

Evaluation of the suckeride ‘Super Harvest’ (Butralin + Flumetralin) in tobacco

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Introduction

- Topping induces sucker production
- Suckers grow and feed on the nutrients meant for the leaves
- Suckers must therefore be removed to maximize yield

Suckering methods

- Suckers can be removed by hand or through the use of plant growth regulator chemicals
- Chemical control better than hand suckering but a combination of the two methods provides the best sucker control.

Recommended suckerides in Malawi

- Antak (N-decanol),
- Fair 85 (N-decanol/octanil)
- Tabamex (Butraline) (ARET 2009)

Objective

To evaluate the sucker control efficiency of Super Harvest (Butralin + Flumetralin mixture) and its effects on the yield and quality of burley and flue cured tobacco

Materials & Methods

Treatments

1. Butraline + flumetraline mixture
(contact/localized systemic)
2. Butraline (contact/localized systemic)
3. Antak (contact)
4. Hand desuckered - topped and suckers removed by hand as required
5. Nil desuckering - topped and suckers permitted to grow until removal at harvest

Design:

RCBD with four replications

Plot size:

Gross - 4 ridges x 1.2m x 7.2m

Net - 2 middle ridges

Plant spacing: 0.6m

All other cultural practices as recommended by ARET

Sites and varieties

Burley

Sites : Kandiya and Mwimba
Research Stations

Variety : Mkanachikhosi

Flue cured tobacco

Sites : Mwimba Research Station

Variety : AFH 4

Data

Data collected and reported on

- sucker weight.
- plant height
- Yield, including leaf quality

Sucker control was calculated as the percent reduction in sucker green weight of a treatment compared with the nil desuckering treatment

Analysis

Data analysed with Genstat package

All comparisons made at the 5% level of probability.

Results

Field Observations

Field observations on burley tobacco

- Butraline and Antak deformed the growing point of the suckers,
- The flumetralin + butralin treatment burnt out the whole sucker, leaving a marked dark discolouration of the leaf axil. Subsequent suckers took longer time to come up and the growth of the new suckers was severely inhibited .

NIL DESUCKERING



Butraline + flumetraline mixture



Results

Sucker Control

Fig 1 Effect of different sucker control methods on sucker control in burley at Kandiya, 2009/10

