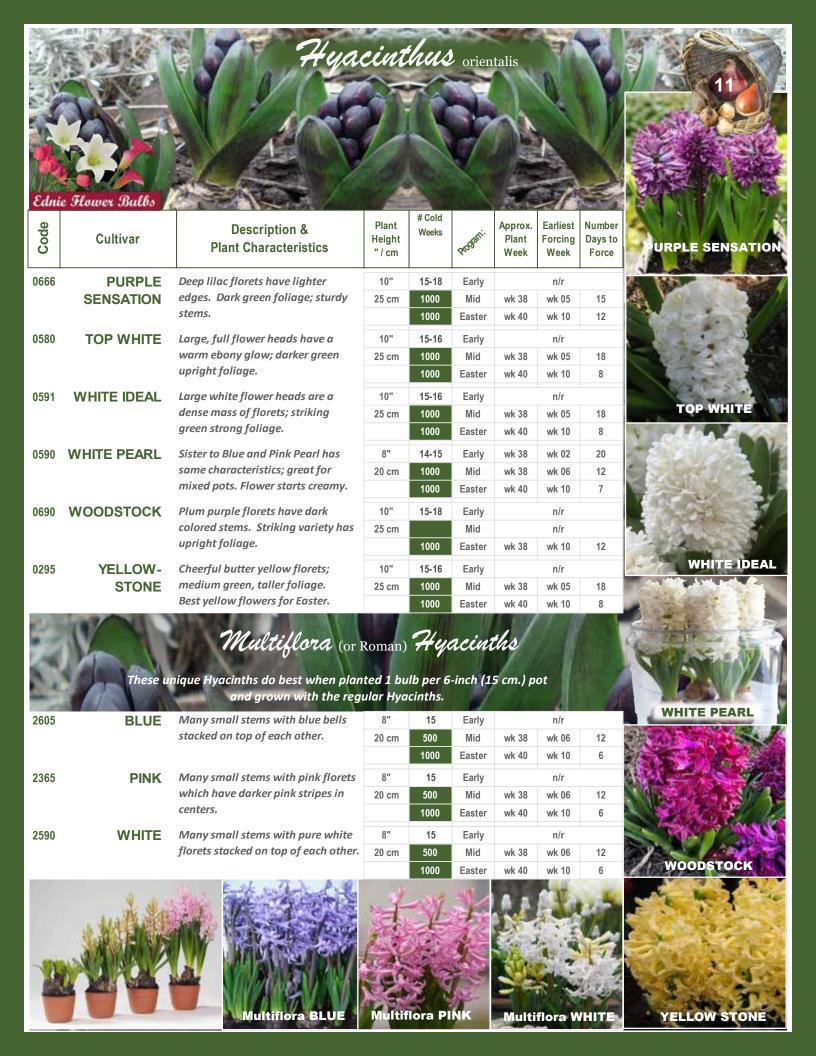
Suggested number of bulbs per Pot Size

per Pot Size	
4-inch Pots	1
6-inch Pots *	3
8-inch Pots *	5
10-inch Pots *	7

* If smaller bulbs (15-16 or 16-17 cm.) are used, the number should be increased, e.g. 4 bulbs per 6-inch pot.

