

# Managing the Risks and Benefits in Growing Potatoes



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Welcome to this edition of FieldWise **dedicated to the potato crop**

Andrew McShane (Hutchinsons Managing Director) introduces a special potato themed issue of Fieldwise for the start of the year.

**'Managing the risks and benefits in growing potatoes' is consistent with our approach of trying to support you in managing volatility.**

Our aim is to help you avoid surprises in your business by anticipating what is likely to happen, planning with you to minimise risks and preparing efficiently any action that will be needed. Following another challenging year, we thought it would be useful to summarise some of our findings from this current season.

We continue to face challenges which present new risks, such as product supply issues and the continuing introduction of regulatory restrictions on familiar active ingredients that we need in the potato crop. We want to work together with partners to increase productivity in the sector. This principle is working well for collaborating wheat growers and ourselves within the Yield Enhancement Network and we believe a similar approach of sharing knowledge will help in the potato crop. The recent 'Vydate' supply issues, and the subsequent impacts on nematode management, are a topical example of the type of challenge we will face.

In this edition we have invited one of our significant potato clients

**Spearhead Marketing** to share with us their experiences of risk management and making the most of profit opportunities in the potato crop. David Almond, Director, kindly introduces the company, then Technical Manager, Emma Kelcher, will share with you their approach on maximising yields and minimising defects and Will Shakeshaft will cover how Spearhead work with local growers for mutual benefit. In addition our own Darryl Shailes will update you on some of the key technical findings that have come out of last season, Kiryon Skippen from our Commercial Team reflects on risk management with supply issues, while Dr John Keer from Richard Austin Agriculture will give his latest thoughts on PCN management.

Against a backdrop of changing consumer habits for potato consumption, the rise of branding and the need for more focus than ever on characteristics such as taste, texture and look of the potato crop, we all face a number of challenges to continue to be successful in this sector.

Hopefully by working together and sharing experience we can make sure the British potato grower becomes even more successful in the years ahead.

## Spearhead Potatoes

*David Almond, Director of Greens of Soham Ltd. outlines the company history and its activities.*



Spearhead Potatoes is one of the leading potato suppliers to the UK potato processing market.

Our business is about growing and supplying potatoes and, working with breeders, we lead the industry in varietal development and crop quality.

We have seen rapid growth in recent years in terms of tonnage and market share and have the confidence to continue to increase our business with the leading crisping and chipping processors, as customers choose to move their supply partnerships to Spearhead.

**continue overleaf >>>**

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>>> What sets Spearhead apart from other suppliers is our understanding that each of our increasing number of processor customers has distinct and different requirements. We ask them what they want and manage our supply chain and our production accordingly, supporting their product development initiatives and offering flexible, quick responses and excellent communication in an open, honest and transparent way. We are developing our expanding network of trusted growers, who all share our values. In return we support them to maximise their profits and yields and offer long term relationships, technical expertise - developed alongside companies such as Hutchinsons - and peace of mind.

## SPEARHEAD POTATOES HISTORY



- Brothers John and Andrew Green established Greens of Soham in 1966, growing vegetables and root crops on Fen soil.
- Greens became one of the first farming businesses to supply supermarkets and quickly became synonymous with quality produce.
- In the late 1990's, Greens began investing in farming activities in Eastern Europe, whilst in the UK the business began to specialise in the growing and marketing of potatoes, onions, beetroot and contract farming.
- In 2000, all this activity was consolidated into a new holding company Spearhead International Ltd., with Greens of Soham remaining as the UK operating company.
- Spearhead Potatoes is at the forefront of processing potato growing, supply chain management and marketing.

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 Director of Greens of Soham Ltd.  
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## Managing risk in potato production



Kiryon Skippen

**Kiryon Skippen** (Hutchinsons Business Development Manager) **explains how developing a good working relationship with your distributor can help manage uncertainty when growing potatoes.**

Working with a range of potato and vegetable businesses is fascinating, as all have varying approaches. Although individual business confidentiality is essential, one aspect which is consistent across all the businesses we deal with is the challenge of managing market volatility, risk and uncertainty.

