



Farmnote

Growing spring onions Reviewed July 07

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The spring onion (*Allium fistulosum*) has been the favourite onion of China and Japan for centuries. Its origins are believed to be in Siberia and Mongolia.

All spring onion types are characterised by slightly enlarged bulbs. The type grown in Australia does not produce offshoots; it has straight, hollow leaves and a distinct white 'stem' consisting of a collection of leaf bases. The 'stem' is the main edible part of the plant and is used mainly in salads.

Spring onions are markedly different from shallots (*Allium cepa*, aggregatum group) and the bulb onion (*Allium cepa*, cepa group). However, some varieties of bulb onion, such as early Lockyer White, South Australian White, Savages White and Gladalan White, are sold as spring onions if they are harvested when the bulb is immature and the leaves are intact.

It is estimated that about three million bunches, or 1000 t, of spring onions are produced in Western Australia each year.

The crop is grown on the Swan Coastal Plain, mainly between Wanneroo and Baldivis, for the domestic market. A small quantity is consigned to the eastern States.

Variety

The main varieties of spring onion are Straightleaf and selections of Straightleaf. They include Dynasty Winter King and Summer King. They are seeded at a rate of 6 to 10 kg/ha.

Climate

The spring onion produces the highest yields and best quality in late spring. However, day length does not affect production so, unlike bulb onions, spring onions are produced throughout the year. Demand is highest in summer, but burnt tops and yellowing can impair quality at this time of year. Winter crops are softer and less vigorous. Spring onions are hardy to frost, but can suffer severe hail damage.

Plant spring onions in a sheltered position since breakage or bending of the green leaves reduces marketability.

Soil

The light, well-drained soils of the Swan Coastal Plain are ideally suited to growing spring onions.

The best soil for this crop is slightly acid, with a pH between 5.3 and 5.8 (using calcium chloride to measure the levels). Do not apply lime to the soil before planting spring onions, unless the soil pH falls below 4.2. Avoid growing spring onions in rotation with crops to which lime is regularly

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applied.

Spring onions are liable to show trace element deficiencies on alkaline soils. If the pH is more than 6.3, it may be necessary to reduce it. Apply granulated sulphur at 1 t/ha and work it into the soil two to four months before planting.

Note: Add about 0.8 to the above pH levels if the traditional water system is used to measure the pH.

Planting

Plant spring onions 1.5 cm deep in single rows 15 to 20 cm apart, using a hand-pushed or air seeder. Plants should be 1.5 to 2.5 cm apart. This gives a density (ignoring pathways) of nearly three million plants per hectare. If planting in double rows with a Stanhay planter, use a distance of 4 to 5 cm between the rows and 30 to 35 cm between the centres of adjacent double rows.

Fertiliser

Work the following fertilisers into the soil a few days before planting. The rates are per 100 m²:

- double superphosphate 6 kg
- magnesium sulphate 500 g
- manganese sulphate 200 g
- borax 180 g
- copper sulphate 180 g
- iron sulphate 180 g
- zinc sulphate 180 g
- sodium molybdate 20 g

Some fertiliser rates may be reduced if a soil test before planting shows optimum levels of nutrients. This is especially important with phosphorus fertilisers such as double superphosphate. High phosphorus levels may cause environmental problems if leached into the ground water.

High phosphorus levels and high soil alkalinity also cause iron deficiency, which is the main nutritional problem with spring onions. Iron deficiency occurs mainly from October to April and it is particularly likely to be seen on alkaline soils. It is easily recognised by a yellowing of the youngest leaves.

Adjusting the pH to a slightly acid level and applying ferrous sulphate before planting will reduce iron deficiency. Fortnightly applications of ferrous sulphate at 200 g/100 L or an iron chelate to the leaves after planting may also help prevent the problem, but will not be effective where iron deficiency symptoms are already visible.

[Table 1](#) shows the rates and times of application for nitrogen and potassium. Start applying the topdressings described three days after emergence. Apply small amounts of nitrogen and potassium at regular weekly intervals since heavy applications may lead to wastage and polluted ground water supplies.

Reduce the nitrogen if a water test shows a high level of nitrate nitrogen (greater than 10 ppm) in the irrigation water.

Magnesium deficiency is seen as a yellowing on the oldest leaves. Magnesium sulphate (Epsom salts) applied before planting will help prevent this problem. Trace elements such as iron sulphate, zinc sulphate and manganese sulphate must be applied to alkaline soils.