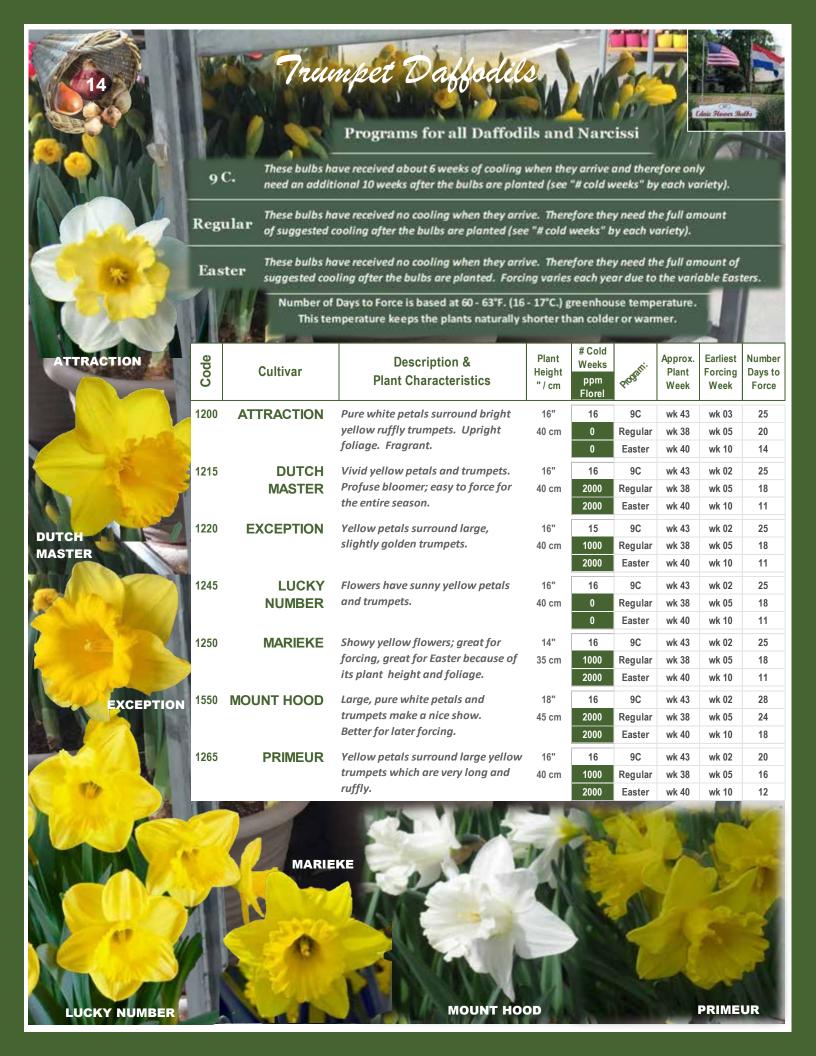






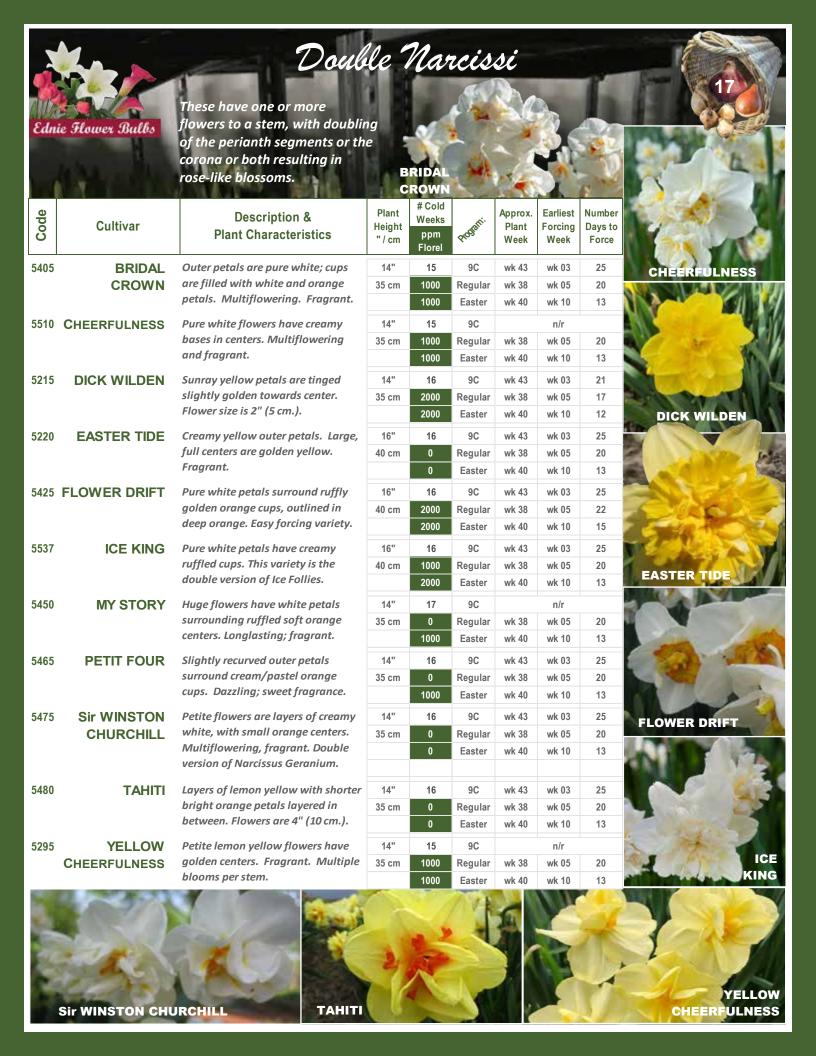




























Plant Date			Flower Date
	October	15	US Thanksgiving Day
	November	10	Christmas
	November	18	New Year
	December	1	Chinese New Year

Growing Schedule - Holidays

February 1 December 15 Valentine January



Number Stems per Bulb Size

Size	Number Stems
13-14	1 stem
14-15	1 - 2 stems
15-16	1 - 3 stems
16-17	2 - 3 stems
17-up	2 - 3 stems

Co	Cultivar	Plant Characteristics	Leaf Color	Height " / cm	Plant Pells	Weeks to Bud	Weeks to Finish
1800	ADENOPHYLLA	Flowers are pink with darker pink veins; about 1" (2-1/2 cm.) across. After planting they need 13 weeks at 36°F. (2°C.) before placing in cool greenhouse.	green	8" 20 cm.	Fall		4

1337 **IRON CROSS** (Deppei)

The Good-Luck plant or Four Leaf Clover. Flowers are red or purplish violet above the colored foliage. Force at at 55-59°F. (13-15°C.).

Description &

green/red	6"	Fall/ Spring	8 - 10
	15 cm	Opining	



IRON CROSS (DEPPEI)

Number

riangularis species

	4 11/6		-	1	11/2/201		199
0325	FANNY	Soft pink flowers above lush foliage	green	6"			
		of trifoliate leaves which close at		15 cm	Winter - Spring	6 - 8	10 - 12
		night and open during the day.			Spring		
0350	MYKE	Reddish purple foliage is solid in	purple	8"	1871 4		
		color. Very light pink flowers are a		20 cm.	Winter - Spring	8 - 10	12 - 14
		nice contrast.			Opining		
0570	REGNELLII	The St. Patrick's Shamrock which		6"	V		
		does compliment combination	green	15 cm	Year Round	6 - 8	10 - 12
		gardens. White flowers.			Round		
0380	TRIANGULARIS	Pink flowers on top of dark, two-		8"	V		
		toned maroon foliage: excellent in	nurnle	20 cm	Year	8 - 10	12 - 14

green	15 cm	Winter - Spring	6 - 8	10 - 12
purple	8" 20 cm.	Winter - Spring	8 - 10	12 - 14
green	6" 15 cm	Year Round	6 - 8	10 - 12
purple	8" 20 cm.	Year Round	8 - 10	12 - 14





hanging baskets. Responds well to

light Sumagic sprays.