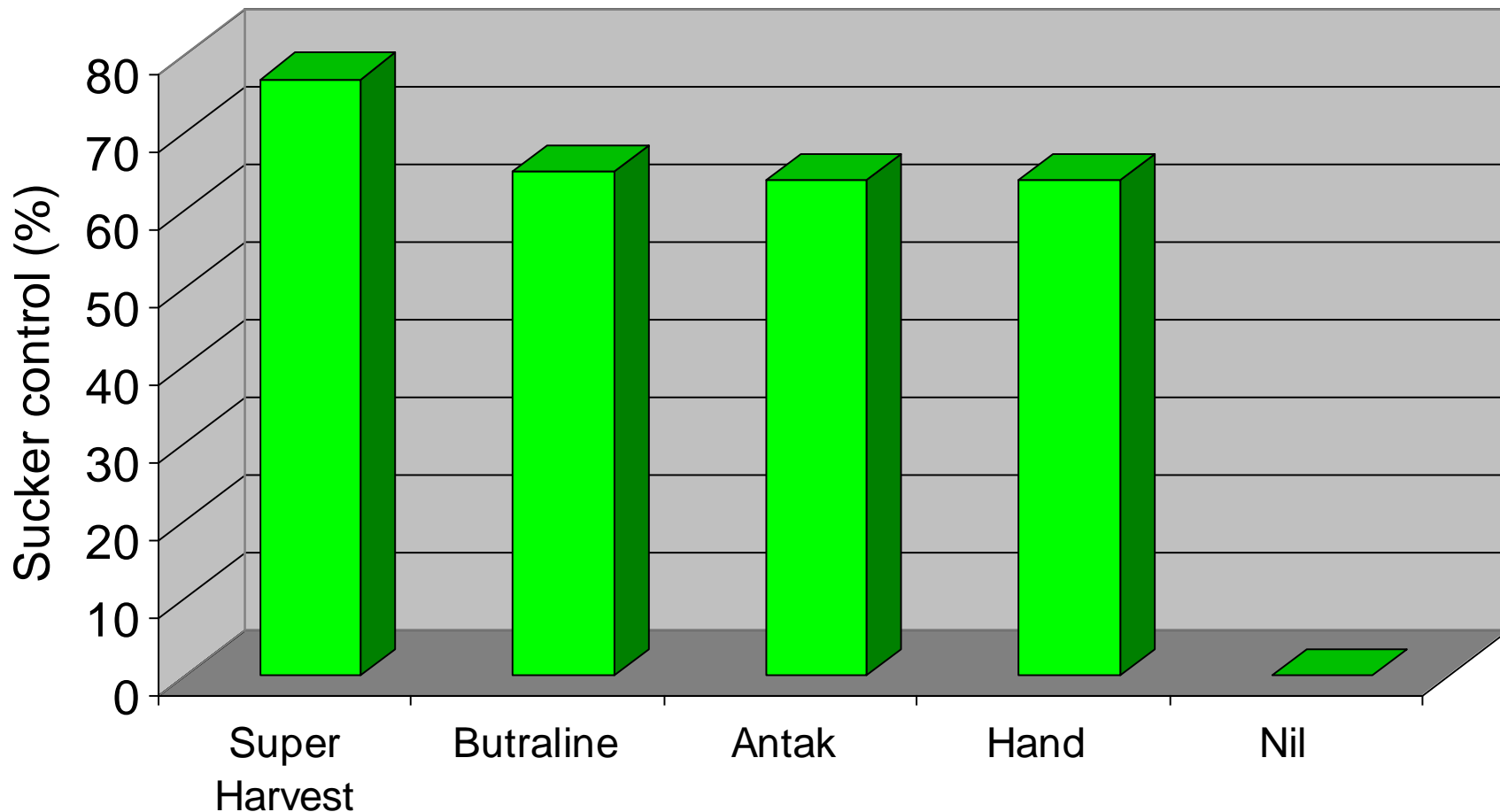


Fig 2 Effect of different sucker control methods on sucker control in burley at Mwimba, 2009/10