Risk management starts with ensuring production of required volumes of high quality produce that is desirable to the end market. After technical considerations regarding

cropping and land management, the next issue is securing a reliable supply of high quality crop inputs. As recent shortage issues have shown, maintaining a good relationship for commercial product supply is crucial.

Increasing numbers of clients are choosing to rely on Hutchinsons not just for agronomy, but also for this flow of critical commercial information.

Hutchinsons likes to build a confidential understanding with each business, in as much detail as possible, and not simply from an agronomy perspective. A wider view of the business is necessary to deliver maximum benefit to clients and aid management decisions. Food safety and consumer protocols can also make this area more challenging, but we work hard with our clients in this area to ensure compliance and confidence.

Essentially the aim is to take an increasingly complex area for busy farm business managers and make it as straight forward as possible for them. Through building trust, they can focus on other management areas, knowing that if any issues arise such as Nematicide shortages, they will

have it brought to their attention at the earliest stage.

### Technical Expertise

The commercial relationship also involves updates on new knowledge and new products, which are fundamental to clients developing their business potential. An example is the new Hutchinsons 'Farm for the Establishment and Nutrition of Crops' (FENCe) in Suffolk, which clients including Spearhead have had the opportunity to preview. This farm looks at nutritional approaches with various crops, together with soil structure, organic matter management and the benefits and risks of cover crops. With the increasing use restrictions on individual products, it is helpful to discuss likely choices in detail with an advisor aware of the full range available. This can sometimes bring practical savings in terms of crop flexibility and application requirements.

**It can be very time consuming for a farm business manager to get all the relevant information and this is where Hutchinsons and its staff can make a real difference for you.**

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# Managing potato cyst nematode (PCN) populations ... it's all about the monitoring



Cyst on root



Dr John Keer

Dr John Keer (Richard Austin Agriculture) shares his thoughts on the effective control of PCN and how monitoring by intensive soil sampling is vital.

PCN cannot be sustainably managed without first implementing a rigorous monitoring

regime. Whether a field has only previously grown a few crops of potatoes, or there is a high, well established population of PCN, it is vital to log the spatial distribution of PCN across the field. Without this data, it is impossible to assess the efficacy of control measures such as rotation, nematicide, varietal resistance/tolerance, trap-cropping or bio-fumigation.

## Extended potato production

PCN was first found in the UK around 100 years ago and is now endemic in all of the traditional potato growing areas. It is inevitable that more clean land will become infested with PCN, despite the best efforts at farm hygiene. More recent advances in irrigation have extended potato production onto previously unsuitable soil types which also benefit from being free of PCN infestation. These light soils, together with adequate water, are capable of big potato yields and therefore huge PCN population increases, where the pest has been inadvertently introduced. Assumptions that newer potato land is PCN-free should never be made in the absence of soil sampling data. In fact, clean potato land is such a profitable resource, that the case for intensive soil sampling is as compelling as for older potato land already known to be infested with PCN.

## Monitoring PCN levels

PCN is always randomly distributed across a field, including fields of longstanding PCN infestation.

There is much current debate about the most cost-effective soil sampling regime for monitoring PCN levels. My preference, based on thirty years' experience of monitoring PCN populations in Eastern England, is for one sample per hectare. The less intensive sampling, undertaken in the past, provided average data which led to the false belief that control measures were working well. A switch to more intensive sampling clearly showed that the hotspots were getting worse. This was not evident from less intensive sampling, because hotspot PCN levels were being diluted by surrounding areas of low infestation in the soil samples.

GPS soil sampling will ensure you get the most from intensive monitoring. The PCN intensity maps enable targeted control measures, rather than blanket treatments across the field. This approach will lower and even out PCN levels across a field, eliminating the areas of poor potato growth which are so characteristic of infested fields. Profitable potato growing is all about uniform high marketable yields, only possible where uniformly low levels of PCN are present. GPS soil sampling also enables a field to be sampled in exactly the same pattern, prior to each potato crop. This allows for accurate assessment of the PCN control measures employed for the last crop.

