Country **Brazil**
Organisation **Cheminova**
Year **2002**
Study Director **Mauro Alberton**
Trials design **Randomized block**
Replication **5**
Number sprays **1**
Location of trial: **Buritis, MG.**
Variety: **BRS PÉTALA**
Infection level: **20% - see below**
Spray timings: **16/03/03 - R5.2 (20 % rust infection) and 02/04/03, R5.5**
Trial reference number: **BR-SOY–F-02-02 -MG**
Assessments: **23/04/2003 to 03/05/2003**

Product description in trials protocol	***Treatment***	***Rate g ai/ha***	***% Rust - whole plant score***	***% Rust - whole plant score***	***% defoliation***	***1000 seed weight in g***	***Yield in kg/ha***
			25-Mar	*8-Apr*			
Untreated	Untreated		**27.2a**	95.0a	82 a	113.4 g	1,200 d
Impact	**Flutriafol**	**37.5**	**8.4c**	**46.0a**	**14 d**	**175.8 c**	**2,228 a**
Impact	**Flutriafol**	**50**	**8.4c**	**41.0e**	**13 d**	**176.0 c**	**2,292 a**
Impact	**Flutriafol**	**62.5**	**7.8cd**	**37.0ef**	**11 d**	**179.7 b**	**2,246 a**
Impact	**Flutriafol**	**75**	**8.0cd**	**35.0fg**	**11 d**	**180.0 ab**	**2,355 a**
Impact	**Flutriafol**	**100**	**7.0d**	**32.0g**	**10 d**	**180.7 a**	**2,334 a**
Priori/Nimbus	Azoxystrobin + Mineral Oil	50	11.0b	69.0c	38 c	149.5 d	1,857 b
Score	Difenoconazole	50	10.2b	80.0b	58 b	127.0 f	1,348 cd
Palisade/Attach	Fluquinconazole + Mineral Oil	62.5 + 187.5	10.2b	78.0b	54 b	129.5 e	1,555 c

Means followed by a different letter in the same column differ at P=0.05 using the Duncan Multiple Range test

Comments: Flutriafol at all rates gave significantly superior control of rust compared to azoxystrobin, difenoconazole and fluquinconazole. There was a shallow positive rate response with flutriafol - highest levels of control were seen with flutriafol at 100 g ai/ha. Defoliation was much reduced - at the time of the assessment only 10-14% defoliation was seen in all the flutriafol plots compared with 38 to 82% in the remaining treatments. Disease control was reflected in higher thousand grain weights and yields - these were significantly superior in the flutriafol plots at all rates. Yields in all the flutriafol treatments were at least 1 t/ha greater than in the untreated plots and nearly 0.5 t/ha greater than with the best comparison fungicide (azoxystrobin).

Country **Brazil**
Organisation **Cheminova**
Year **2002**
Study Director **Mauro Alberton**
Trials design **Randomized block**
Replication **5**
Number sprays **1**
Location of trial: **Buritis, MG.**
Variety: **BRS PÉTALA**
Infection level: **20% - see below**
Spray timings: **16/03/03 - R5.2 (20 % rust infection) and 02/04/03, R5.5**
Trial reference number: **BR-SOY–F-03-02 MG**
Assessments: **23/04/2003 to 03/05/2003**

Product description in trials protocol	***Treatment***	***Rate g ai/ha***	***% Rust - whole plant score 25-Mar***	***% Rust - whole plant score 8-Apr***	***% defoliation***	***1000 seed weight in g***	***Yield in kg/ha***
Untreated		0	26.6 a	95.0a	77 a	107.6 f	1062 c
Impact	**Flutriafol**	**75**	**8.2 b**	**14.4 d**	**10 c**	**181.9 d**	**2515 a**
Impact/Derosal	**Flutriafol/carbendazim**	**62.5 + 150**	**7.4 b**	**23.4 c**	**10 c**	**183.8 c**	**2660 a**
Impact/Support	**Flutriafol/thiophanate methyl**	**62.5 + 250**	**8.4 b**	**16.4 d**	**10 c**	**187.3 b**	**2676 a**
Impact/Prior/Nimbus	**Flutriafol/azoxystrobin/mineral oil**	**50 + 25**	**7.4 b**	**22.4 c**	**10 c**	**189.4 a**	**2611 a**
Opera	Pyraclostrobin/epoxiconazole	66.5 + 25	8.4 b	62.0 b	17 b	160.0 e	2260 b

