

PRECISION GROWTH CONTROL

 pirouette™

plant growth regulator for ornamentals

 fine

Excellence in PGR technology



pirouette™

Precision Growth Control

Pirouette is a high purity paclobutrazol formulation for profitable growth management of a wide range of greenhouse grown ornamentals.

Pirouette has been thoroughly tested at leading universities and in independent EU trials for over four years as well as three successful years of commercial usage in the USA, as **piccolo™**.

Benefits

Pirouette helps growers create more marketable bedding and pot plants which are more compact with deeper green foliage.

Pirouette is a state of the art product from Fine Agrochemicals Limited, a leading European PGR Manufacturer.

Mode of Action

Gibberellins are naturally occurring plant hormones which cause many physiological effects depending on the type of gibberellin present as well as the plant species or cultivar. One of the effects of gibberellins is to promote internode elongation, leading to longer stems and commercially less attractive plants. **Pirouette** effectively reduces internode elongation through the inhibition of gibberellin biosynthesis.

Crops and Uses

Pirouette can be used on a wide range of pot and bedding plants including pansy, petunia, pelargonium, geranium, poinsettia and pot roses.

Detailed instructions for use can be found on the **pirouette** label or from Fargro (www.fargro.co.uk)

Pirouette can also be used on a wide range of ornamental plants not detailed on the product label. In such cases, please refer to the section 'Application methods'.

CROP	USE
Azalea	To produce compact pot plants with improved and earlier flowering and reduced vegetative shoot production.
Bedding plants	To control excessive growth and produce sturdy plants. Varieties: Pirouette has been used on Ageratum, Alyssum, Campanula, Cineraria, Geranium, Impatiens, Lobelia, Mesembryanthemum, Nemesia, Pansy, Petunia*, Phlox and Stocks. Little effect or variable effects have been reported on Marigold, Tagetes, Salvia, Dianthus and Sweet Pea. *Note: Treatment may reduce "Picote" effect on certain cultivars.
Begonia Elatior	To produce compact plants. Varieties: Pirouette has been used on RR Sirence, RR Elfe, Toran Orange No. 6, RR Mandella and Arosa.
Kalanchoe	To produce compact plants. Varieties: Pirouette has been used on cultivars Annette and Christine. The evidence of effectiveness and crop safety on Kalanchoe is limited.
Lily, Mid-Century Hybrid 'Enchantment'	To produce compact plants. The evidence of effectiveness and crop safety on Lily (mid-century hybrid 'Enchantment') is limited.
Poinsettia	To produce compact plants with darker green foliage and enhanced bract red colouration. Varieties: Pirouette has been tested on cultivars Annette Hogg, A.H. Diamond and A.H. Diva.
Rose	To produce sturdy and compact pot miniature roses. The evidence of effectiveness and crop safety on rose is limited.
Tulips	For the production of potted tulips with reduced flower stem length. Varieties: Pirouette has been used on cultivars Apeldoorn, Cassini, Clare Butt, Don Quichotte, Golden Apeldoorn, Kees Nelis, Lucky Strike, Paul Richter and Trance

CONSIDERATIONS IN DETERMINING RATES AND TIMING

For best results it is important to follow procedures for measuring, mixing and applying **pirouette**. Improper product use can result in overly stunted plants.

In addition to application errors, other factors can affect the response of a plant to **pirouette**. Differences in environment, varieties and cultural factors may cause a variation in the amount of **pirouette** required to provide desired results.

Environment

Temperature is one the most important considerations when determining optimum rates of **pirouette**. In higher temperatures there is generally a greater level of natural stem elongation. Warmer conditions require higher rates and more applications of **pirouette** than those in cooler conditions.

Varieties

Different varieties and cultivars may require different rates of **pirouette**. Shorter, slower growing varieties in general require lower rates than taller, faster growing varieties. Information on plant vigor should be sought from seed suppliers prior to the use of **pirouette** on newly released varieties.

Cultural factors

Where plants are grown with close spacing, in small pot sizes or when they receive high levels of water and fertilizer, increased rates of **pirouette** may be required. When plants are grown in high organic content media, especially bark, then these plants may require higher rates of **pirouette** if it is applied as a drench.

Expected results

Determining the appropriate use rate for desired results may include duration and degree of **pirouette**'s activity.

Generally lower rates will increase the tone and coloration of the plants foliage. Middle rates will provide increased height control, while higher rates may hold plants height much longer.

APPLICATION METHODS

Conducting trials

Optimum **pirouette** rates will vary between growers and will depend on the desired final plant height, growing conditions, applications techniques, species, and variety or cultivar (see above). Growers should conduct trials with small numbers of plants using the recommended rates to determine the optimum rates for their situations before **pirouette** is applied to a large number of plants. Growers may find they have to adjust application rates, techniques, timings and treatment periods to achieve their desired effect.

- The rates recommended on the label are rate ranges and should be used only as guidelines.
- Always start trials at the lowest recommended rate and work up as required.
- Do not exceed the maximum recommended rate.

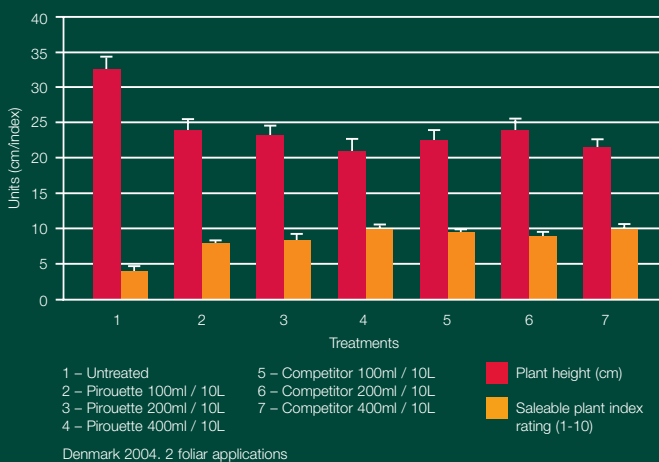
For plant species not specifically listed on the label, growers should run initial trials using the rates recommended in the following tables.