## Resistant varieties

The recent introduction of *Globodera pallida* resistant potato varieties has been the most exciting development for the control of PCN in a generation. Early work with **Vales Everest** showed me how this type of *G.pallida* resistance could be a game changer in the battle against PCN.

Subsequently, varieties such as **Innovator, Eurostar, Arsenal** and **Performer** have also shown unprecedented resistance to *G.pallida*. Whilst my trials work with many resistant varieties has shown almost complete resistance to *G.pallida*, great care must be taken to avoid selection of pathotypes capable of overcoming varietal resistance. This could occur if the same genetic resistance is repeatedly used in the same field.

Good knowledge of the PCN species distribution is becoming more important, because some of the new *G.pallida* resistors have no *G.rostochiensis* resistance. Growers must be vigilant to avoid selection of virulent pathotypes, as happened in the Fens with the repeated cropping of **Maris Piper** and **Cara**, which favoured the proliferation of *G.pallida* in the void left by the complete control of *G.rostochiensis*.

**In summary, intensive monitoring of PCN population levels and species distribution, together with the targeted use of varietal resistance, nematicides, rotation and bio-fumigation, is capable of delivering sustainable PCN control into the future.**



Laboratory work

# Growing Processing Potatoes Successfully

Darryl Shailes (Hutchinsons Root Crop Technical Manager) considers the current opportunities and agronomic issues around the production of processing potatoes.

Growing processing potatoes has been seen by some as the least challenging market for potato growing, while the packing potato is the main target for production.

Certainly, the beautiful skin finishes achievable on the best light silts around the Wash and East Norfolk coast, which can be cold stored into May with little loss of bloom, or the early salad varieties grown in the favourable climates of coastal Suffolk and Cornwall, might seem to some more challenging and glamorous than growing the humble processing potato.

However, those who successfully grow processing potatoes certainly disagree, as the quality requirements for the processing crop, whilst different, are no less demanding than for the packing crop. In addition, variety development in the crisping and French fry market is a very dynamic and fast changing environment, plus the agronomy demands of each new variety need to be finely adjusted, to get the very best result out of each and every field across the farm.

2015 shows what can be achieved with these newer varieties, with many crops yielding in excess of 60 tonnes/ha and some even hitting 70 tonnes and above.

These are yields which were almost unheard of a few years ago – especially when growing the older varieties, and demonstrate the ongoing global investment in the breeding programme for improving processing potatoes.



Potato trial plots

## What are the key crop protection issues in these newer varieties that we need to consider in 2016?

### Spraying control

The obvious issue is the lack of **'Vydate'** in the market for spring control in 2016. Spraying susceptibility of some of the newer processing varieties such as **VR808** and the not so new **Russet Burbank**, will be one of the biggest issues to manage on some farms.

Vydate applied in-furrow has long been the standard for Spraying control - caused by the Tobacco rattle virus (TRV) - and which is transmitted by Stubby root nematodes, namely *Trichodorus* and the *Paratrichodorus* species of free living nematodes.

Stubby root nematodes are most common on lighter soils, typically growing processing potatoes. The first step in their management should be testing for Stubby root nematodes in the potential fields coming into potatoes, then bait testing them to see if they are carrying the virus. The more information we have, the better we can manage the problem.



Spraying caused by Tobacco rattle virus (TRV)

None of the alternative nematicides have an in-furrow recommendation, so will need to be used at the full overall rate incorporated pre-planting. This is the same as if treating for PCN, with the associated increase in costs where there is a perceived risk.

**Alternaria** also seems to be an issue in many of the newer varieties and can be damaging, especially if an attack occurs early in the life of the crop. Therefore, knowing the variety susceptibility can help us to manage this potentially damaging disease as cost effectively as possible.