Means followed by a different letter in the same column differ at P=0.05 using the Duncan Multiple Range test

Comments: Flutriafol straight and in mixture gave significantly superior control of rust at the later assessment timing than pyraclostrobin/epoxiconazole. This was also reflected in significantly less defoliation compared to the comparative mixture. Thousand seed weights and final yield were significantly superior to the comparison and the untreated control. Yield increases from rust control were around 1.5 t/ha or above with the flutriafol treatments.

Country **Brazil**
Organisation **Cheminova**
Year **2002**
Study Director **Mauro Alberton**
Trials design **Randomized block**
Replication **5**
Number sprays **1**
Location of trial: **Jaborandi, BA**
Variety: **BRS Sambaíba**
Infection level: **30% - see below**
Spray timings: **15/03/2003 - stage R5.3 , 30% foliar rust**
Trial reference number: **BR-SOY-F-02-02 -BAHIA**
Assessments: **16/04/2003, 22/04/2003 and 25/04/2003**

Product description in trials protocol	***Treatment***	***Rate g ai/ha***	***% Rust - whole plant score 23-Mar***	***% Rust - whole plant score 31-Mar***	***% Rust - whole plant score 5-Apr***	***% defoliation***	***1000 seed weight in g***	***Yield in kg/ha***
Untreated	Untreated	0	75 a	92 a	94 a	75 a	130.6 j	2328 f
Impact	**Flutriafol**	**37.5**	**61 bc**	**78 bc**	**42 def**	**28 bcd**	**145.0 g**	**2751 bcde**
Impact	**Flutriafol**	**50**	**62 bc**	**73 cd**	**40 efg**	**25 bcd**	**148.4 e**	**2790 bcd**
Impact	**Flutriafol**	**62.5**	**63 bc**	**74 cd**	**35 g**	**22 cd**	**150.8 d**	**2876 bc**
Impact	**Flutriafol**	**75**	**59 bcd**	**72 cd**	**38 fg**	**21 cd**	**152.5 c**	**2955 ab**
Impact	**Flutriafol**	**100**	**56 cd**	**67 de**	**35 g**	**18 d**	**157.3 a**	**2952 ab**
Priori/Nimbus	Azoxystrobin/mineral oil	50 + 0,5%	56 cd	74 cd	60 b	21 cd	147.4 f	2586 de
Folicur	Tebuconazole	100	51 d	60 e	38 fg	17 d	153.5 b	3142 a
Score	Difenoconazole	50	65 b	83 b	62 b	38 b	138.7 i	2562 e
Opus	Epoxiconazole	18.75	57 bcd	73 cd	44 de	26 bcd	147.2 f	2817 bc
Opus	Epoxiconazole	37.5	56 cd	70 d	46 cd	22 cd	147.0 f	2855 bc
Palisade/Attach	Fluquinconazole/mineral oil	62.5+187.5	60 bc	74 cd	51 c	34 bcd	141.4 h	2684 cde

Means followed by a different letter in the same column differ at P=0.05 using the Duncan Multiple Range test

Comments: There were high levels of rust in all treatments due to the high disease level at application. Flutriafol treatments at 62.5 g ai/ha and above were superior in disease control to epoxiconazole, difenoconazole and fluquinconazole and equivalent to tebuconazole. Lowest defoliation was seen with flutriafol at 100 g ai/ha and tebuconazole at 100 g ai/ha.. Flutriafol at 100 g ai/ha gave the highest thousand seed weight. Flutriafol yields at 75 and 100 g ai/ha were statistically superior to azoxystrobin, difenoconazole and fluquiconazole and statistically similar to tebuconazole and both rates of epoxiconazole.