TRIANGULARIS

Triangularis Species: Suggested # of bulbs per Pot

4-inch Pots 6-inch Pots * 3 - 5 8-inch Pots * 5 - 7

* If smaller bulbs (Size II) are used, the number should be increased.

Some Helpful 7ips to Ensure Quality Oxalis

In order to keep the plant compact, a Plant Growth Retardant may be used. Various options are available, such as Bonzi and Sumagic sprays (low dosage).

Start at 68-75°F. (20-24°C.) until emergence.

Continue with cooler temperatures 57-61°F. (14-16°C) to keep plants compact. After first flush of buds appear, temperature may be increased to 65=68°F. (18-20°) until shipping.

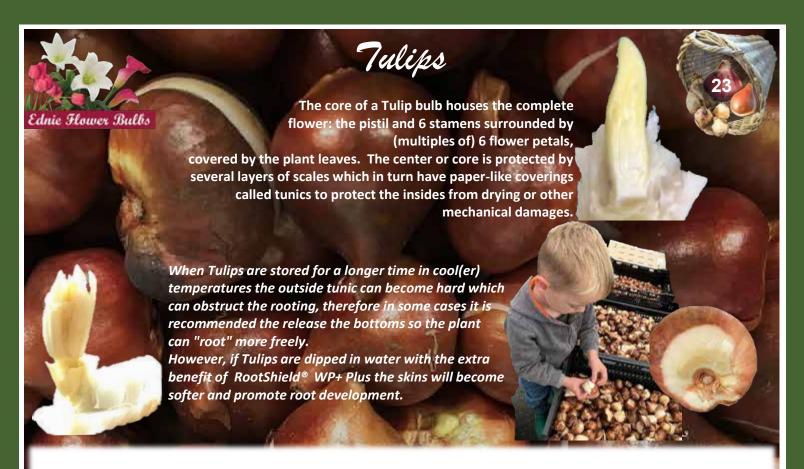
For optimum plants, maintain 2500-5000 ft candles.

Other Species: Suggested # of bulbs per Pot.

4-inch Pots 6-inch Pots * 8 - 10 8-inch Pots * 12 - 15

* If smaller bulbs (3-4 cm.) are used, the number should be increased.





DID YOU KNOW....

that Tulip bulbs travel many miles? They are first dug out of the fields by machines, shaken to remove the soil, then put onto transport belts ending up in (temperature controlled) cube cases for the drying process. They continue on to either mechanical or hand removal of the old flower stalk and skins, then to the sorting and counting machines to finally come to rest in either wooden trays or plastic shipping crates. Before they are transported to the various countries, most of them are washed for the North American market. For more information and pictures, see page 46 in the Flower Bulbs for Fall Planting Catalog.

After being loaded into temperature controlled containers, they travel either by boat or plane to the country of destination. From there they are then unloaded and loaded into trucks to arrive at the final destinations. ERGO: If some blemish or damage shows on the outer skin or scale, think how many times the individual bulb has tumbled.

Fortunately, if no disease is evident, the center or core of the bulb will be perfectly fine because of the many layers covering the flower. (See pictures below.)

If some shipping or storage mold on the bulb is evident, take a blower or move fresh air with a fan to dry out the mold and it wll disappear. Again, no damage to the core! How do you know for sure the core is fine?

Cut open a bulb (see sample) and notice the creamy yellow parts of the plant and flower.





Tulip Programs

9 C. These bulbs have received about 6 weeks of cooling when they arrive and therefore only need an additional 10 weeks after the bulbs are planted (see "# cold weeks" by each variety).

Regular

These bulbs have received no cooling when they arrive. Therefore they need the full amount of suggested cooling after the bulbs are planted (see "# cold weeks" by each variety).

Easter

These bulbs have received no cooling when they arrive. They need the full amount of suggested cooling after the bulbs are planted. Forcing varies each year due to the variable Easters.

The column "Number of Days to Force" is based on a Night Greenhouse Temperature of 60 - 63°F. (15 - 17°C.).

For Easter to keep the plants naturally shorter it is strongly suggested to grow the Tulips cooler.

If grown at 55°F. (13°C.) Night Temperatures, please add 7 days to the Number of Days to Force.

If grown at 45 - 46°F. (7 - 8°C.) Night Temperatures, please add 14 days to the Number of Days to Force.

The IMPORTANCE of ROOTS with forcing healthy TULIPS in Pots

Tulips need to be planted as high as possible in the pot to give roots as much space as possible since they only grow down.

Too many roots in the bottom of the pots cause various diseases such as Botrytis cinerea or Trichoderma.

Make sure the pots have sufficient drainage holes, and add sand to the growing media or cover the pots with sand.

An ounce of PREVENTION is WORTH a POUND of CURE.



