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CONTENTS

GROWER SUMMARY

Headline

- Previous years trials in vining peas indicated possibilities for some pre and post-emergence herbicide replacements.

  - CONF pre-emergence was crop safe and effective.
  - Products containing diflufenican proved to be unsafe to the crop when used pre-emergence.
  - Low rate metribuzin applied post-emergence appeared crop safe and reasonably effective.
  - Aclonifen alone and in mixes with pendimethalin and clomazone pre-emergence gave effective weed control.
  - Post-emergence aclonifen + bentazone was generally crop safe and provided good levels of weed control.

Summary

Four efficacy trials and a varietal tolerance trial were carried out to further investigate the most effective pre- and post-emergence treatments identified in the 2004 work. In addition several new materials which had become available were also evaluated. The aim to identify possible alternatives that could be useful in vining peas following the withdrawal, in 2007, of the approved products used for effective weed control in vining peas..

Products containing diflufenican used pre-emergence gave good weed control but they caused unacceptable levels of crop bleaching. Nikeyl caused initial bleaching but the crop recovered quickly. Pre-emergence CONF applications were crop safe and controlled weeds better than the standard Reflex T. Aclonifen used alone and in mixes were the most promising pre-emergence treatments. Crop effects occurred at one site and some varietal differences in effects were seen at 2N rates but effects were transient and did not affect crop maturity. Crystal used alone was crop safe but weed control was not as good as that achieved with Reflex T.

Post-emergence low dose Sencorex and Crystal gave some control and appeared crop safe, but a pre-emergence application of a herbicide would be required to achieve acceptable control levels in most situations.

Post-emergence aclonifen + Basagran was generally crop safe, gave good levels of weed control and was persistent. At one site post-emergence treatments resulted in a statistically significant increase in yield and TR.

Action Points for Growers

Growers should be alert to news of new herbicide approvals.

SCIENCE SECTION

Introduction

Effective weed control in vining peas is essential to reduce competition and to minimise the risk of crop rejection due to contamination. After 2007 several currently approved herbicides will no longer be available for use. This will particularly affect vining pea production leaving both pre- and post-emergence options very limited.

This continuing project is aimed at identifying alternative crop safe and effective herbicide products currently used in other UK crops and generating data which may support Specific Off-label Approval applications. Also one material currently in use in other parts of the E.U. is to be evaluated to discover its potential for use in the UK. Crop safety work across a wide range of both combining and vining pea varieties will provide additional information.

Materials and Methods

Efficacy (HDC 1)

Trials were laid out at Twenty and Leadenhall within commercial crops of vining peas, varieties Barle and Scirocco respectively. Plots were 2m x 5m and there were 4 replications.

The site details were as follows:

Site 1: Twenty, Bourne, Lincolnshire OS Ref: TF 151 217. Sowing date: 21st April 2005. Site rolled after drilling.
Soil type: Silt loam.
Sprays applied: Pre-emergence 29th April 2005. Crop growth stage 003 (radicle and plumule apparent).

Site 2: Leadenhall Farm, Holbeach OS Ref: TF 355 328. Sowing date: 25th April 2005. Site rolled after drilling.
Soil type: Sandy silt loam.
Sprays applied: Pre-emergence 3rd May 2005. Crop growth stage 002 (radicle apparent).

At each site, seven pre-emergence sprays were examined. The products and treatments were as follows:-

	Trade Name	Application Rate (l/ha)	Timing
1	Untreated	-	-
2	Reflex T	2.5	pre-emergence
3	Aclonifen	4.5	pre-emergence
4	Stomp 400	2.0	pre-emergence
5	Centium + Aclonifen	0.25 + 2.0	pre-emergence
6	Aclonifen + Stomp 400	2.0 + 2.0	pre-emergence
7	Stomp + Centium	1.0 + 0.25	pre-emergence
8	Crystal	2.0	pre-emergence

Trade Name	Active Ingredient	Amount of Active Ingredient
Stomp 400 SC	pendimethalin	400 g/l
Aclonifen	aclonifen	600 g/l
Crystal	pendimethalin + flufenacet	300 : 60 g/l
Reflex T	fomesafen + terbutryn	80 : 400 g/l
Centium	clomazone	360 g/l

Crop husbandry followed standard practice.

After herbicide treatments were applied the vining peas were assessed for crop damage using % phytotoxicity where 100% = complete crop kill, >25% = probable yield reduction and 0% = no damage. Counts of the numbers of individual weed species were made in 3 random quadrats of 0.33 m^2 and the results statistically analysed using GENSTAT. Where appropriate general weed control scores were recorded. (0 – no control, 7 = an acceptable level of control, 10 – no weeds present). Where possible trials were harvested and yields statistically analysed using GENSTAT.

Efficacy (HDC 2)

Trials were laid out at Holland Fen and Swineshead Bridge within commercial crops of vining peas, varieties Bikini and Barle respectively. Plots were 2m x 5m and there were 4 replications.

The site details were as follows:

Site 1: Holland Fen. OS Ref: TF 245 467. Soil type: Silt loam. Site rolled.
Sowing date 27th April 2005.
Spray applications: Pre-emergence 15th May 2005. Crop growth stage 002 (radicle apparent).
Post-emergence: 9th June 2005. Crop growth stage 104 and 15 cm in height.

Site 2: Swineshead Bridge. OS Ref: TF 217 431. Soil type: Silty clay. Site rolled.
Sowing date: 4th May 2005.
Spray applications: Pre-emergence: 9th May 2005. Crop growth stage 002 (radicle apparent).
Post-emergence: 9th June 2005. Crop growth stage 104 and 20 cm in height.

At each site five additional pre-emergence followed by three post-emergence sprays were investigated
.
The products and treatments were as follows:-

	Trade Names Pre-emergence	Rate (l/ha)	Timing
1	Untreated	-	-
2	Reflex T	2.5/3.0	pre-emergence
3	CONF	4.5	pre-emergence
4	Herold	0.6	pre-emergence
5	Nikeyl	4.0	pre-emergence
6	Bacara	1.0	pre-emergence
7	Sencorex	150g	post-emergence
8	Aclonifen + Basagran SG	0.6 + 0.6	post-emergence
9	Crystal	2.0	post-emergence

Trade Name	Active Ingredient	Amount of Active Ingredient

Aclonifen	aclonifen	600 g/l
Crystal	pendimethalin + flufenacet	300 : 60 g/l
Sencorex	metribuzin	70% w/w
Herold	diflufenican + flufenacet	16.5 % : 32.5 %
Nikeyl	aclonifen + flurtamone	350 : 94 g/l
Bacara	diflufenican + flurtamone	100 :250 g/l
Basagran SG	bentazone	87% w/w
CONF	confidential	

Crop husbandry followed standard practice.

After herbicide treatments were applied the vining peas were assessed for crop damage using % phytotoxicity where 100% = complete crop kill, >25% = probable yield reduction and 0% = no damage. Counts of the numbers of individual weed species were made in 3 random quadrats of 0.33 m^2 and the results statistically analysed using GENSTAT. Where appropriate general weed control scores were recorded. (0 = no control, 7 = an acceptable level of control, 10 = no weeds present). Where possible trials were harvested and yields statistically analysed using GENSTAT.

Varietal Tolerance

53 vining pea varieties and 23 combining pea varieties were drilled within a commercial crop at Gedney, Holbeach Hurn.