Country **Brazil**
Organisation **Fundação de Ensino Superior de Rio Verde – FESURV**
Year **2002**
Study Director **Luís Henrique Carregal P. da Silva**
Trials design **Randomized block**
Replication **3**
Number sprays **1**
Location of trial: **São João da Aliança, GO**
Variety: **Emgopa-313**
Infection level: **20%**
Spray timings: **One spray on 19/03/2003, R 5.2**
Assessments: **4 April (disease) and 24 April (yield)**

Product description in trials protocol	***Treatment***	***Rate g ai/ha***	***% Rust - whole plant score 4-Apr***	***Yield in kg/ha***
Untreated	Untreated		95 a	1791 d
Impact	**flutriafol**	**50**	**40 b**	**2773 bc**
Impact	**flutriafol**	**62.5**	**36 b**	**3106 a**
Impact	**flutriafol**	**70**	**35 b**	**3047 ab**
Priori	azoxystrobin	50	40 b	2774 bc
Score	difenoconazole	75	42 b	2643 c
Folicur	tebuconazole	100	39 b	2854 abc
Opera	pyraclostrobin/epoxiconazole	66.5/25	38 b	2980 ab

Means followed by a different letter in the same column differ at P=0.05 using the Tukey test

Comment: Treatments were applied when disease was well established so control levels were only moderate with all treatments. Flutriafol at 62.5 g ai/ha gave the highest yield and this was significantly superior to those from azoxystrobin and difenoconazole and numerically superior to the yields from tebuconazole and pyraclostrobin/epoxiconazole. The yield increase over the untreated from a single spray of flutriafol at 62.5 g ai /ha was nearly 1.3 t/ha - this is due to its persistence of effect.

Country **South Africa**
Organisation **KwaZulu-Natal Dept Agric & Environmental Affairs**
Year **2003/2004**
Study Director **Eve du Preez**
Location of trial **Cedara, near Pietermaritzburg**
Trial design **Split plot**
Replication **3**
Number sprays **2 and 3**
Spray timings **82, 103 and 124 days after planting**

Treatment	Product name	Rate g ai/ha	Final disease severity (%)		Yield kg/ha		Number of days until breakdown of fungicide
Flutriafol	**Impact**	**125**	**0.0**	**a**	**4915**	**a**	**35**
Flutriafol/carbendazim	**Early Impact**	**113/180**	**0.0**	**a**	**4881**	**ab**	**34**
Flusilazole/carbendazim	Punch Extra	150/75	5.8	abc	4768	ab	13
BASF strobilurin/triazole mix	details unavailable		9.5	bcd	4693	abc	13
Flusilazole	Capitan	100	7.8	abc	4597	abc	14
Syngenta strobilurin mix	details unavailable		13.3	cde	4556	abc	20
Tebuconazole	Folicur	187.5	2.5	abc	4404	abc	14
Triadimenol	Shavit	125	18.0	def	4386	abc	18
Flusilazole/carbendazim	Punch C	100/50	2.0	abc	4361	abc	15
Difenoconazole	Score	81.25	20.8	ef	4253	abc	14
Triforine	Denarin	285	25.0	f	4204	abc	15
Triadimenol	Bayfidan	125	24.2	f	4099	abc	17
Mancozeb	Dithane M45	1600	40.0	g	3999	bcd	15
Azoxystrobin	Amistar	83.3	50.8	h	3882	cd	15
Untreated			80.0	i	3273	d	

Means followed by a different letter in the same column differ at P=0.05
Data sorted by highest to lowest yields

Comments: Product rates in South Africa are higher than those used in Brazil. Flutriafol formulations gave complete control of rust - this was reflected in the highest yield increases. Flutriafol formulations were extremely persistent in effect, only starting to break down 5 weeks after spraying - other materials broke down in two to three weeks. This property may allow fewer sprays or longer intervals between sprays when managing the disease.