### Weed control

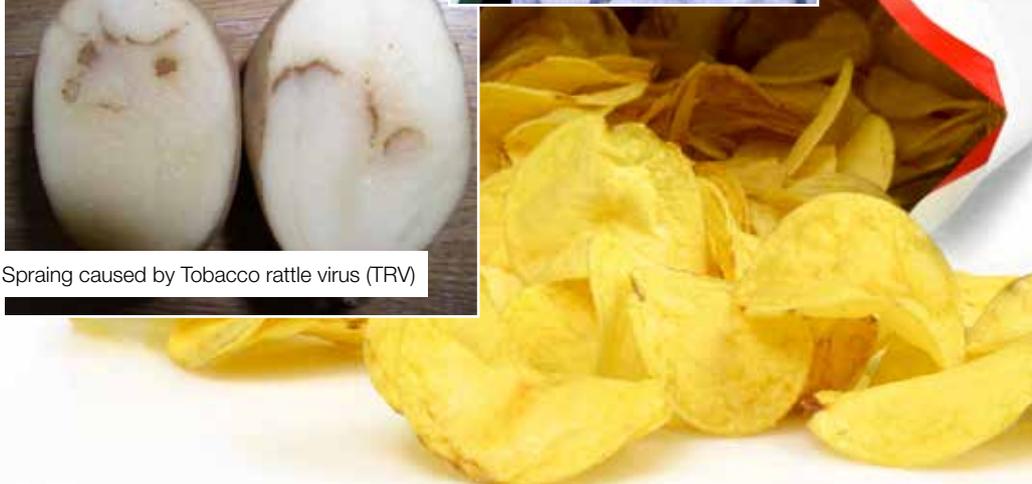
Many of the processing varieties are intolerant of metribuzin, so weed control can be challenging, especially on the lighter soils. Hutchinsons have achieved some excellent results using **'Inigo'** (metobromuron) both commercially and in trials during 2015. The crop safety and efficacy, when mixed with other products such as **'Defy'**, was excellent, with very few follow up treatments required. The post emergence options in many potato varieties are very limited, so having this new active at our disposal will be extremely useful.

**Please consult your Hutchinsons agronomist for advice on variety selection and effective crop protection.**

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Darryl Shailes



# Processing Potatoes

## Passion and Progress

Emma Kelcher (Spearhead Marketing Ltd. Potato Technical Manager) looks at the season just gone and what we have learnt, to take forward into next year's challenging market environment.



Spearhead Potatoes Annual Review event was on the 18th November, giving a full analysis of the 2014 crop performance and the 2015 season so far. The review highlighted Spearhead's record for delivering good quality potatoes into processors at the end of the 2014 season.

The annual event aims to gather growers and agronomists together to identify successes, challenges and to share a perspective on what is to come.

### 2015 Season

Soil bed preparations were well under way in March; however, the temperatures were below where we would have liked to have seen them. Getting the seed bed preparation correct is one of the first steps to helping achieve optimum yield benefits. In order to help us understand the geotechnical aspects of soil compaction, we are able to use cone penetrometers to help understand our soil pans and establish optimum cultivation depths on different soils. We are able to risk assess our fields in order to help us gain the most potential from the land, while looking after one of our greatest assets in farming – the soil.

### Soil Moisture Deficit (SMD) rates and percentage Ground Cover

Yield: 64.6 t/ha

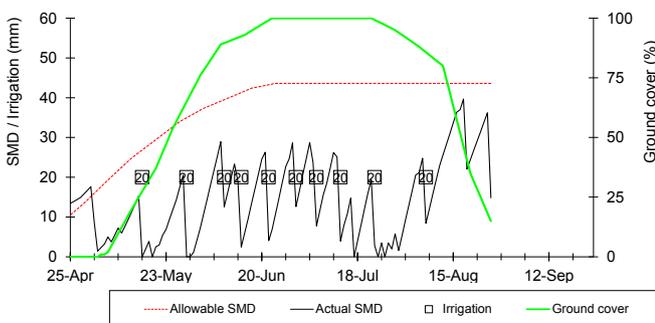


Chart showing Soil Moisture Deficit (SMD) rates and percentage Ground Cover.