Five varieties were drilled in double rows within each 2m drill width. The spray width across the varieties was 2m with untreated strips between every pair for comparison. Each treatment pair consisted of a normal (N rate) and a normal rate applied twice (2N rate) to represent a boom overlap. Treatments were not randomized and there were 2 replications.

Site Details:
Gedney, Holbeach Hurn. O.S. Grid Reference TF 401272. Soil type: Silt loam
Sowing date: 19th April 2005.

Spray applications: Pre-emergence 26th April. Crop growth stage 002 (radicle apparent).
Post-emergence 26th May 2005. Crop growth stage: 103-105 (3-5 nodes)

At the site 10 pre-emergence and 3 post-emergence materials were examined for crop safety (see below).

	Trade Names	Application Rate (l/ha)	Timing
1	Aclonifen	4.5 (N)	pre-emergence
2	Aclonifen	9.0 (2N)	pre-emergence
3	Stomp	2.0 (N)	pre-emergence
4	Stomp	4.0 (2N)	pre-emergence
5	Centium + aclonifen	0.25 + 2.0 (N)	pre-emergence
6	Centium + aclonifen	0.5 + 4.0 (2N)	pre-emergence
7	Stomp + aclonifen	2.0 + 2.0 (N)	pre-emergence
8	Stomp + aclonifen	4.0 + 4.0 (2N)	pre-emergence
9	Stomp + Centium	2.0 + 0.25 (N)	pre-emergence
10	Stomp + Centium	4.0 + 0.5 (2N)	pre-emergence
11	Crystal	2.0 (N)	pre-emergence
12	Crystal	4.0 (2N)	pre-emergence
13	CONF	4.5 (N)	pre-emergence
14	CONF	9.0 (2N)	pre-emergence
15	Herold	0.6 (N)	pre-emergence
16	Herold	1.2 (2N)	pre-emergence
17	Nikeyl	4.0 (N)	pre-emergence
18	Nikeyl	8.0 (2N)	pre-emergence
19	Bacara	1.0 (N)	pre-emergence
20	Bacara	2.0 (2N)	pre-emergence
21	Sencorex	150g (N)	post-emergence
22	Sencorex	300g (2N)	post-emergence
23	Aclonifen + Basagran SG	0.6 + 0.6 (N)	post-emergence
24	Aclonifen + Basagran SG	1.2 + 1.2 (2N)	post-emergence
25	Crystal	2.0 (N)	post-emergence
26	Crystal	4.0 (2N)	post-emergence

Trade Name	Active Ingredient	Amount of Active Ingredient
Stomp 400 SC	pendimethalin	400 g/l
Centium	clomazone	360 g/l
Crystal	pendimethalin + flufenacet	300 : 60 g/l
Sencorex	metribuzin	70% w/w
Herold	diflufenican + flufenacet	16.5 % : 32.5 %
Nikeyl	aclonifen + flurtamone	350 : 94 g/l
Bacara	diflufenican + flurtamone	100 :250 g/l
Basagran SG	bentazone	87% w/w
Aclonifen	aclonifen	600 g/l
CONF	confidential	

After applications, at various time intervals, varieties were assessed for phytotoxicity on a 1-5 scale, where 1 = highly tolerant, 2 = tolerant, 3 = slightly sensitive, 4 = moderately sensitive, 5 = highly sensitive.

Results

All weeds referred to using Bayer codes.

Efficacy (HDC 1)

Twenty: Crop emerged 7-8th May. No treatment caused a delay in emergence.
17th May – Crop growth stage: 101-102. No crop effects from any treatment and no weed development

Table 1: Twenty - % Phytotoxicity Assessment.
27th May 2005. Crop growth stage 103-104.

	Treatment	Rate (l/ha)	% Phytoxicity
1	Untreated	-	0
2	Reflex T	2.5	1.75
3	Aclonifen	4.5	0.5
4	Stomp 400	2.0	0
5	Centium + Aclonifen	0.25 + 2.0	0
6	Stomp + Aclonifen	2.0 + 2.0	0.5
7	Stomp + Centium	1.0 + 0.25	0
8	Crystal	2.0	0

Table 2 - Twenty - Weed Count. 27th May 2005
Crop growth stage: 103-104

	Treatment	POLAV	POLLA	BRSNN	CIRAR	SONAR	CHEAL	LAMPU	GALAP	POLPE	AECTY	POLCO	GAETE
1	Untreated	1.75	6.5	7.75	0.25	0.75	0.5	0.5	1.25	0	0	0.25	0.25
2	Reflex T	0	2.75	2	0	0.25	0.25	1.25	0.5	0	0	0	0
3	Aclonifen	0.5	2	0.75	0	0.5	0	0.5	0	0	0	0.25	0.25
4	Stomp 400	0	4.5	4.75	0.25	0.5	0.5	1.5	0	0.5	0.25	0.25	0.75
5	Centium + Aclonifen	1.25	3.5	4.75	0	0	0	0	0.5	0	0	0.5	0
6	Stomp + Aclonifen	0.5	4	3	0	0	0.25	0.25	0.25	0	0.25	0.25	0
7	Stomp + Centium	1.5	5.25	6.75	0	0.25	0	0.5	1.25	0	0	0.75	0
8	Crystal	1.25	4	7.25	0.5	0.25	0	2	1.5	0.5	0	0	0.25
	Fprob	0.307	0.156	0.028	0.596	0.802	0.496	0.605	0.432	0.345	0.583	0.615	0.694
	LSD	1.769	3.146	4.414	0.6214	1.046	0.6712	2.289	1.718	0.6214	0.3763	0.8279	0.929

Table 3 - Twenty - Weed Count 21st June 2005.
Crop growth stage: 50% flower

	Treatment	BRSNN	POLLA	SINAR	GALAP	CIRAR	SONAR	MAT spp	POLAV	POLCO	POLPE	LAMA	VERPE	AETCY	CHEAL
1	Untreated	5.5	5.5	2	1.5	0.5	0.25	0.5	1.5	0.25	0.75	1.25	0.25	0	0.5
2	Reflex T	2.75	1.75	0.75	0.75	0.5	0.75	0	0.75	0	0.25	2	0	0	0
3	Aclonifen	1	2	0	1.5	0	0.5	0	0.25	0.25	0.75	0	0	0	0
4	Stomp 400	3.5	3.25	1	0.5	0.25	0.25	0.25	0.75	0.2	0.5	0.25	0.25	0	0.25
5	Centium + Aclonifen	3.5	3.5	0	0.75	0.25	0	0	1.75	0.5	0.75	0.25	0.25	0	0
6	Stomp + Aclonifen	2.5	2.75	0	0.25	0.25	0.75	0.25	0.5	0.5	0.5	0.25	0	0.5	0.5
7	Stomp + Centium	5.25	4.25	1	0.75	0	0.5	0.5	1.75	1.25	0	1.25	0.5	0	0.25
8	Crystal	4	2	1.5	2.25	0	0.25	0.25	0.75	1	0.25	0.75	0	0	0
	Fprob	0.252	0.008	0.007	0.734	0.69	0.728	0.734	0.652	0.246	0.845	0.128	0.459	0.024	NS
	LSD	3.638	1.945	1.119	2.468	0.746	0.984	0.78	2.01	1.04	1.2	1.497	0.547	0.3	

Table 4 - Twenty - General Weed Control 21st June 2005
Crop growth stage 50% flower

	Treatment	Rate (l/ha)	Weed Control
1	Untreated		0
2	Reflex T	2.5	5.25
3	Aclonifen	4.5	6.50
4	Stomp 400	2.0	4.00
5	Centium + Aclonifen	0.25 + 2.0	5.50
6	Stomp + Aclonifen	2.0 + 2.0	5.25
7	Stomp + Centium	1.0 + 0.25	3.75
8	Crystal	2.0	4.75

Table 5 - Twenty - General Weed Control 5th July 2005.
Crop growth stage 205-206 (flat pod/swell)

	Treatment	Rate (l/ha)	Weed Control
1	Untreated		0
2	Reflex T	2.50	4.75
3	Aclonifen	4.50	4.75
4	Stomp 400	2.00	4.25
5	Centium + Aclonifen	0.25 + 2.0	4.00
6	Stomp + Aclonifen	2.0 + 2.0	4.75
7	Stomp + Centium	1.0 + 0.25	4.00
8	Crystal	2.00	4.00

Leadenhall Farm: Crop emerged 9th May 2005. No treatment caused a delay in emergence.