Country **Brazil**
Organisation **Cheminova**
Year **2003**
Study Director **Mauro Alberton**
Trials design **Randomized block**
Replication **4**
Number sprays **1**
Location of trial: **Sao Joao da Alianca - GO**
Variety: **Arara Azul**
Infection level: **15%**
Spray timings: **R5.3, 20/03/03**
Trial reference number: **36.03**

Product description in trials protocol	***Treatment***	***Rate g ai/ha***	***% control 21 DAT***	***% yield increase***
Impact 600	**Flutriafol**	**75**	**70**	**88.1**
Impact+Support 500+500	Flutriafol/thiophanate methyl	62.5/250	63	80.7
Impact+carbendazim 500+300	Flutriafol/carbendazim	62.5/150	62	80.6
Impact+Priori 400+100	Flutriafol/azoxystrobin	50/25	63	73.5
Impact+Folicur 400+300	Flutriafol/tebuconazole	50/60	65	72.9
Opera 500	Epoxiconazole/pyraclostrobin	62.5/250	61	71.8
Impact+Opus 400+100	Flutriafol/epoxiconazole	50/12.5	59	68.1
Impact+Comet 400+266	Flutriafol/pyraclostrobin	50/66.5	62	59.8
Carbendazim 500	Carbendazim	250	54	46.2
Untreated			0	0.0

Data sorted by highest to lowest yield increase
No statistical analysis currently available
Three flutriafol/carbendazim treatments excluded from summary because rates not clear (performance was mid-table)

Comment: Flutriafol gave the highest rust control and yield increase in this trial when used as straight product. A range of mixtures that included flutriafol were superior to non-flutriafol standards. Mixtures are of value in controlling other diseases when these are present in the crop.

Country **Brazil**
Organisation **Cheminova**
Year **2003**
Study Director **Mauro Alberton**
Trials design **Randomized block**
Replication **4**
Number sprays **1**
Location of trial: **Sao Joao da Alianca - GO**
Variety: **Arara Azul**
Infection level: **15%**
Spray timings: **R5.3, 20/03/03**
Trial reference number: **36.03**

Product description in trials protocol	***Treatment***	***Rate g ai/ha***	***% control 21 DAT***	***% yield increase***
Impact 600	**Flutriafol**	**75**	**70**	**88.1**
Impact+Support 500+500	Flutriafol/thiophanate methyl	62.5/250	63	80.7
Impact+carbendazim 500+300	Flutriafol/carbendazim	62.5/150	62	80.6
Impact+Priori 400+100	Flutriafol/azoxystrobin	50/25	63	73.5
Impact+Folicur 400+300	Flutriafol/tebuconazole	50/60	65	72.9
Opera 500	Epoxiconazole/pyraclostrobin	62.5/250	61	71.8
Impact+Opus 400+100	Flutriafol/epoxiconazole	50/12.5	59	68.1
Impact+Comet 400+266	Flutriafol/pyraclostrobin	50/66.5	62	59.8
Carbendazim 500	Carbendazim	250	54	46.2
Untreated			0	0.0

Data sorted by highest to lowest yield increase
No statistical analysis currently available
Three flutriafol/carbendazim treatments excluded from summary because rates not clear (performance was mid-table)

Comment: Flutriafol gave the highest rust control and yield increase in this trial when used as straight product. A range of mixtures that included flutriafol were superior to non-flutriafol standards. Mixtures are of value in controlling other diseases when these are present in the crop.

Country **Brazil**
Organisation **Cheminova**
Year **2003**

Study Director **Mauro Alberton**
Trials design **Randomized block**
Replication **4**
Number sprays **1**
Location of trial: **Sao Joao da Alianca - GO**
Variety: **Engopa 313**
Infection level: **20%**
Spray timings: **R5.3, 19/03/03**
Trial reference number: **34.03**

Product description in trials protocol	***Treatment***	***Rate g ai/ha***	***% control***	***% yield increase***
Impact 800	**Flutriafol**	**100**	**71**	**67**
Impact 500	**Flutriafol**	**62.5**	**67**	**64**
Opera 500	Epoxiconazole/pyraclostrobin	25/66.5	62	58
Folicur 750	Tebuconazole	150	65	48
Folicur500	Tebuconazole	100	62	39
Score150	Difenoconazole	37.5	59	30
Opus500	Epoxiconazole	62.5	62	27
Score 300	Difenoconazole	75	62	24
Opus 300	Epoxiconazole	37.5	60	21
Untreated	Untreated		0	0

Data sorted by highest to lowest yield increase
No statistical analysis currently available

Comment: Two flutriafol treatments gave the highest rust control and yield increase in this trial. These were superior to other triazole standards and a strobilurin/triazole mixture.