Comparison Rates Plant Growth Retardants

Ancymidol	Paclobutrazol	Flurprimidol
A-Rest	Bonzi/Piccolo	Topflor
(Mg/Pot)	(Mg/Pot)	(Mg/Pot)
0.125	0.375	0.200
0.250	0.750	0.400
0.500	1.500	0.750

Chart is compiled by Cornell University
Dr. W.B. Miller, Research Director

Plant Growth Retardants for Tulips

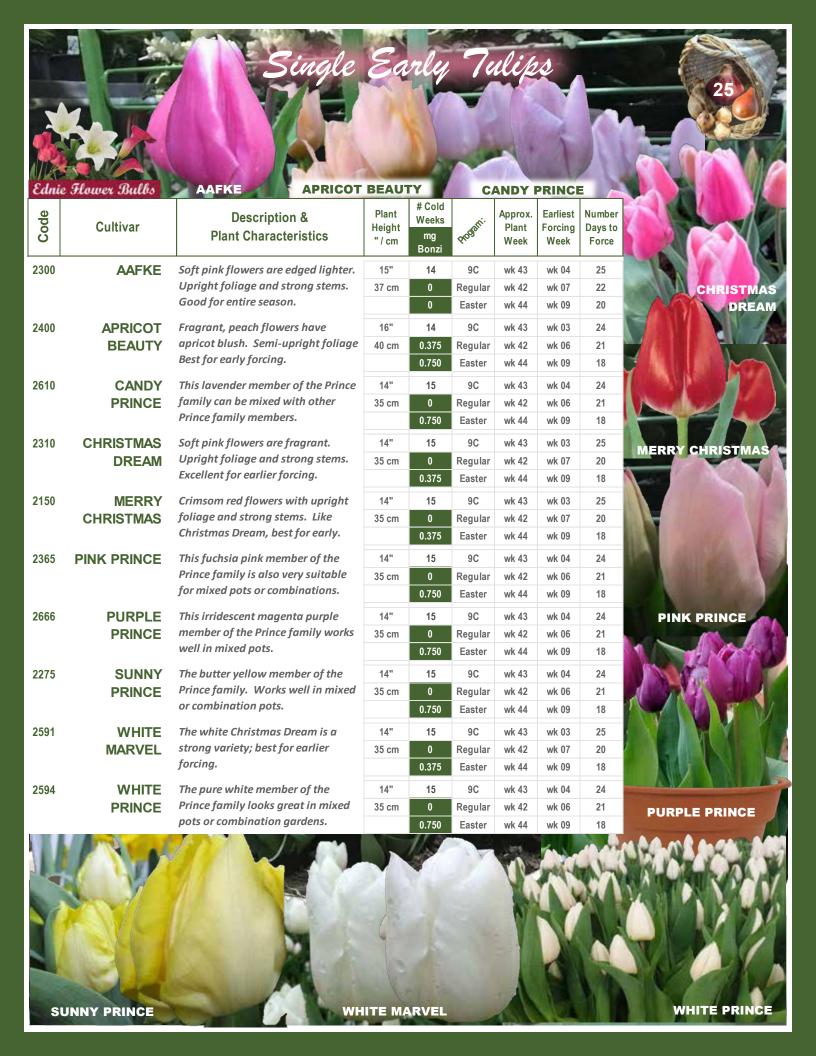
Current Plant Growth Retardants to reduce the final height of Tulips are either Pablobutrazol (Bonzi or Piccolo) or Flurprimidol (Topflor). For convenience sake we have Ancymidol (A-Rest) listed in the chart as well since many "Old-Timers" were used to this product.

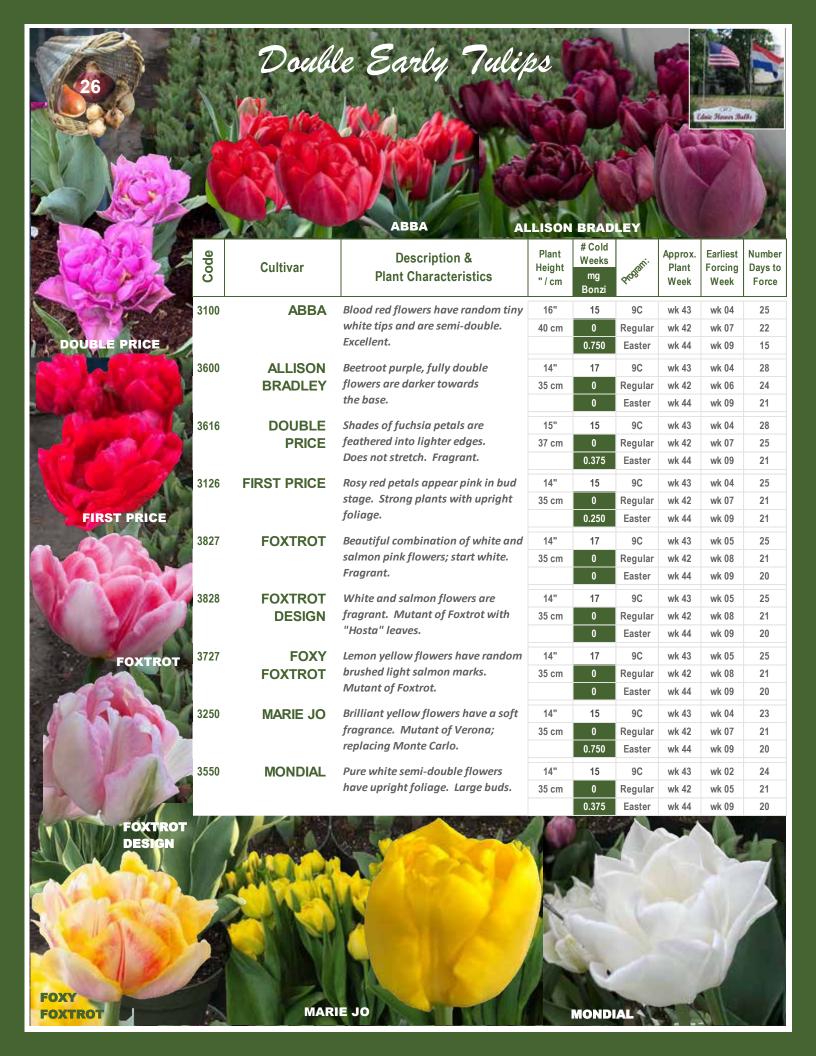
The type of growing media is very important, e.g. if bark is mixed in, please ensure that the pH is 6.0 to 6.5 in order for the PGR to be successful.