A weed population did not develop at this site.

Table 6 - % Phytotoxicity

	Treatment	Rate (l/ha)	19/05/05 GS:103	27/05/05 GS:104	20/06/05 GS:203/204
1	Untreated		0	0	0
2	Reflex T	2.5	0	2.5	0
3	Aclonifen	4.5	20	3.5	0
4	Stomp 400	2	0	3	0
5	Centium + Aclonifen	0.25 + 2.0	8.75	5	0
6	Stomp + Aclonifen	2.0 + 2.0	3.75	3	0
7	Stomp + Centium	1.0 + 0.25	0.75	1.5	0
8	Crystal	2	0.5	2.75	0

Table 7 - Leadenhall Farm - Harvest data. 14th July 2005.

	Treatment	Rate (l/ha)	Bag Wt	Fresh Wt	TR
1	Untreated		36	7.48	111
2	Reflex T	2.5	33.55	7.06	111
3	Aclonifen	4.5	32.45	6.7	114.7
4	Stomp 400	2	31.5	6.64	115
5	Centium + Aclonifen	0.25 + 2.0	35.9	7.16	109.2
6	Stomp + Aclonifen	2.0 + 2.0	33.9	7.28	112.5
7	Stomp + Centium	1.0 + 0.25	34.65	7.22	113.5
8	Crystal	2	35	6.81	109.2
	Fprob		0.601	0.613	0.816
	LSD		5.26	1.0	9.35

HDC (2)

Holland Fen.
Crop emerged 24th May 2005. No treatment caused any delay in emergence.

Table 8 - Holland Fen - % Phytotoxicity.

	Treatment	Rate (l/ha)	27/05/2005 GS: 101-102	09/06/2005 GS: 104	20/06/2005 GS: 105
1	Untreated	-	0	0	0
2	Reflex T	2.5/3.0	0	0	0
3	Conf	4.5	0	0	0
4	Herold	0.6	30	22.5	9.25
5	Nikeyl	4.0	30	5	3
6	Bacara	1.0	30	22.5	9.75
7	Sencorex	150g	0	0	0.5
8	Aclonifen + Basagran	0.6 + 0.6kg	0	0	2.25
9	Crystal	2.0	0	0	0

Table 9 **-** Holland Fen - General Weed Control.

	Treatment	Rate (l/ha)	20/06/2005 GS: 105	05/07/2005 GS: 205
1	Untreated	-	0	0
2	Reflex T	2.5/3.0	5.5	4.25
3	Conf	4.5	8.75	7.25
4	Herold	0.6	9.0	7.25
5	Nikeyl	4.0	9.0	8.0
6	Bacara	1.0	9.0	7.25
7	Sencorex	150g	8.75	6.5
8	Aclonifen + Basagran	0.6 + 0.6	9.0	8.0
9	Crystal	2.0	4.25	5.75

Table 10 - Holland Fen - Weed count 9th June 2005.
Crop growth stage 104.

	Treatment	Rate (l/ha)	LAMPU	LAMAM	VERPE	STEME	THLAR	BRSNN	SONAR	SENVU	URTUR	POLCO
1	Untreated	-	17.5	6.25	1.25	5.75	0.5	2.75	0.5	0	0	0
2	Reflex T	2.5/3.0	6.25	4.25	0.75	2	0	1.25	0	0	0	0
3	Conf	4.5	0.5	0.25	0	1.25	0	0.75	0.25	0	0	0
4	Herold	0.6	0	0	0	0	0	0.25	0	0	0	0
5	Nikeyl	4.0	0	0	0	0	0	0.75	0	0	0	0
6	Bacara	1.0	0	0	0	0	0	1	0	0	0	0
7	Sencorex	150g	14.25	5	2	6	2.25	1.75	1.25	0	0.25	0
8	Aclonifen + Basagran SG	0.6 + 0.6kg	11	7	3.75	5.25	2.25	2.25	0.75	0.25	0	0
9	Crystal	2.0	10.75	8.5	1.75	5	0.75	1.5	0.25	0	0	0.25
	Fprob		<0.001	0.013	0.006	<0.001	<0.001	0.19	0.171	0.461	0.461	0.461
	LSD		7.369	5.64	1.946	2.077	1.194	1.851	0.993	0.243	0.243	0.243

Table 11 – Holland Fen – Weed Count 20th June 2005.
Crop growth stage 105.

	Treatment	Rate (l/ha)	STEME	LAMPU	VERPE	THLAR	SONAR	BRSNN	LAMAM
1	Untreated	-	8.25	17.75	4	1	1.75	2.25	5.5
2	Reflex T	2.5/3.0	2.25	10	0	0	0	0.75	1
3	Conf	4.5	1.25	0.5	0	0	0	0.25	0
4	Herold	0.6	0	0	0	0	0	0.5	0
5	Nikeyl	4.0	0	0	0.25	0	0	0	0.25
6	Bacara	1.0	0	0	0	0	0	1.25	0
7	Sencorex	150g	0.25	0.5	0	0	0.5	0.5	0.25
8	Aclonifen + Basagran SG	0.6 + 0.6kg	0	0	0	0	0	0.5	0
9	Crystal	2.0	5.25	10.5	0.75	0	0.25	1.75	1
	Fprob		<0.001	<0.001	0.002	<0.001	0.014	0.016	0.037
	LSD		1.907	7.585	1.792	0.3972	0.95	1.232	3.252

Table 12 – Holland Fen – Harvest data. 25th July 2005

	Treatment	Rate (l/ha)	Bag Wt	Fresh Wt	TR
1	Untreated	-	39.7	4.014	92.5
2	Reflex T	2.5/3.0	37.3	4.466	94.5
3	Conf	4.5	36.05	4.989	96
4	Herold	0.6	36.7	4.719	88.75
5	Nikeyl	4	38.45	5.159	91.75
6	Bacara	1	35.2	4.458	92
7	Sencorex	150g	37.5	5.4	100
8	Aclonifen + Basagran	0.6 + 0.6kg	39.7	5.46	99.75
9	Crystal	2	35.95	3.222	91.25
	Fprob		0.4	<0.001	0.002
	LSD		4.515	0.6423	5.415

Swineshead Bridge.
Crop emerged 21st May 2005. No treatment delayed emergence.