Country **Brazil**
Organisation **Cheminova**
Year **2003**
Study Director **Mauro Alberton**
Trials design **Randomized block**
Replication **4**
Number sprays **1**
Location of trial: **Sao Joao da Alianca - GO**
Variety: **Engopa 313**
Infection level: **20%**
Spray timings: **R5.3, 19/03/03**
Trial reference number: **33.03**

Product description in trials protocol	***Treatment***	***Rate g ai/ha***	***% control***	***% yield increase***
Impact 600	**Flutriafol**	**75**	**60**	**69**
Impact+carbendazim 500+300	Flutriafol/carbendazim	62.5/150	52	77
Impact+Support 500+500	Flutriafol/thiophanate methyl	62.5/250	52	73
Impact+Priori 400+100	Flutriafol/azoxystrobin	50/25	51	108
Impact+Folicur 400+300	Flutriafol/tebuconazole	50/60	51	46
Impact+Comet 400+266	Flutriafol/pyraclostrobin	50/66.5	49	58
Ópera 500	Epoxiconazole/pyraclostrobin	62.5/250	49	46
Impact+Opus 400+100	Flutriafol/epoxiconazole	50/12.5	48	42
Carbendazim 500	Carbendazim	250	39	27
Untreated			0	0

Data sorted by highest to lowest rust control
No statistical analysis currently available
Three flutriafol/carbendazim treatments excluded from summary because rates not clear (performance was mid-table)

Comment: Straight flutriafol gave the highest rust control in this trial but the highest yield increases were seen with flutriafol mixtures - because other diseases were present that the mixture partners controlled.

Country **Brazil**
Organisation **Cheminova**
Year **2003**
Study Director **Mauro Alberton**
Trials design **Randomized block**
Replication **4**
Number sprays **1**
Location of trial: **Sao Joao da Alianca - GO**
Variety: **Engopa 313**
Infection level: **20%**
Spray timings: **R5.3, 19/03/03**
Trial reference number: **32.03**

Product description in trials protocol	***Treatment***	***Rate g ai/ha***	***% control***	***% yield increase***
Impact 1000	**Flutriafol**	**125**	**72**	**87**
Impact 700	**Flutriafol**	**87.5**	**65**	**76**
Impact 500	**Flutriafol**	**62.5**	**64**	**73**
Impact 800	**Flutriafol**	**100**	**69**	**70**
Impact 600	**Flutriafol**	**75**	**64**	**69**
Opera 500	Epoxiconazole/pyraclostrobin	25/66.5	62	65
Folicur 500	Tebuconazole	100	61	62
Impact 400	**Flutriafol**	**50**	**61**	**54**
Opus 300	Epoxiconazole	37.5	62	52
Priori 200	Azoxystrobin	50	58	51
Score 300	Difenoconazole	75	60	47
Impact 300	**Flutriafol**	**37.5**	**59**	**46**
Opus 150	Epoxiconazole	18.75	58	43
Score 200	Difenoconazole	75	57	37
Palisade 250	Fluquinconazole	62.5	54	18
Untreated	Untreated		0	0

Data sorted by highest to lowest yield increase
No statistical analysis currently available

Comment: Flutriafol gave the highest rust control and yield increases - there was a good rate response. A rate between 50 and 75 g ai/ha was superior to standards.

Country **Brazil**
Organisation **Cheminova**
Year **2003**
Study Director **Mauro Alberton**
Trials design **Randomized block**
Replication **4**
Number sprays **1**
Location of trial: **Rio Verde**
Variety: **Vitoria**
Infection level: **0% - preventative spray**
Spray timings: **R3, 11/03/03**
Trial reference number: **26.03**