- When pots come out of cold storage, make sure they are watered well right away and apply the Growth Retardant the next morning when the soil is moist.
- 2 Although A-Rest needed to be applied within 24 hours after coming out of cold storage, Bonzi or Piccolo can be applied at other times, even twice if needed.
- Grower should evaluate each variety when it comes olut of cold storage and apply the Growth Retardant accordingly.
- Do not water the pots until the roots have had a chance to absorb the Plant Growth
 Retardant. Bonzi or Piccolo works best if the pots are not watered until the soil has dried out.

Suggested number of TULIP bulbs per Pot Size

4 inch	(10 cm.)	Pots	3
6 inch	(15 cm.)	Pots	5 or 6
7 inch	(18 cm.)	Pots	7 or 8
8 inch	(20 cm.)	Pots	10
10 inch	(25 cm.)	Pots	12
12 inch	(30 cm.)	Pots	15

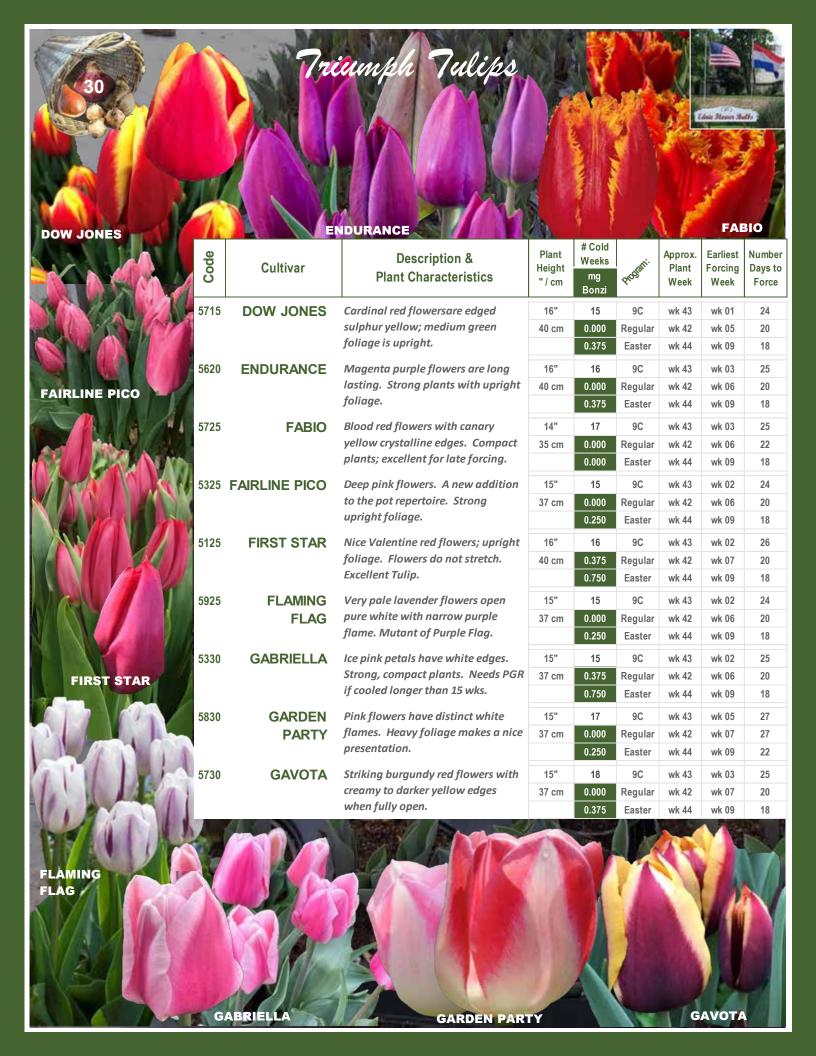