Table 13 - % Phytotoxicity

	Treatment	Rate (l/ha)	27/05/2005 GS:102-103	09/06/2005 GS:104-105	20/06/2005 GS:106
1	Untreated	-	0	0	0
2	Reflex T	2.5/3.0	0	0	0
3	Conf	4.5	0	0	0
4	Herold	0.6	28.75	12.5	3
5	Nikeyl	4.0	16.25	6.75	3.5
6	Bacara	1.0	28.75	12.25	2.75
7	Sencorex	150g	0	0	0
8	Aclonifen + Basagran SG	0.6 + 0.6kg	0	0	0
9	Crystal	2.0	0	0	0

Table 14 - Swineshead Bridge - General Weed Control

	Treatment	Rate (l/ha)	27/05/2005 GS:102-103	20/06/2005 GS: 106	05/07/2005 GS: 205	13/07/2005 GS: 207
1	Untreated	-	0	0	0	0
2	Reflex T	2.5/3.0	6.25	3	5.5	4.75
3	Conf	4.5	5.5	4.25	5.5	5.25
4	Herold	0.6	7.25	4	5.25	3.5
5	Nikeyl	4	7.75	7.5	7.5	7.5
6	Bacara	1	6.25	4.25	5.75	3.75
7	Sencorex	150g	0	7.75	6.25	5.5
8	Aclonifen + Basagran	0.6 + 0.6kg	0	5.75	8	7.75
9	Crystal	2	0	2.75	5.25	4

Table 15 - Swineshead Bridge - Weed Count 9th June.
Crop growth stage 104-105

	Treatment	Rate (l/ha)	POLPE	VERPE	CHEAL	POLAV	SENVU	SONAR	CIRAR	POLCO	VERHE	STEME
1	Untreated	-	54.7	34.5	5.5	3.75	0.25	0.25	0.25	1.25	0	0
2	Reflex T	2.5/3.0	51	18.8	1.5	0.5	0	0.75	0	1	0.25	0
3	Conf	4.5	54.5	0.5	0	0	0	0	0	0	0.75	0
4	Herold	0.6	47.2	0	0.25	0	0	0	0	0.25	0	0
5	Nikeyl	4.0	8.5	0.5	0	0	0	0	0	0.5	0	0
6	Bacara	1.0	53.7	0.5	0	0	0	0	0	0.25	0.5	0
7	Sencorex	150g	62.2	33.2	5.5	2.75	0.25	0.75	0	1.75	0.25	0.25
8	Aclonifen + Basagran SG	0.6 + 0.6kg	82.2	27	4.25	2.25	0	0	0	2	1.25	0
9	Crystal	2.0	59.5	30.5	3.25	2.75	0	1.25	0	0.5	1.25	0.25
	Fpr		0.007	<.001	<.001	0.018	0.577	0.213	0.461	0.268	0.148	0.461
	LSD		29.71	14.8	2.449	2.574	0.351	1.12	0.243	1.78	1.132	0.322

Table 16 - Swineshead Bridge- Weed Count 20th June 2005
Crop growth stage 106

	Treatment	Rate (l/ha)	POLPE	VERPE	ATXPA	CHEAL	POLAV	POLCO	POLLA	VERHE
1	Untreated	-	57.2	42	1.5	3.25	5.25	1.25	0	0.25
2	Reflex T	2.5/3.0	57.7	21.8	1	2	2.25	0.5	0	1
3	Conf	4.5	37	0.2	0	0	0.25	0.5	2	0.5
4	Herold	0.6	65.5	0	0.25	0	0.25	0.25	0	0.25
5	Nikeyl	4.0	11.3	0.2	0.25	0	0.75	0	0	0.75
6	Bacara	1.0	58	1	0.5	0.75	1	0.75	0	0
7	Sencorex	150g	17.5	4.2	1.25	1.5	4	1.5	0	0
8	Aclonifen + Basagran SG	0.6 + 0.6kg	0.5	0.7	0.5	0.5	2	0	0	1.25
9	Crystal	2.0	38.5	28.3	1.25	2	2.25	1.5	0	0.75
	Fprob		<0.001	<0.001	0.069	0.002	0.003	0.124	0.461	0.219
	LSD		25.13	12.9	1.07	1.575	2.421	1.293	1.95	1.06

Table 17 - Swineshead Bridge – Harvest data – 21st July 2005.

	Treatment	Rate (l/ha)	Bag Wt (kg)	Fresh Wt (kg)	TR
1	Untreated	-	34.75	6.38	85.5
2	Reflex T	2.5/3.0	35.05	7.33	86.5
3	Conf	4.5	36.75	7.58	86.75
4	Herold	0.6	34.15	6.28	83
5	Nikeyl	4.0	35.4	7.01	85
6	Bacara	1.0	35.25	6.77	82
7	Sencorex	150g	33.5	7.12	88
8	Aclonifen + Basagran SG	0.6 + 0.6kg	33.55	7.64	88.25
9	Crystal	2.0	31.6	6.8	88.75
	Fprob		0.214	0.134	<0.001
	LSD		3.512	1.06	2.336

Varietal Tolerance

Table 18 - Varietal Tolerance Scores 12th May 2005
Crop growth stage 101-102
Pre-emergence applications

	Aclonifen 4.5l/ha (N)	Aclonifen 9.0l/ha (2N)	Stomp 400 2.0l/ha (N)	Stomp 400 4.0l/ha (2N)	Centium + Aclonifen 0.25+2.0l/a (N)	Centium + Aclonifen 0.5+4.0l/ha (2N)	Stomp + Aclonifen 2.0+2.0 (N)	Stomp + Aclonifen 4.0+4.0 (2N)	Stomp + Centium 1.0+0.25l/ha (N)	Stomp + Centium 2.0+0.5l/ha (2N)	Crystal 2.0l/a (N)	Crystal 4.0l/ha (2N)	CONF 4.5l/ha (N)	CONF 9.0l/ha (2N)	Herold 0.6l/ha (N)	Herold 1.2l/ha (2N)	Nikeyl 4.0l/ha (N)	Nikeyl 8.0l/ha (2N)	Bacara 1.0l/ha (N)	Bacara 2.0l/ha (2N)
Vining peas																				
AKURA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	3
AMBASSADOR	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2
ARNESA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	1	2
ASHTON	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	3	2	2	2	3
AVOLA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	2	3
BAGHERA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
BALMORAL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	2	1	2
BARLE	1	1	1	1	1	1	*	*	1	1	1	1	1	1	1	1	1	1	4	4
BASTION	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	2
BIKINI	2	3	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	2	3
BINGO	1	1	1	1	*	1	1	1	1	1	1	1	1	1	2	3	*	2	3	3
CABERET	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	2
CABREE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2
CARIBOU	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
CERESA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
COLANA	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	3	3
CORUS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1
DAKOTA	1	1	1	1	*	2	1	*	1	1	1	1	1	1	1	1	1	1	2	3
ENZO	1	2	1	1	1	1	*	*	1	1	1	1	1	1	1	2	1	2	3	3
GALLANT	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	3	3
GEISHA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2
GENEVA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	2	3
IBIS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	2	2	3