Product description in trials protocol	***Treatment***	***Rate g ai/ha***	***% yield increase***
Impact 1000	**Flutriafol**	**125**	**29.0**
Impact 600	**Flutriafol**	**75**	**26.3**
Impact 800	**Flutriafol**	**100**	**21.1**
Impact 700	**Flutriafol**	**87.5**	**21.1**
Impact 500	**Flutriafol**	**62.5**	**21.1**
Ópera 500	Pyraclostrobin/epoxiconazole	66.5/25	15.8
Impact 400	**Flutriafol**	**50**	**13.2**
Priori 200	Azoxystrobin	50	10.5
Folicur 500	Tebuconazole	100	10.5
Score 300	Difenoconazole	75	10.5
Palisade 250	Fluquinconazole	62.5	10.5
Opus 150	Epoxiconazole	18.75	7.9
Opus 300	Epoxiconazole	37.5	7.9
Impact 300	**Flutriafol**	**37.5**	**5.3**
Score 200	Difenoconazole	50	2.6
Untreated	Untreated		0.0

Data sorted by highest to lowest yield increase
No statistical analysis currently available

Comment: Protectant applications were made. All held back the disease and gave 100% control in early assessments. Later assessments were not done but it is clear that the treatments broke down with flutriafol showing longer persistence. This was then reflected in the higher yields seen with flutriafol compared to other triazoles and other triazole/strobilurin mixtures. A rate of 62.5 g ai/ha flutriafol was superior to other standards.

Country **Brazil**
Organisation **Fundação de Ensino Superior de Rio Verde – FESURV**
Year **2002**
Study Director **Luís Henrique Carregal P. da Silva**
Trials design **Randomized block**
Replication **3**
Number sprays **1**
Location of trial: **São João da Aliança, GO**
Variety: **Arara Azul**
Infection level: **15%**
Spray timings: **One spray on 20/03/2003, R 5.2**
Assessments: **4 April (disease) and 24 April (yield)**

Product description in trials protocol	***Treatment***	***Rate g ai/ha***	***% Rust - whole plant score 4-Apr***	***Yield in kg/ha***
Untreated	Untreated		97.7 c	1661 b
Impact	**flutriafol**	**50**	**38.3 ab**	**2739 a**
Impact	**flutriafol**	**62.5**	**36.7 ab**	**2885 a**
Impact	**flutriafol**	**70**	**35.0 a**	**3015 a**
Priori	azoxystrobin	50	41.3 b	2222 ab
Score	difenoconazole	75	39.7 ab	2630 a
Folicur	tebuconazole	100	39.3 ab	2475 a
Opera	pyraclostrobin/epoxiconazole	66.5/25	37.0 ab	2803 a

Means followed by a different letter in the same column differ at P=0.05 using the Tukey test

Comment: Treatments were applied when disease was established so control levels were moderate with all treatments. Flutriafol at 70 g ai/ha numerically gave the highest yield but this was not significantly superior to other treatments. The limited replication in the experiment reduced its precision. Nevertheless, the yield increase over the untreated with the highest rate of flutriafol was nearly 1.4 t/ha - this is a reflection of the compound's persistence of effect.

Country **Brazil**
Organisation **Reported in 'Cultivar', September 2004**
Year **2003/2004**
Study Directors **Various official organizations**
Number of trials **11**
Location of trials **Londrina, Rondonopolis, Goiania, Luis Eduardo Magalhaes e Sao Desiderio, Uberaba, Balsas, Capao Bonito e Holambra**
Number sprays **1**
Spray timings **One spray at R2/R3**

Treatment	Product name	Rate g ai/ha	% disease at R6 mean of 11 trials
Flutriafol	**Impact**	**62.5**	**11**
Tebuconazole 250	Orius	100	**12**
Azoxystrobin/cyproconazole	Priori Xtra	60/24	16
Trifloxystrobin/cyproconazole	Sphere	56.2/24	17
Tebuconazole 200	Folicur	100	18
Tetraconazole	Domark	50	18
Pyraclostrobin/epoxiconazole	Opera	66.5/25	24
Epoxiconazole	Opus	37.5	29
Myclobutanil	Systhane	100	30
Fluquinconazole	Palisade	62.5	32
Azoxystrobin	Priori	50	34
Difenoconazole	Score	50	39
Propiconazole	Juno	125	44
Trifloxystrobin/propiconazole	Stratego	50/50	44
Untreated			61

Translated from Portuguese. Values read from graphical presentation in journal.
Data sorted by highest to lowest disease control
No stats because values are means of 11 trials

Comment: Flutriafol gave the best control of rust. It was superior to other triazoles and other triazole/strobilurin mixtures.