As the graph above highlights, the prolonged low soil temperatures (below 10°C) led to many crops being slow to emerge - this was reflected in ground covers which did not reach 100% until the 1st July. Senescence began in the first week of August in fresh crops, with later maturing varieties growing on, making the most of intercepting radiation and gaining yield. The season progressed well, and we saw sporadic showers throughout which made irrigation planning difficult, but were a welcome bonus.

### Bruise Management

Store loading began on the 16th September, and we were on farm to help with bruise management, one of the biggest defect contenders within the processing industry. Within the group we have **3 electronic potatoes** allowing us to be onsite to help with harvester and grading line set-ups to help minimise bruising damage. This year we have seen more self-propelled harvesters being used on storage operations. The main advantage of utilising this new technology and machine is to help us look after the soil. Other benefits include reduced bruising quality issues, less compaction, better field precision, less tractor trailers required, and improved driver comfort.



### Variety Development

All the varieties within our portfolio have their own unique characteristics, which is why we have a very diverse variety trials programme running throughout the season, to build knowledge on how to achieve the best potential from the crop. We work very closely with seed breeders, as well as our own seed business, 'Greenseed', which produces mini tubers, first, second and third generation seed. We are able to ensure that varieties coming through our supply chain meet our consumers' requirements – and the variety development plans for 2016 look very exciting.

**Looking forward to 2016, we have several opportunities to advance the way we look after one of our key assets - the soil. This will enable us to provide the processing industry with the best quality British potatoes that we have the passion to grow.**

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The use of well maintained, high performance equipment helps us operate efficiently and to control cost through constant review. Our aim is the reduction of waste and the addition of value, therefore time and inputs are carefully considered.

Spearhead's vision for the future of potato production in the UK is one of positivity and progress. The importance of producing potatoes to feed rising populations cannot be underestimated. Those producers who can control the cost of production and maintain quality will position themselves at the heart of one of the core sectors of the UK food industry.

## Spearhead Potatoes ...delivering the guarantee



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# Grower Relations the Spearhead approach

**Will Shakeshaft** (Spearhead Marketing Ltd Grower Relations Director) and **Chris Elvidge** (Grower Relations Manager) detail the responsibilities of their 'Grower relations' team and how they work with growers to overcome challenges in potato production.

The Spearhead Potatoes Grower relations team is tasked with developing an understanding of the challenge of growing potatoes in a difficult environment. We aim to provide for the individual needs of both our own growing enterprise and for the third party farms that we work with.

In partnership with likeminded processing potato growers, we operate transparently to encourage progress and deliver quality to our customers. By the sharing of core values, the company aims to develop honest and open relationships with growers, which stand the test of time.

Spearhead's use of innovative science and attention to detail has proved beneficial for both processing customers and growers. We deliver forward thinking technical services and take confidence from our reputation for safety, quality, reliability and strong crop provenance; key features of our ever developing and close relationships with Hutchinsons and NIAB CUF.

As large growers ourselves, we understand the need to engage at an operational level. We have used new varieties to break through existing yield barriers and are investing in reducing risk and bolstering sustainability; which is a collaborative process in conjunction with our third party growers.

The goal is to minimise the risks associated with potato production.

**Working closely with each of our growers means we develop an understanding of their changeable circumstances and barriers to success.**

Together, Chris and Will aim to match each farm's conditions and capabilities with the most suitable varieties and loading periods, enabling them to maximise yield potential and contribute to a long term plan of potato production from each field, on each farm.

We spend time on farm with each grower during the crucial stages of planting, emergence, canopy formation, burn off and harvest and aim to share the knowledge and experiences of the group during the growing season to influence crops in real time, rather than reviewing performance with the benefit of hindsight.

Understanding our customers' needs, their variety mix and the growers' strengths and challenges, allows us to plan and implement strategies to deliver the most from the geographical limitations of processing potato supply in the UK.

Flexibility and planning drives our 12 month supply contracts into major processing customers. Spearhead has the ability to load anything from 30 to 1,200 tonnes a day.

Attention to detail is focussed in the grading, washing and delivery of potatoes to our strategic processing partners. We have mobile capacity to support the delivery of these services nationwide and also make the most of existing equipment, labour and resource where it is already in place on farm.