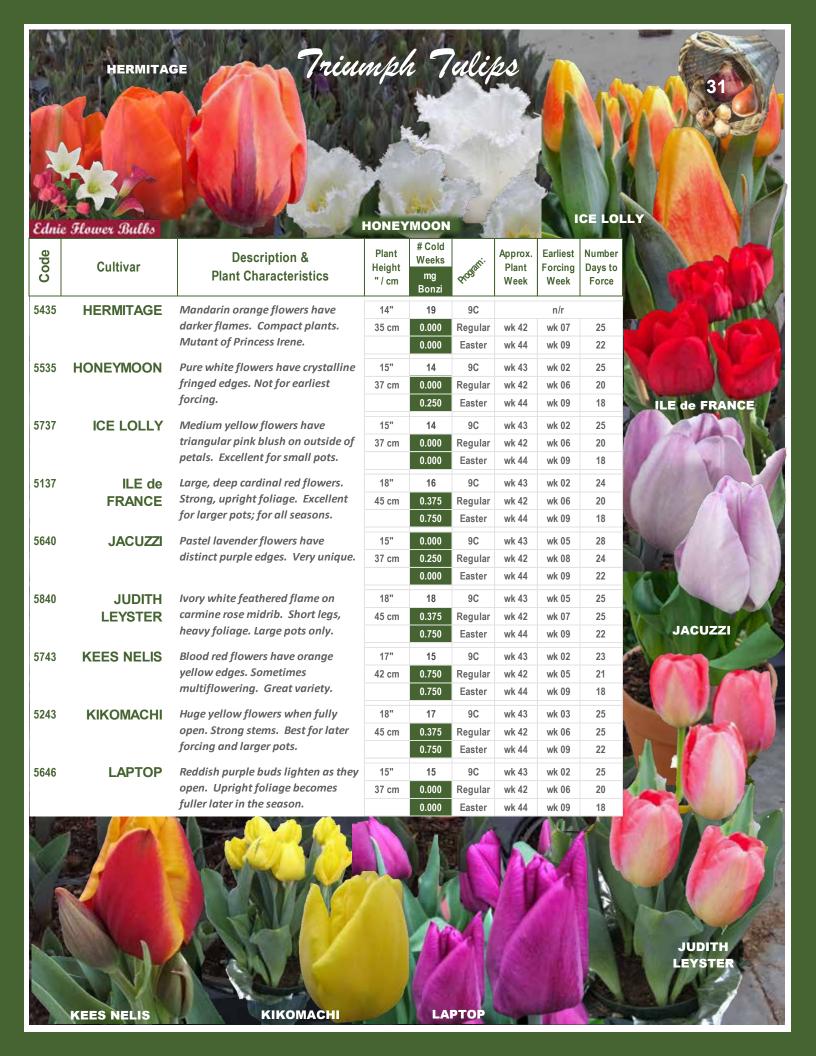


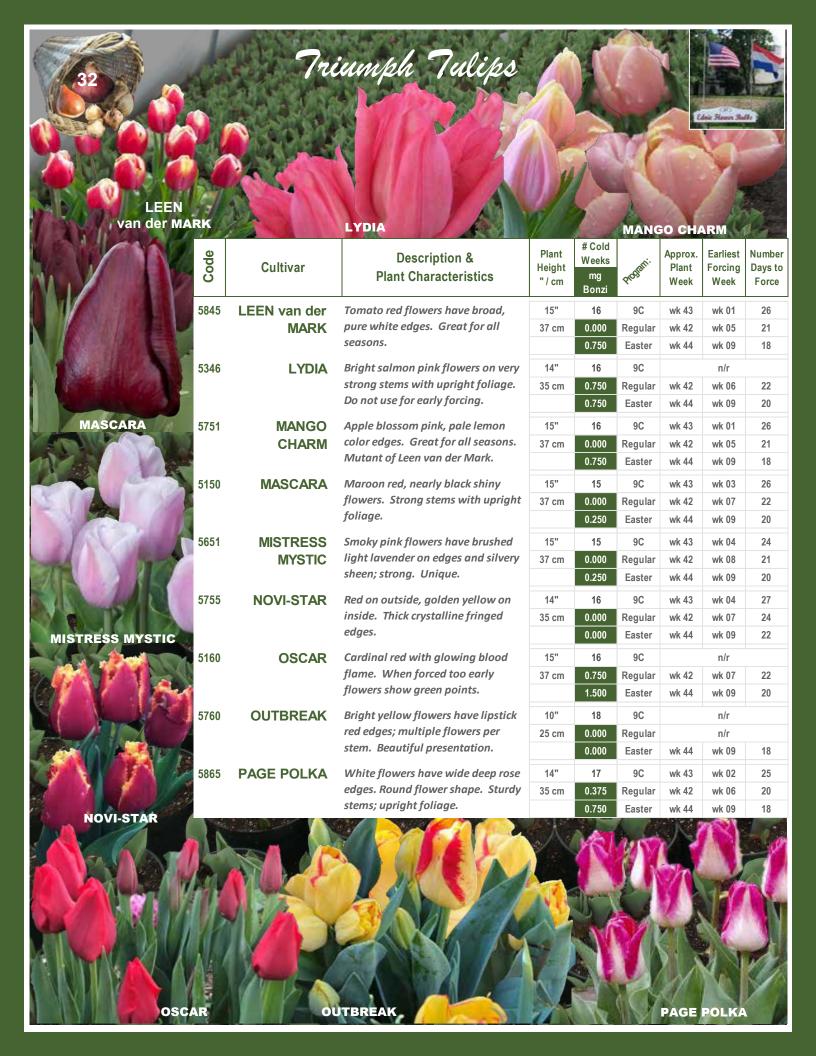






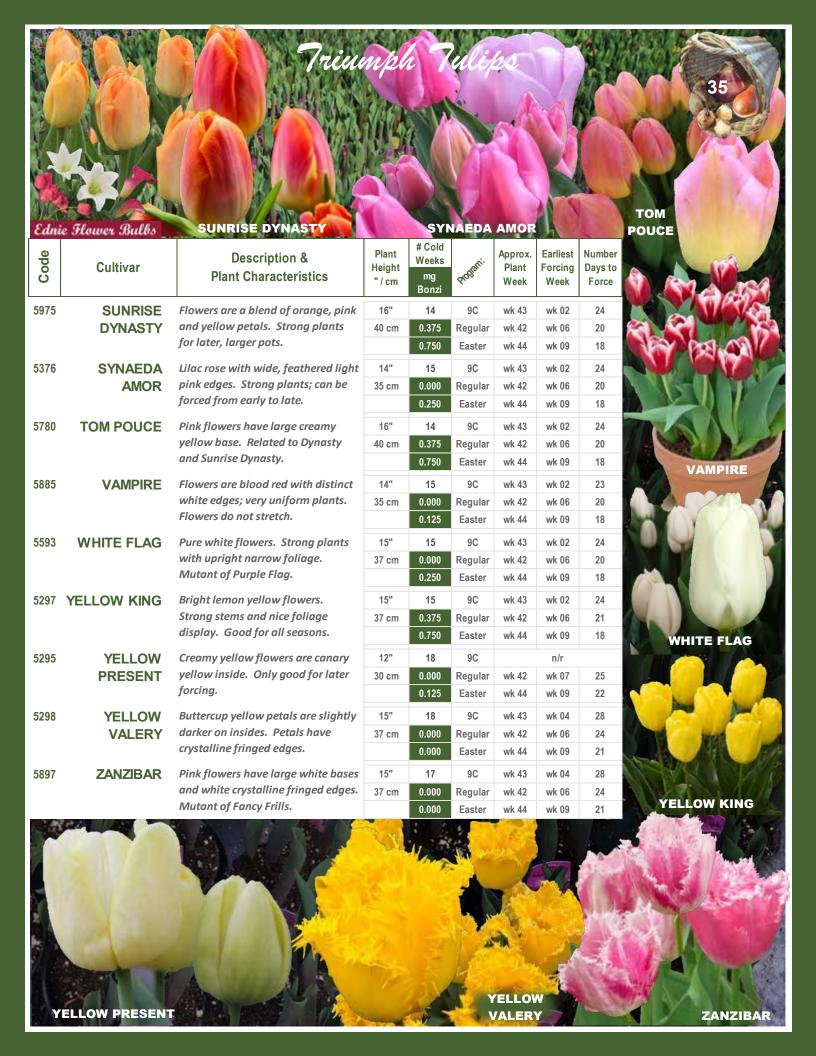








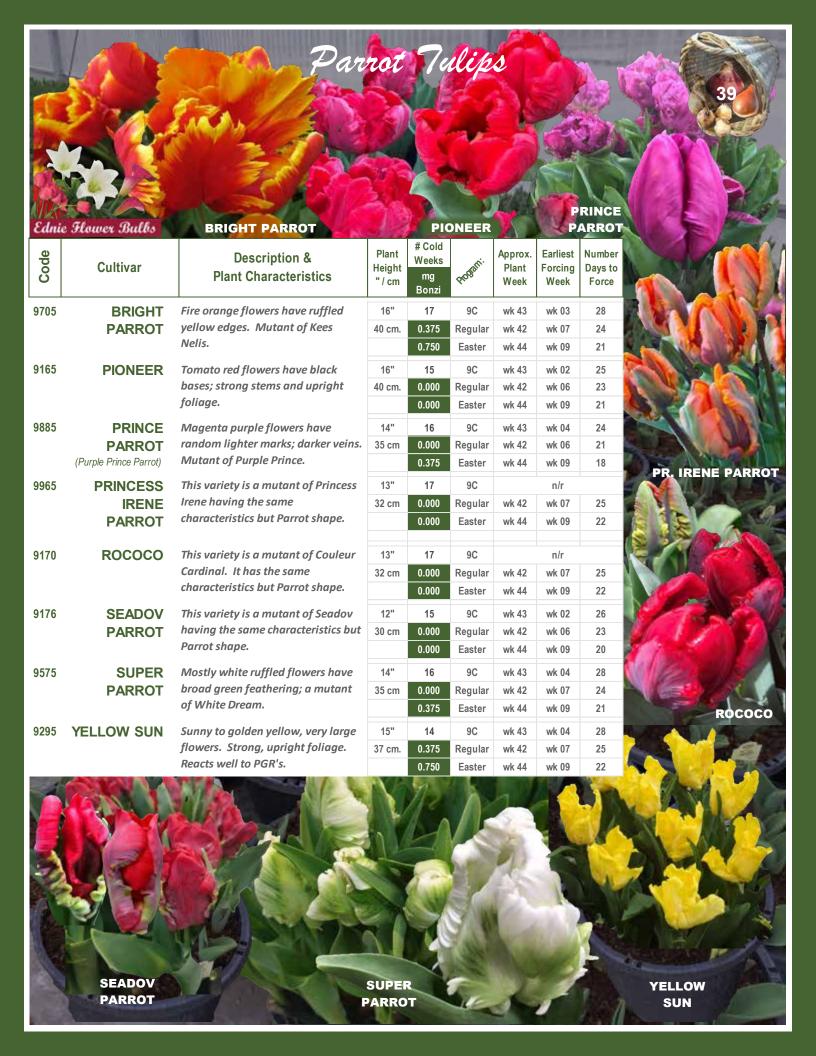














"Hosta" Leaves

Additional Information

Tulips

Varieties which indicate "Hosta" leaves means the foliage has either white or yellow edges which gives the "Hosta" look.
This adds to the presentation of the plant.