	Aclonifen 4.5l/ha (N)	Aclonifen 9.0l/ha (2N)	Stomp 400 2.0l/ha (N)	Stomp 400 4.0l/ha (2N)	Centium + Aclonifen 0.25+2.0l/a (N)	Centium + Aclonifen 0.5+4.0l/ha (2N)	Stomp + Aclonifen 2.0+2.0 (N)	Stomp + Aclonifen 4.0+4.0 (2N)	Stomp + Centium 1.0+0.25l/ha (N)	Stomp + Centium 2.0+0.5l/ha (2N)	Crystal 2.0l/a (N)	Crystal 4.0l/ha (2N)	CONF 4.5l/ha (N)	CONF 9.0l/ha (2N)	Herold 0.6l/ha (N)	Herold 1.2l/ha (2N)	Nikeyl 4.0l/ha (N)	Nikeyl 8.0l/ha (2N)	Bacara 1.0l/ha (N)	Bacara 2.0l/ha (2N)
JAGUAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	3	4
KIROS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2
LORIOT	1	1	*	*	*	*	1	*	1	1	1	1	1	1	2	3	2	2	2	3
MERIDIAN	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	2	2	3
MISTY	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	3
NALESA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
NOVELLA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	3	4
OASIS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
PACHA	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	3	2	2	3	3
PASO	1	1	*	*	*	*	1	1	1	1	1	1	1	*	1	*	*	*	2	4
PL 65	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	2	2	3	3
PREMIO	1	2	1	1	1	1	1	1	1	1	1	1	1	1	3	4	2	3	2	3
RANGER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
REVEILLE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	2	3
SAMISH	1	1	1	1	1	1	*	1	1	1	1	1	1	1	1	2	1	1	3	3
SERGE	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	3
SIGRA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SNAKE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	3
STARLIGHT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3
TEEPEE	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	2	2
TENDRILA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TRISTAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3
TWINKLE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	1	2
URBANA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2
WAVEREX	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	2	2	2	2
WINNER	1	1	1	1	1	1	*	*	1	1	1	1	1	1	1	2	1	1	1	2
ZELDA	2	3	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2
ZODIAC	1	1	1	1	1	1	1	1	1	1	*	1	*	1	1	1	2	2	1	2

Assessment:
12th May 2005

Combining peas	Aclonifen 4.5l/ha (N)	Aclonifen 9.0l/ha (2N)	Stomp 400 2.0l/ha (N)	Stomp 400 4.0l/ha (2N)	Centium + Aclonifen 0.25+2.0l/a (N)	Centium + Aclonifen 0.5+4.0l/ha (2N)	Stomp + Aclonifen 2.0+2.0 (N)	Stomp + Aclonifen 4.0+4.0 (2N)	Stomp + Centium 1.0+0.25l/ha (N)	Stomp + Centium 2.0+0.5l/ha (2N)	Crystal 2.0l/a (N)	Crystal 4.0l/ha (2N)	CONF 4.5l/ha (N)	CONF 9.0l/ha (2N)	Herold 0.6l/ha (N)	Herold 1.2l/ha (2N)	Nikeyl 4.0l/ha (N)	Nikeyl 8.0l/ha (2N)	Bacara 1.0l/ha (N)	Bacara 2.0l/ha (2N)
ALEZAN	1	1	1	*	*	*	1	1	1	1	1	1	*	*	*	1	1	1	1	2
BEETLE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	2
BILBO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BUNTING	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	2	2
CONCORDE	1	1	1	1	1	1	*	1	1	*	1	1	1	1	1	2	1	2	1	2
COOPER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	2	1	1	1	1
ENIGMA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2
GOBLIN	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	2
HAWAII	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1
KABUKI	1	1	1	1	1	1	*	1	1	1	1	1	*	*	*	*	1	1	*	*
KAHUNA	1	1	*	1	1	1	1	1	1	1	1	1	1	*	1	2	1	2	2	2
LD9360	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1
MARO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	2	3
MINERVA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1	1
NITOUCHE	1	1	1	1	*	*	*	1	1	1	1	1	1	*	1	*	1	*	*	*
ORKA	1	1	1	1	1	1	1	1	1	1	1	1	1	*	2	3	2	3	1	1
PRINCESS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	4	1	1	2	2
ROCKET	1	1	1	1	1	1	1	1	1	1	1	1	1	1	*	1	1	1	1	1
ROSE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2
SAMSON	1	1	1	1	*	1	1	1	1	1	1	*	1	2	2	2	2	3	2	2
SIOUX	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	*	1	1	2	2
VEDETTE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	2	2	3	3
VEDETTE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	3
VENTURE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2
WOODY	1	1	1	1	1	*	1	1	1	1	1	*	1	1	1	1	1	1	2	2

KEY: 1 = Highly Tolerant, 2 = Tolerant, 3 = Slightly Sensitive, 4 = Moderately Sensitive; 5 = Highly Sensitive *No plants available for assessment

Table 19 - Varietal Tolerance Scores 31st May 2005
Crop growth stage 104
Pre-emergence applications

	Aclonifen 4.5l/ha (N)	Aclonifen 9.0l/ha (2N)	Stomp 400 2.0l/ha (N)	Stomp 400 4.0l/ha (2N)	Centium + Aclonifen 0.25+2.0l/a (N)	Centium + Aclonifen 0.5+4.0l/ha (2N)	Stomp + Aclonifen 2.0+2.0 (N)	Stomp + Aclonifen 4.0+4.0 (2N)	Stomp + Centium 1.0+0.25l/ha (N)	Stomp + Centium 2.0+0.5l/ha (2N)	Crystal 2.0l/a (N)	Crystal 4.0l/ha (2N)	CONF 4.5l/ha (N)	CONF 9.0l/ha (2N)	Herold 0.6l/ha (N)	Herold 1.2l/ha (2N)	Nikeyl 4.0l/ha (N)	Nikeyl 8.0l/ha (2N)	Bacara 1.0l/ha (N)	Bacara 2.0l/ha (2N)
Vining peas																				
AKURA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	3	3
AMBASSADOR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	3	4
ARNESA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	2	3
ASHTON	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	3	3
AVOLA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	2	3
BAGHERA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	4	1	1	3	3
BALMORAL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	3	4
BARLE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	4	4
BASTION	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	3	3
BIKINI	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	3	3
BINGO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	4	1	1	3	3
CABERET	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	2	2
CABREE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	2	3
CARIBOU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	3
CERESA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	2	2
COLANA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	4	1	1	3	3
CORUS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	3	4
DAKOTA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	3	3
ENZO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	4	4
GALLANT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	3	4
GEISHA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	3	3
GENEVA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	3	3
IBIS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	4	1	1	3	3
JAGUAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	3	3

	Aclonifen 4.5l/ha (N)	Aclonifen 9.0l/ha (2N)	Stomp 400 2.0l/ha (N)	Stomp 400 4.0l/ha (2N)	Centium + Aclonifen 0.25+2.0l/a (N)	Centium + Aclonifen 0.5+4.0l/ha (2N)	Stomp + Aclonifen 2.0+2.0 (N)	Stomp + Aclonifen 4.0+4.0 (2N)	Stomp + Centium 1.0+0.25l/ha (N)	Stomp + Centium 2.0+0.5l/ha (2N)	Crystal 2.0l/a (N)	Crystal 4.0l/ha (2N)	CONF 4.5l/ha (N)	CONF 9.0l/ha (2N)	Herold 0.6l/ha (N)	Herold 1.2l/ha (2N)	Nikeyl 4.0l/ha (N)	Nikeyl 8.0l/ha (2N)	Bacara 1.0l/ha (N)	Bacara 2.0l/ha (2N)
KIROS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	3	3
LORIOT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	3	3
MERIDIAN	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	2	3
MISTY	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	4	1	1	3	3
NALESA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	3	3
NOVELLA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	4	1	1	4	4
OASIS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	3	4
PACHA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	3	3
PASO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	*	1	*	3	3
PL 65	1	1	1	1	1	1		1	1	1	1	1	1	1	2	3	1	1	3	4
PREMIO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	2	3
RANGER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	4	4
REVEILLE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	2	3
SERGE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	3	4
SIGRA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	2
SNAKE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	3	4
STARLIGHT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	3
SUPERANA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	3
TEEPEE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	3	3
TENDRILA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	3	3
TRISTAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	3	4
TWINKLE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	2	3
URBANA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	3	3
WAVEREX	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	2	3
WINNER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	2	3
ZAMIRA	1	2	1	1	2	3	1	1	1	1	1	1	1	1	3	4	2	*	3	4
ZELDA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	3	3
ZODIAC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	3	3