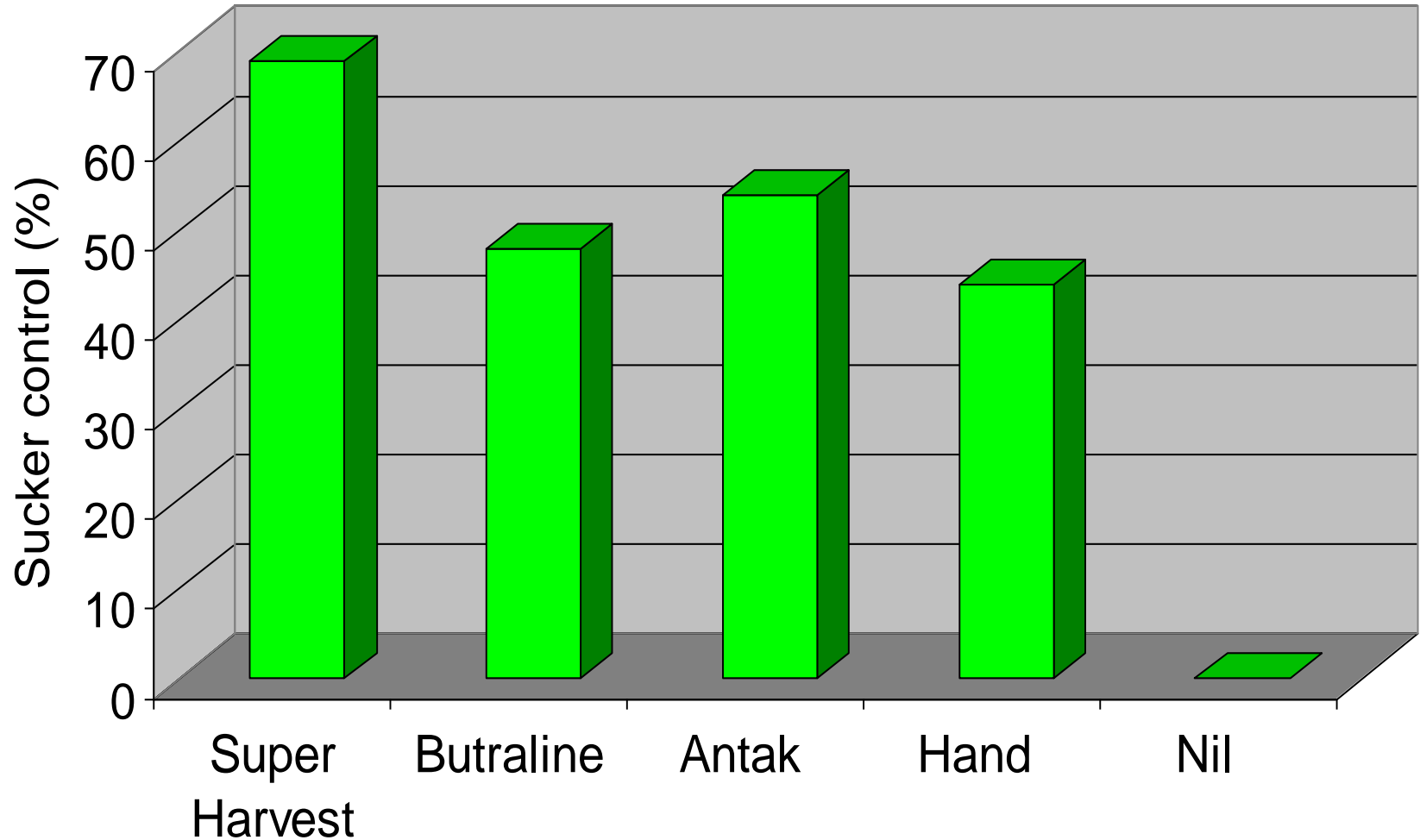


Fig 3 Effect of different sucker control methods on sucker control in flue tobacco at Mwimba, 2009/10