Irrigation

Spring onions have small root systems so the soil must be kept moist. One daily watering in early morning is sufficient from April to October with two daily waterings, in early-mid morning and early afternoon, needed from November to March. [Table 2](#) is a guide to watering for average conditions near Medina Research Station; adjustments must be made for differences in sprinkler outputs, marked changes in temperatures, humidities, effective rainfall and wind speeds. Use evaporation data from the nearest meteorological station for properties not close to Medina.

Typical butterfly sprinklers are spaced at 277/ha with an output of 15 L/minute or 4.15 kL/ha/minute. Typical knocker sprinklers are spaced at 69/ha with an output of 22 L/minute or 1.52 kL/ha/minute. The irrigation time is adjusted to compensate for the efficiency rating of butterfly (85 per cent) and knocker sprinklers (80 per cent).

Water quality

The salinity of irrigation water should be less than 80 mS/m (about 440 ppm total salts) for highest yields and quality.

Diseases

Apply fenamiphos (Nemacur[®]) at 24 L/ha once a year in the rotation before planting, to control nematodes.

Fungal diseases of the onion family and their control are listed in Farmnote No. 1/86 'Fungal and bacterial diseases of the onion family' (Agdex 256/630). The main disease, downy mildew (*Peronospora destructor*), is especially serious when dew is prevalent on the plants.

There are no serious root diseases and one grower produced 30 consecutive crops of spring onions. However, it is good practice to rotate spring onions with other crops which are not in the onion family.

Pests

Thrips are a major pest of spring onions. These small sucking insects are active in the warmer months and cause small, white spots on the leaves. Dimethoate (Rogor[®]) or endosulfan (Endosulfan[®], Thiodan[®]) will control thrips.

Include a wetting agent at label rates with all sprays since onion leaves are waxy.

Weeds

Apply chlorthal (Dacthal®) or chlorthal-propachlor (Prothal®) immediately after planting and water in for 5 to 10 minutes. These herbicides should control weeds up to the two-leaf crop stage. Some growers may apply Dacthal® three times for the life of the crop. At present, these herbicides are becoming less available.

Harvests

Spring onions mature in 8 to 10 weeks in summer and 12 to 14 weeks in winter.

Pull the plants when they are 30 to 40 cm high and have a stem thickness of 8 to 15 cm. Do not cut the roots or leaves. Discard any plants with blemishes on the leaves and any without green leaves. Put plants in the field into 300 to 400 g bunches using rubber bands to hold each bunch. A bunch contains 20 to 25 plants.

Wash the bunches at the packing shed and remove unsightly older leaves. Place about 50 bunches upright into an 84 L crate. Keep the produce cool and deliver to the market as quickly as possible with the crates lying on their sides facing each other and protected from winds during transport. The leaves of spring onions are sometimes cut level with the tops of the crates and the crates stacked on top of each other.

In retail outlets, spring onions are sometimes displayed in cellophane packs, and the retailer removes much of the leaf.

Table 1. Fertiliser rates and times for spring onions

Time	Nitrogen	Potassium
Twice a week for the first two weeks after emergence	Urea at 250 g/100 m ²	Sulphate of potash at 300 g/100 m ²
Weekly from two weeks after emergence to one week before harvesting	Urea at 500 g/100 m ²	Sulphate of potash at 600 g/100 m ²

Table 2. Irrigation data for butterfly and knocker sprinklers on rain-free days based on average evaporation at Medina Research Station

Month	Evaporation (mm/day) before harvesting	Water requirement* (kL/ha/day)	Time (minutes/day)	
			Butterfly	Knocker
January	8.6	120.4	32.5	89.0
February	8.1	113.4	31.5	86.0
March	6.2	86.8	25.0	66.0
April	3.8	53.2	15.0	40.0
May	2.3	32.2	9.5	25.5
June	1.8	25.2	7.0	19.0
July	1.7	23.8	6.5	18.0
August	2.2	30.8	8.5	23.0
September	3.1	43.4	12.0	33.0
October	4.5	63.0	17.5	47.5
November	6.2	86.8	25.0	66.0
December	7.8	109.2	30.0	82.5

* The evaporation replacement rate for spring onions is 140 per cent.



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