Assessment:
31st May 2005

Combining peas	Aclonifen 4.5l/ha (N)	Aclonifen 9.0l/ha (2N)	Stomp 400 2.0l/ha (N)	Stomp 400 4.0l/ha (2N)	Centium + Aclonifen 0.25+2.0l/a (N)	Centium + Aclonifen 0.5+4.0l/ha (2N)	Stomp + Aclonifen 2.0+2.0 (N)	Stomp + Aclonifen 4.0+4.0 (2N)	Stomp + Centium 1.0+0.25l/ha (N)	Stomp + Centium 2.0+0.5l/ha (2N)	Crystal 2.0l/a (N)	Crystal 4.0l/ha (2N)	CONF 4.5l/ha (N)	CONF 9.0l/ha (2N)	Herold 0.6l/ha (N)	Herold 1.2l/ha (2N)	Nikeyl 4.0l/ha (N)	Nikeyl 8.0l/ha (2N)	Bacara 1.0l/ha (N)
ALEZAN	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
BEETLE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
BILBO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
BUNTING	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2
CONCORDE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	2
COOPER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
ENIGMA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
GOBLIN	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
HAWAII	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1
KABUKI	*	*	1	1	1	1	1	1	1	1	1	1	1	1	2	2	*	*	2
KAHUNA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	3
LD9360	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	1
MARO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2
MINERVA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
NITOUCHE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	3
ORKA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1
PRINCESS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	3
ROCKET	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	*	3
ROSE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2
SAMSON	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2
SIOUX	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2
VEDETTE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	3
VEDETTE	1	1	1	1	1	2	1	1	1	1	1	1	1	1	3	4	1	1	3
VENTURE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
WOODY	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	*	*	2

KEY: 1 = Highly Tolerant, 2 = Tolerant, 3 = Slightly Sensitive, 4 = Moderately Sensitive; 5 = Highly Sensitive *No plants available for assessment

Table 20 - Varietal Tolerance Scores 31st May 2005
Crop growth stage 104
Post-emergence applications.

Vining peas	Sencorex 150g/ha (N)	Sencorex 300g/ha (2N)	Aclonifen + Basagran 0.6+0.6l/ha (N)	Aclonifen + Basagran 1.2+1.2l/ha (2N)	Crystal 2.0l/ha (N)	Crystal 4.0l/ha (2N)
AKURA	1	1	1	1	1	1
AMBASSADOR	1	1	1	1	1	1
ARNESA	1	1	1	1	1	1
ASHTON	1	1	1	1	1	1
AVOLA	1	1	1	1	1	1
BAGHERA	1	1	1	1	1	1
BALMORAL	1	1	1	1	1	1
BARLE	1	1	1	1	1	1
BASTION	1	1	1	1	1	1
BIKINI	1	1	1	1	1	1
BINGO	1	1	1	1	1	1
CABERET	1	1	1	1	1	1
CABREE	1	1	1	1	1	1
CARIBOU	1	1	1	1	1	1
CERESA	1	1	1	1	1	1
COLANA	1	1	1	1	1	1
CORUS	1	1	1	1	1	1
DAKOTA	1	1	1	2	1	1
ENZO	1	1	1	1	1	1
GALLANT	1	1	1	1	1	1
GEISHA	1	1	1	1	1	1
GENEVA	1	1	1	1	1	1
IBIS	1	1	1	1	1	1
JAGUAR	1	1	1	1	1	1
KIROS	1	1	1	1	1	1
LORIOT	1	1	1	1	1	1
MERIDIAN	1	1	1	1	1	1
MISTY	1	1	1	1	1	1
NALESA	1	1	1	1	1	1
NOVELLA	1	1	1	1	1	1
OASIS	1	1	1	1	1	1
PACHA	1	1	1	1	1	1
PASO	1	1	1	1	1	1
PL 65	1	1	1	1	1	1

	Sencorex 150g/ha (N)	Sencorex 300g/ha (2N)	Aclonifen + Basagran 0.6+0.6l/ha (N)	Aclonifen + Basagran 1.2+1.2l/ha (2N)	Crystal 2.0l/ha (N)	Crystal 4.0l/ha (2N)
PREMIO	1	1	1	1	1	1
RANGER	1	1	1	1	1	1
REVEILLE	1	1	1	1	1	1
SAMISH	1	1	1	1	1	1
SERGE	1	1	1	1	1	1
SIGRA	1	1	1	1	1	1
SNAKE	1	1	1	1	1	1
STARLIGHT	1	1	1	1	1	1
SUPERANA	1	1	1	1	1	1
TEEPEE	1	1	1	1	1	1
TENDRILA	1	1	1	1	1	1
TRISTAR	1	1	1	1	1	1
TWINKLE	1	1	1	1	1	1
URBANA	1	1	1	1	1	1
WAVEREX	1	1	1	1	1	1
WINNER	1	1	1	1	1	1
ZAMIRA	1	1	1.5	2.5	1	1
ZELDA	1	1	1	1	1	1
ZODIAC	1	1	1	1	1	1

1 = Highly tolerant
2 = Tolerant
3 = Slightly sensitive
4 = Moderately sensitive
5 = Highly sensitive

Assessment 31st May 2005

Combining peas	Sencorex 150g/ha (N)	Sencorex 300g/ha (2N)	Aclonifen + Basagran 0.6+0.6l/ha (N)	Aclonifen + Basagran 1.2+1.2l/ha (2N)	Crystal 2.0l/ha (N)	Crystal 4.0l/ha (2N)
ALEZAN	1	1	1	1	1	1
BEETLE	1	1	1	1	1	1
BILBO	1	1	1	1	1	1
BUNTING	1	1	1	1	1	1
CONCORDE	1	1	1	1	1	1
COOPER	1	1	1	1	1	1
ENIGMA	1	1	2	1	1	1
GOBLIN	1	1	1	1	1	1
HAWAII	1	1	1	1	1	1
KABUKI	1	1	1	1	1	1
KAHUNA	1	1	1	1	1	1
LD9360	1	1	1	1	1	1
MARO	1	1	1	1	1	1
MINERVA	1	1	1	1	1	1
NITOUCHE	1	1	1	1	1	1
ORKA	1	1	1	1	1	*
PRINCESS	1	1	1	1	1	1
ROCKET	*	*	1	1	1	1
ROSE	1	1	1	1	1	1
SAMSON	1	1	1	1	1	1
SIOUX	1	1	1	1	1	1
VEDETTE	1	1	1	1	1	1
VEDETTE	1	1	1	1	1	1
VENTURE	1	1	1	1	1	1
WOODY	*	*	1	1	1	*

1 = Highly tolerant
2 = Tolerant
3 = Slightly sensitive
4 = Moderately sensitive
5 = Highly sensitive

Table 21 - Varietal Tolerance Scores 20th June 2005.
Crop growth stage 204. Pre-emergence applications.

