



Grower Summary

FV 387b

Improving Quality and
Extending the Season for Late
UK Leeks

Annual 2014

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Further information

If you would like a copy of this report, please email the HDC office (hdc@hdc.ahdb.org.uk), quoting your HDC number, alternatively contact the HDC at the address below.

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HDC is a division of the Agriculture and Horticulture Development Board.

Project Number: FV 387b

Project Title: Improving Quality and Extending the Season for Late UK Leeks

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Contractor: Precision Agronomy Ltd

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End Date: 30th November 2015

Project Cost: £48,650

GROWER SUMMARY

Headline

Maleic Hydrazide applied as the product Fazor, gave a highly significant reduction of bolting in late leeks produced under UK conditions. This application technique has the potential to extend the production season of UK by 3-4 weeks, significantly reducing the dependence on leek imports, mainly from Spain, during May and June. There were no significant effects on stem extension with the applications of gibberellins to short stemmed winter hardy leek types.

Background

The earlier project FV 387 examined the use of three different growth regulators on leeks applied during the autumn or in the spring. This project concluded that only maleic hydrazide was useful in reducing bolting and that spring applications were the most promising for reducing bolting without adverse crop effects when compared with autumn applications. In FV 387a maleic hydrazide was further evaluated using spring applications and showed great potential to reduce bolting in over-wintering leeks; however difficulties in the possible registration of maleic hydrazide for leeks led to this project being amended to include a single year's work on gibberellins. Year 2 of FV 387a therefore included work on the effect of gibberellins on the growth, bolting and quality of UK late leeks, whilst also further examining the effects of maleic hydrazide. The results of gibberellin use were interesting and some treatments increased stem length, but because of variability within the plots there were inconsistencies and the results were not statistically significant. The Leek Growers' Association asked for more work to be done over two years to further evaluate the effects of gibberellins on stem extension in the shorter bold hardy winter leek types, whilst keeping a watching brief on the possible development of maleic hydrazide. This is a two year project extension looking at increased numbers of timings and more replicates over two seasons to investigate whether the stem extension effects can be proved more conclusively. Gibberellins are currently approved for use in two stem vegetables; rhubarb and celery to promote stem extension, but not in leeks.

Summary

Fazor (maleic hydrazide) showed excellent promise for extending the season of UK leeks. This can be achieved by a reduction in bolting, the main cause of the loss of quality at the end of the UK leek season. In addition to reducing bolting Fazor has other beneficial effects on leek quality, reducing softness and telescoping, both of which are important quality

defects at the end of the UK season. There does, however, need to be caution in the use of this product, should it become approved, as application too early can cause leeks to become too short and fat, and application too late after bolting has occurred does not have any beneficial effects. The effects of gibberellins on the increase of shank length were inconclusive, with some variable results with interesting trends but no significant increase proven from year one of the trial.

Financial Benefits

Currently the UK supplies home grown leeks from around the 1st July until the end of April. Cold storage can increase the length of supply by a few weeks into May.

Leek production in the post-Christmas period between January and May is unreliable because of the effects of severe frosty weather damaging leeks, and the fact that the most frost tolerant varieties tend to have shorter stems which are lower yielding and less favoured by the market. Longer stemmed varieties tend to be more frost susceptible, as well as being quicker to bolt.

Improving the quality and reliability of late leeks would reduce imports and allow more leeks to be grown in the UK.

Using this technique could extend the leek season by up to four weeks, potentially allowing yearlong supply of British leeks to consumers when used with the correct storage. Given that the total value of leek production in the UK is currently worth £30,400,000 this could add a further £2.0-3.0 million worth of production value to this figure.

Action Points

The earlier study FV387a confirmed that the best application window for maleic hydrazide on leeks is during March, as spring re-growth resumes after the winter dormant period. The effects on bolting reduction were proven on two different varieties and over three seasons of work.

The use of gibberellins to increase stem length in winter hardy leeks remains inconclusive and further work in the spring of 2015 is required to confirm any possible benefits. Neither maleic hydrazide nor gibberellins are currently approved for use on leeks.