Two
Sides
to the
Story

There are two sides to every story and to all Tulip bulbs as well.

They all have a round side and a flat side.

The flat sides are where the old flower stems grew (and mostly removed). The flat sides should always face the insides of the pots. The largest leaves which cover the inner leaves and flower stems are located on the round sides of the bulbs.





Since many different varieties are often planted to flower at the same time, Bonzi recommendations listed will vary.

As a rule of thumb and to make it simpler, sort out the varieties by height when coming out of cold storage.

Very short sprouts may not need any at this point but should be evaluated in another 10-14 days.

All varieties with medium sprouts can all be treated similarly with a low dosage of PGR's and taller sprouts with a higher dosage. It all depends on what the forcing temperature will be as well.

When Paclobutrazol (Bonzi/Piccolo) is used, the application can be repeated as needed; make sure the instructions on the label are followed to avoid disasters such as bud abortion etc.

Plant Medium Tulips need a soil free of Perlite to avoid damage to foliage.

Add sand for stability.

Pay close attention to bark if it is included in the medium as it may negate the results of the PGR applications.

Tulips prefer a pH of close to 7. See also page 24 of this catalog.

Fertilizer

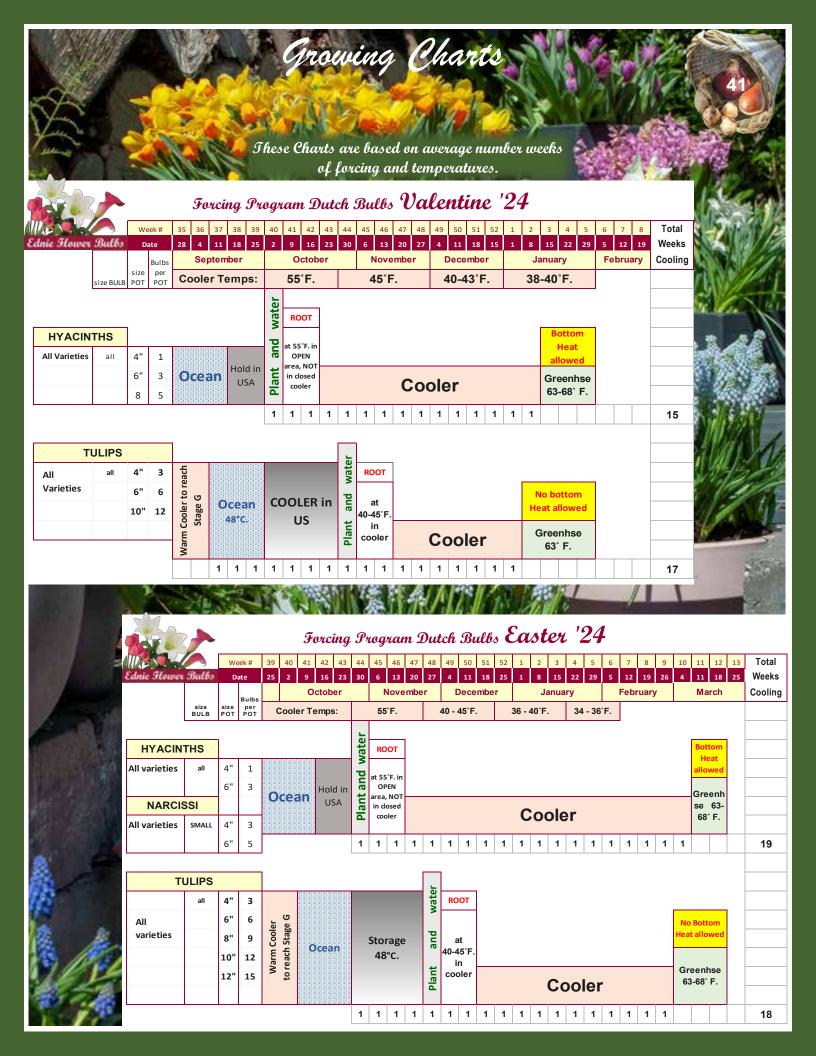
Although all bulbs contain enough nourishment to flower, additional fertilizer applied to Tulips once the plants are established after cold storage will strengthen the plants and increase the flowers to their maximum capacity.

See also page 5 of this catalog.

Water

Water is extremely important. Dry soil at any time will result in dried-up flowers. The only exception is after the application of a PGR. If watered too soon after the application it will delute the solution and negate optimum results.







Tulip Index



			Variety	Туре	Page		Ednic Hower S	110
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Variety	Type	Page	GARDEN PARTY	TR	30	Variety	Type	Page
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CRISPION SWEET	DL	36	NOVI-STAR	TR	32	TOM POUCE	TR	35
	4			Land 1	1000	TOP LIPS	DL	38
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DOUBLE YOU	DL	36	PASSIONALE	TR	33	WHITE FLAG	TR	35
DOW JONES	TR	30	PAUL SCHERER	TR	33	WHITE HEART	DL	38
			PERTH	DE	37	WHITE MARVEL	SE	25
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			PINK PRINCE	SE	25	WHITE PRINCE	SE	25
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FOXY FOXTROT	DE	26	PURPLE FLAG	TR	33	ZANZIBAR	TR	35
FREEMAN	DL	37	PURPLE PRINCE	SE	25			
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