Proven performance

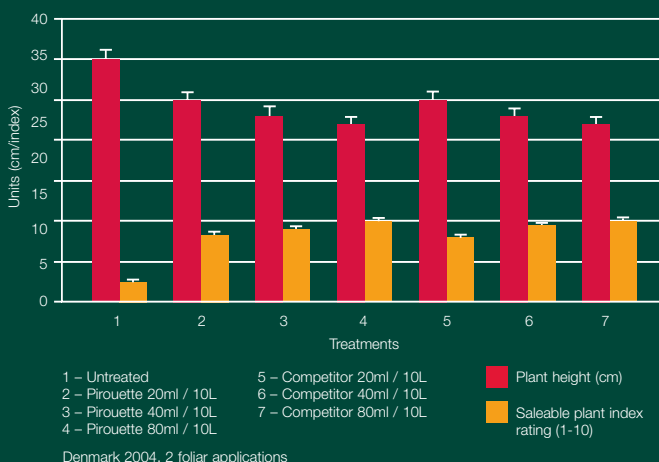
Pirouette has been tested extensively across the EU and the USA. The product performs consistently and at least as well as other paclobutrazol containing plant growth regulator products. Independent efficacy trials from Denmark, France and The Netherlands show that;

- **Pirouette** combines excellent growth regulation and crop safety in a number of ornamental plants
- **Pirouette** performs equally as well as or better than the competitor paclobutrazol product at the same dose rates
- **Pirouette** produces high quality plants with added saleable value

Height regulation in Pot Roses



Height regulation in Poinsettia



Height regulation in Petunia



Recommended trial rates (ppm) by general plant type *

Plant Type	Spray trial rate (ml/10L water)	Drench trial rate ml/10L
Bedding Plants	12.5	-
Flowering/Foliage Plants (annual or perennial)		
– Herbaceous Species	12.5	-
– Woody Species	20	-
Woody Landscape Plants	40	-
Bulb Crops	100	125



HOW TO APPLY PIROUETTE

Spray applications

Generally the spray volume for plants in small containers or plug trays which are closely spaced should be 1-2 Litres / 10 m² of bench space. For larger plants with a well developed canopy, a spray volume of 3 Litres / 10 m² of bench space is recommended.

Sequential applications using 50-100% of the lowest recommended application rate can provide more uniform growth effects and also guard against overdosing. This is particularly true when cooler temperatures or lower light conditions occur.

It is important that the target plants are well covered with a uniform spray application. However, excessive spray solution to heavy run off is not recommended since **pirouette** is active through the roots as well as the stem.

The drying time for **pirouette** is 30 minutes. Under hot / dry conditions, where drying time is expected to be substantially less than 30 minutes, applications should not be made.

Drench applications

Drench applications of **pirouette** can be the most effective method in reducing plant height and producing a uniform effect. Drench applications can be made, without phytotoxic effects, late in the growing cycle, at a point that marketable size is reached.

The compost must be moist at the time of application to ensure uniform distribution of the drench. Volume of drench liquid required is related to pot/container size.

Recommended volume rates are:

Pot Size (cm)	Drench (ml/pot)
10cm	50ml
15cm	100ml
20cm	200ml

MIXING AND MEASURING

Due to the small amount of **pirouette** required to regulate growth in many plant species, mixing and measuring is very important. By following the procedure outlined below for a spray application, as an example, you can measure and mix the same rate for the correct volume every time.

1. Use a sprayer which is dedicated to PGR use only
2. Ensure the spray tank is clean and is not contaminated with other material
3. Fill the spray tank with half the required volume of clean water
4. Check the label for the dose rate recommended for the plant type you are going to treat
5. Determine the amount of **pirouette** needed for the required concentration
6. Wearing the proper personal protective equipment listed on the product label, measure the required amount of **pirouette** and add it to the tank.
7. Fill the spray tank with the remaining amount of water required to achieve the correct concentration.
8. Agitate the mixture frequently to assure the uniform distribution of **pirouette** in the water.

Note: delivering the correct amount of **pirouette** to your plants is very important. If at anytime you are unsure of your calculations, measurements or sprayer calibrations, start the mixing and measuring process again.

FINE – EXCELLENCE IN PGR TECHNOLOGY

Fine Agrochemicals Limited (**fine**) was founded in 1983 as a specialist producer of crop protection products.

Based near Worcester, UK, an area historically associated with horticulture, **fine** has developed as one of the leading companies in the production of plant growth regulators for ornamentals and fruit.

Fine is and has always been committed to helping growers produce the best quality crops in line with their customer's needs.

Outstanding Quality

Pirouette is manufactured in the EU by **fine**. **Pirouette** is produced from the highest purity paclobutrazol available.

Product quality is of paramount importance to **fine**. Strict controls are in place to ensure that all products are of the highest possible quality. **Fine** was one of the first agricultural companies to achieve ISO9001 accreditation in 1992. **Fine** has now achieved the new ISO9001:2000 accreditation for its products and business.

Fine has a dedicated team focussed on research and development to support **pirouette** uses in floriculture.

Manufactured by:

fine

Excellence in PGR technology

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Distributed by:

USE PESTICIDES SAFELY: READ THE LABEL BEFORE USE.
Pirouette contains 4 g / L paclobutrazol
PirouetteTM is a trademark of Fine Agrochemicals Limited
Piccolo is registered with the US trademarks and patents office