Vining peas	Aclonifen 4.5l/ha (N)	Aclonifen 9.0l/ha (2N)	Stomp 400 2.0l/ha (N)	Stomp 400 4.0l/ha (2N)	Centium + Aclonifen 0.25+2.0l/a (N)	Centium + Aclonifen 0.5+4.0l/ha (2N)	Stomp + Aclonifen 2.0+2.0 (N)	Stomp + Aclonifen 4.0+4.0 (2N)	Stomp + Centium 1.0+0.25l/ha (N)	Stomp + Centium 2.0+0.5l/ha (2N)	Crystal 2.0l/a (N)	Crystal 4.0l/ha (2N)	CONF 4.5l/ha (N)	CONF 9.0l/ha (2N)	Herold 0.6l/ha (N)	Herold 1.2l/ha (2N)	Nikeyl 4.0l/ha (N)	Nikeyl 8.0l/ha (2N)	Bacara 1.0l/ha (N)	Bacara 2.0l/ha (2N)
AKURA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
AMBASSADOR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1	2	1	2
ARNESA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1
ASHTON	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	3
AVOLA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
BAGHERA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2
BALMORAL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
BARLE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1
BASTION	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BIKINI	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BINGO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	1	2
CABERET	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
CABREE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
CARIBOU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CERESA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1
COLANA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
CORUS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
DAKOTA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ENZO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GALLANT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	2	3
GEISHA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	2	3
GENEVA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
IBIS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1
JAGUAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
KIROS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2
LORIOT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	3	2	3	3

	Aclonifen 4.5l/ha (N)	Aclonifen 9.0l/ha (2N)	Stomp 400 2.0l/ha (N)	Stomp 400 4.0l/ha (2N)	Centium + Aclonifen 0.25+2.0l/a (N)	Centium + Aclonifen 0.5+4.0l/ha (2N)	Stomp + Aclonifen 2.0+2.0 (N)	Stomp + Aclonifen 4.0+4.0 (2N)	Stomp + Centium 1.0+0.25l/ha (N)	Stomp + Centium 2.0+0.5l/ha (2N)	Crystal 2.0l/a (N)	Crystal 4.0l/ha (2N)	CONF 4.5l/ha (N)	CONF 9.0l/ha (2N)	Herold 0.6l/ha (N)	Herold 1.2l/ha (2N)	Nikeyl 4.0l/ha (N)	Nikeyl 8.0l/ha (2N)	Bacara 1.0l/ha (N)	Bacara 2.0l/ha (2N)
MERIDIAN	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MISTY	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2
NALESA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1
NOVELLA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
OASIS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1
PACHA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	3	3
PASO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	4	1	2	2	3
PL 65	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	4	2	3	1	2
PREMIO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3
RANGER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
REVEILLE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	3	3
SAMISH	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SERGE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	2
SIGRA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SNAKE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
STARLIGHT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SUPERANA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TEEPEE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
TENDRILA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1
TRISTAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	2
TWINKLE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
URBANA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
WAVEREX	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	2	2
WINNER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
ZAMIRA	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	1	1	2	3
ZELDA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	3
ZODIAC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	2

Assessment 20th June 2005. Pre-emergence applicatons.

Combining peas	Aclonifen 4.5l/ha (N)	Aclonifen 9.0l/ha (2N)	Stomp 400 2.0l/ha (N)	Stomp 400 4.0l/ha (2N)	Centium + Aclonifen 0.25+2.0l/a (N)	Centium + Aclonifen 0.5+4.0l/ha (2N)	Stomp + Aclonifen 2.0+2.0 (N)	Stomp + Aclonifen 4.0+4.0 (2N)	Stomp + Centium 1.0+0.25l/ha (N)	Stomp + Centium 2.0+0.5l/ha (2N)	Crystal 2.0l/a (N)	Crystal 4.0l/ha (2N)	CONF 4.5l/ha (N)	CONF 9.0l/ha (2N)	Herold 0.6l/ha (N)	Herold 1.2l/ha (2N)	Nikeyl 4.0l/ha (N)	Nikeyl 8.0l/ha (2N)	Bacara 1.0l/ha (N)	Bacara 2.0l/ha (2N)
ALEZAN	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1
BEETLE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2
BILBO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BUNTING	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	*
CONCORDE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1
COOPER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1
ENIGMA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GOBLIN	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
HAWAII	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
KABUKI	1	1	1	1	1	1	1	1	1	1	1	1	1	1	*	1	1	2	1	1
KAHUNA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LD9360	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MARO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
MINERVA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
NITOUCHE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
ORKA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
PRINCESS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ROCKET	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	2	3	1	1
ROSE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
SAMSON	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SIOUX	1	1	1	1	1	1	1	1	1	1	1	1	1	1	*	1	1	2	1	1
VEDETTE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	2
VEDETTE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	3	3
VENTURE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2
WOODY	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	*	*

KEY: 1 = Highly Tolerant, 2 = Tolerant, 3 = Slightly Sensitive, 4 = Moderately Sensitive; 5 = Highly Sensitive

Table 22 - Varietal Tolerance Scores 20th June 2005
Post-emergence applications.

Vining peas	Sencorex 150g/ha (N)	Sencorex 300g/ha (2N)	Aclonifen + Basagran 0.6+0.6l/ha (N)	Aclonifen + Basagran 1.2+1.2l/ha (2N)	Crystal 2.0l/ha (N)	Crystal 4.0l/ha (2N)
AKURA	1	1	1	1	1	1
AMBASSADOR	1	1	1	1	1	1
ARNESA	1	1	1	1	1	1
ASHTON	1	1	1	1.5	1	1
AVOLA	1	1	1.5	2	1	1
BAGHERA	1	1	1	1.5	1	1
BALMORAL	1	1	1	1	1	1
BARLE	1	1	1	1	1	1
BASTION	1	1	1	1	1	1
BIKINI	1	1	1	1	1	1
BINGO	1	1	1.5	1.5	1	1
CABERET	1	1	1	1	1	1
CABREE	1	1	2	2	1	1
CARIBOU	1	1	1	1.5	1	1
CERESA	1	1	1	1.5	1	1
COLANA	1	1	1	1	1	1
CORUS	2	2	1	1	1	1
DAKOTA	1	1	1	1	1	1
ENZO	1	1	1	1	1	1
GALLANT	1	1	1	1	1	1
GEISHA	1	1	1	1	1	1
GENEVA	1	1	1	1	1	1
IBIS	1	1	1	1	1	1
JAGUAR	1	1	1	1	1	1
KIROS	1	1	1	1	1	1
LORIOT	1	1	2	3	1	1
MERIDIAN	1	1	1	1	1	1
MISTY	1	1	1	1	1	1
NALESA	1	1	1	1	1	1
NOVELLA	1	1	1	1	1	1
OASIS	1	1	1	1	1	1

	Sencorex 150g/ha (N)	Sencorex 300g/ha (2N)	Aclonifen + Basagran 0.6+0.6l/ha (N)	Aclonifen + Basagran 1.2+1.2l/ha (2N)	Crystal 2.0l/ha (N)	Crystal 4.0l/ha (2N)
PACHA	1	1	1	1	1	1
PASO	1	1	1	1	1	1
PL 65	1	1	2	2	1	1
PREMIO	1	1	2	1.5	1	1
RANGER	1	1	1	1	1	1
REVEILLE	1	1	2	2	1	1
SAMISH	1	1	1	1	1	1
SERGE	1	1	1	1	1	1
SIGRA	1	1	1	1	1	1
SNAKE	1	1	1	1	1	1
STARLIGHT	1	1	1	1	1	1
SUPERANA	1	1	1	1	1	1
TEEPEE	1	1	1	1	1	1
TENDRILA	1	1	1	1	1	1
TRISTAR	1	1	1	1	1	1
TWINKLE	1	1	2	2	1	1
URBANA	1	1	1	1	1	1
WAVEREX	1	1	1	1	1	1
WINNER	1	1	1	1	1	1
ZAMIRA	1	1	2.5	3.5	1	1
ZELDA	1	1	1	1	1	1
ZODIAC	1	1	1	1	1	1

1 = Highly tolerant
2 = Tolerant
3 = Slightly sensitive
4 = Moderately sensitive
5 = Highly sensitive

Assessment 20th June 2005.
Post-emergence applications.