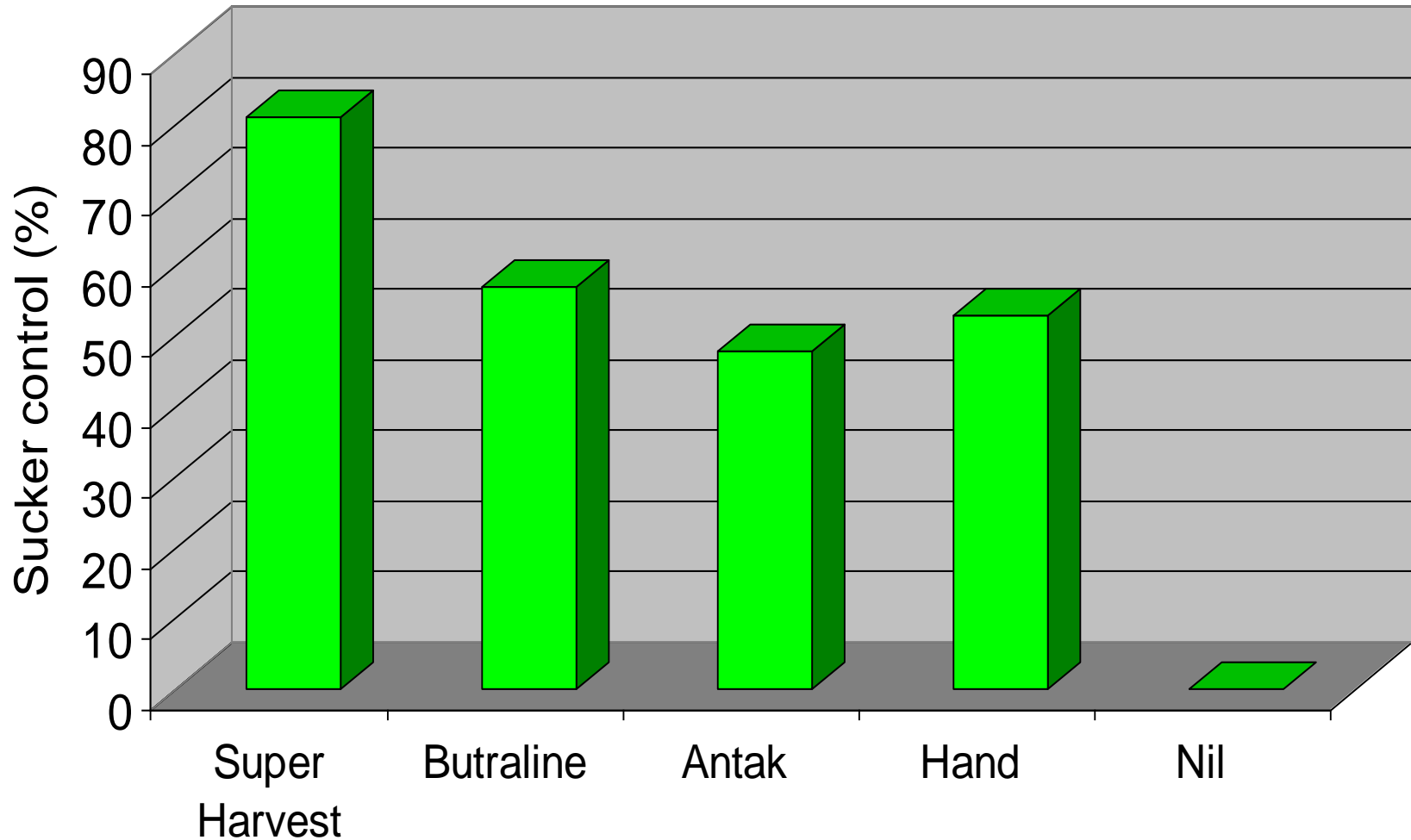


Table 1 Effect of different sucker control methods on plant height, yield and colour distribution in burley at Kandiya, 2009/10

Treatment	Plant height (cm)	Yield (kg/ha)	Leaf colour (%)		
			Buff	Tan	Red
Butraline+ flumetraline	147	2021	28	35	15
Butraline	151	2285	24	45	16
Antak	162	2270	25	49	14
Hand	160	2250	32	36	11
Nil	151	2060	30	47	2
Mean	154.2	2237	27.7	42.6	11.8
SE \pm	8.45	348.8	7.94	8.04	6.81
CV%	4	22	40	27	81

Table 2 Effect of different sucker control methods on yield and colour distribution in burley at Mwimba, 2009/10

Treatment	Yield (kg/ha)	Leaf colour (%)		
		Buff	Tan	Red
Butraline+ flumetraline	3601	42	32	3
Butraline	2569	56	21	2
Antak	2865	48	31	0
Hand	2250	52	22	4
Nil	2005	48	19	0
Mean	2658	49.1	24.7	1.8
SE \pm	507.2*	16.25	11.2	2.08
CV%	27	47	64	64

Table 3 Effect of different sucker control methods on yield and colour distribution in flue cured tobacco at Mwimba, 2009/10

Treatment	Yield (kg/ha)	Leaf colour (%)		
		Mahogany	Lemon	Orange
Butraline+ flumetraline	2840	16	28	34
Butraline	2236	11	37	40
Antak	2131	14	27	46
Hand	2183	6	34	36
Nil	1694	5	40	30
Mean	2145	10.5	33.2	37.2
SE \pm	198.8*	3.94*	5.03	8.97
CV%	13	53	20	34

Table 4 Effect of different sucker control methods on leaf quality in flue cured tobacco at Mwimba, 2009/10

Treatment	Leaf quality				
	First	Second	Third	Fourth	Fifth
Butraline+ flumetraline	42	27	21	6	3
Butraline	39	41	10	6	3
Antak (Fair 85)	44	32	16	7	1
Hand desuckering	39	30	21	7	2
Nil desuckering	31	34	27	7	1
Mean	39.0	32.4	19.2	6.8	2.0
SE _±	8.44	7.38	4.06*	4.39	2.09
CV%	31	32	30	92	99

Summary

- Best sucker control was from the treatment with Butraline + flumetraline in both tobacco types.
- Yield and quality was positively related to the degree of sucker control and the highest yield was obtained from the best sucker control treatment with Butraline + flumetraline.

Summary

- Butraline + flumetraline resulted in the highest proportion of mahogany leaf colour whilst leaving suckers uncontrolled produced the highest proportion of the third grade leaf in flue cured tobacco.

I Thank You For Your Attention