Combining peas	Sencorex 150g/ha (N)	Sencorex 300g/ha (2N)	Aclonifen + Basagran 0.6+0.6l/ha (N)	Aclonifen + Basagran 1.2+1.2l/ha (2N)	Crystal 2.0l/ha (N)	Crystal 4.0l/ha (2N)
ALEZAN	1	1	1	1	1	1
BEETLE	1	1	1	1	1	1
BILBO	1	1	1	1	1	1
BUNTING	1	*	1	1	1	1
CONCORDE	1	2	2	2	1	1
COOPER	2	2	1	2	1	1
ENIGMA	1	1	1	1	1	1
GOBLIN	1	1	1	1	1	1
HAWAII	1	1	1	1	1	1
KABUKI	1	1	1	*	1	1
KAHUNA	1	2	1	1	1	1
LD9360	1	1	1	2	1	1
MARO	1	1	1	2	1	1
MINERVA	1	1	1	1	1	1
NITOUCHE	1	2	1	1	1	1
ORKA	1	1	1	1	1	1
PRINCESS	1	1	1	1	1	1
ROCKET	2	3	2	3	1	1
ROSE	1	1	1	2	1	1
SAMSON	1	1	1	1	1	1
SIOUX	2	2	1	2	1	1
VEDETTE	1	1	2	2	1	1
VEDETTE	1	1	2.5	3	1	1
VENTURE	1	1	1	1	1	1
WOODY	1	1	2	1	1	1

1 = Highly tolerant
2 = Tolerant
3 = Slightly sensitive
4 = Moderately sensitive
5 = Highly sensitive

Conclusions

The HDC (1) pair of trials were investigating pre-emergence materials and combinations which were identified in the 2004 as having some potential for use post 2007.

The trial at Twenty developed a varied weed population but numbers of most species were low and significant control was only achieved of volunteer oilseed rape. Reflex T (fomesafen + terbuthylazine), Aclonifen and Stomp (pendimethalin) + aclonifen significantly controlled this weed. Stomp alone at 2.0 l/ha did not control volunteer rape adequately. Pale persicaria (POLLA) and charlock (SINAR) were later controlled significantly, POLLA by all except Stomp + Centium (clomazone) and SINAR by Reflex T and treatments containing aclonifen. There was little phytotoxicity with these treatments although the aclonifen treatments at Leadenhall Farm did cause some chlorosis which was quickly outgrown. Leadenhall Farm was a slightly lighter soil type and the variety grown was the petits pois variety Scirocco. These types can be more sensitive. The best general weed control was initially from aclonifen but eventually all treatments gave unacceptable levels of control (i.e. scores of <7). The Leadenhall site did not develop a weed population but was harvested. No treatment had a significant effect upon TR or yield.

Aclonifen and its mixes performed as well, if not better than the standard Reflex T and could provide options once this material is lost. Rate adjustments may be necessary when considering use on lighter soils especially with aclonifen alone but overall, other than some slight sensitivity shown by vining pea varieties Bikini and Zelda to 2N rates of aclonifen, all varieties tolerated these pre-emergence treatments well.

HDC (2) trials at Holland Fen and Swineshead Bridge examined the usefulness of some new pre-emergence materials and followed up last years promising post-emergence material work. An approach adopted in Sweden of using just a post-emergence application of reduced rate aclonifen + Basagran (bentazone) was also examined.

Reflex T and CONF pre-emergence caused no phytotoxicity at either site. Neither did any of the post-emergence treatments. Generally these applications were crop safe across the vining and combining pea varieties tested with just Zamira, Zelda, Rocket and Vedette showing some slight sensitivity to Aclonifen + Basagran and Sencorex applied post-emergence. Herold (diflufenican + flufenacet), Nikeyl (aclonifen + flurtamone) and Bacara (diflufenican + fluratmone) all caused levels of bleaching which appeared more pronounced in the vining compared to the combining peas. Both diflufenican and flurtamone affect carotenoid biosynthesis and so bleaching is a characteristic damage symptom. Crop effects did diminish with time. This was noticeably quicker following Nikeyl applications. Pre-emergence materials worked well at Holland Fen all better than Reflex T, unfortunately Herold, Bacara and to a lesser extent Nickyl caused the crop effects mentioned. Post-emergence applications also performed better than Reflex T. Swineshead Bridge treatments were not as effective but CONF performed as well as Reflex T and notably Nikeyl gave acceptable levels of control over a long period. Good levels of control were achieved and maintained with the post-emergence aclonifen + Basagran spray which gave 99% control of a high redshank population at Swineshead Bridge. Generally significant control of any particular species was better or at least as good as Reflex T with any of the candidate materials except post-emergence Crystal (pendimethalin + flufenacet) applications.

Harvest data from Holland Fen indicated that pre-emergence CONF, Herold and Nikeyl significantly increased yield as did the post-emergence applications of Sencorex and aclonifen + Basagran. These two post-emergence treatments also significantly increased TR values. This was also seen at Swineshead Bridge but here no treatment had a significant affect on yield.

This year's work has supported last year's finding and highlighted other possible pre and post-emergence treatments which could be useful after 2007. Since last years work two herbicides products have become available in vining peas, Skirmish (isoxaben + terbuthylazine) and Blois (trifluralin + linuron). Both are pre-emergence products with Skirmish having the added flexibility

of an early post-emergence timing alone or in mixture with Basagran. Pre-emergence aclonifen alone and reduced rates in mixtures have been shown again to be effective and comparable with Reflex T. Pre-emergence CONF treatments were crop safe and performed generally better than Reflex T. Nikeyl caused some initial phytotoxicity problems but these were quickly outgrown and the product showed good persistence.
Post –emergence Sencorex at 150g/ha and Crystal were again shown to be crop safe but both would need to be preceded by a pre-emergence material to achieve acceptable weed control levels. Reduced rate post-emergence aclonifen + Basagran was tolerated well by most varieties and gave excellent weed control up to harvest. As mentioned, this is an approach used in Sweden for weed control in vining peas where no pre-emergence applications are made. There are adjustments made to the rates of aclonifen and Basagran depending upon the weed spectrum present and the physical size of the crop rather than a particular growth stage. This initial work looks very promising. It suggests that further trials to explore rate manipulation options and to refine the timing of applications could reduce the requirement of vining peas in the UK to one herbicide application containing the minimum amount of active ingredient to do an effective job. This obviously has environmental benefits. However, as yet aclonifen has not achieved Annex I status in the EU pesticide review. Although it is available in numerous other countries, any plans to introduce aclonifen products into the UK will not be pursued until it's inclusion on the Annex I list and some guarantee of longevity is in place.