

## Prepare for a dry summer!

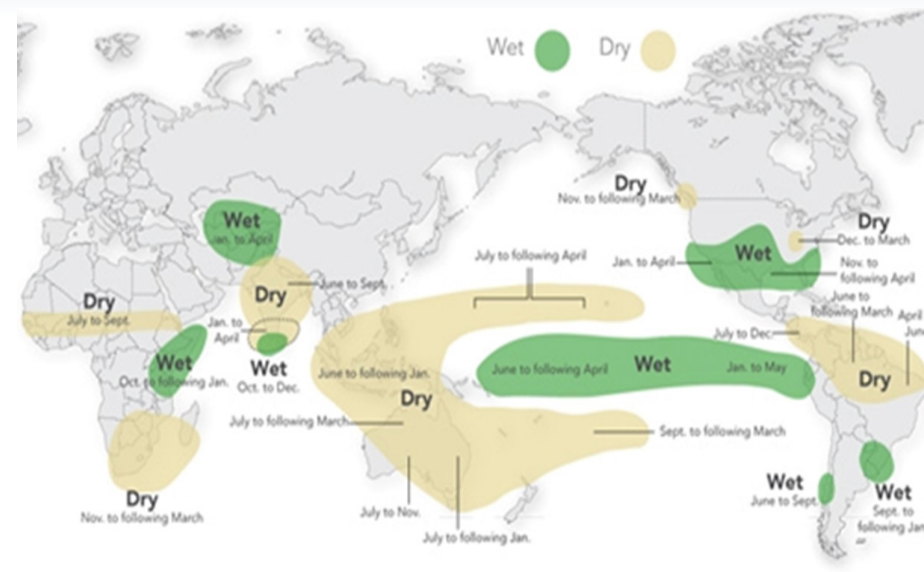
*We have enjoyed relatively good rainfall recently, with the El Niño-Southern Oscillation (ENSO) having been in a negative (wetter) (La Niña) state for the past three years. Although dams are currently full, ENSO has recently weakened into a neutral state and the World Meteorological Organisation predicts an 80% chance of a full El Niño developing by September 2023. Below average rainfall and increased temperatures can be expected from November 2023 onwards. At this stage there is no indication of the strength or duration of El Niño.*

### Limiting the impact of eldana and YSA

Under rainfed conditions eldana infestations are always more intense during periods of below average rainfall. In the irrigated areas water deficits are more frequent when irrigation restrictions are imposed. It must be noted that eldana responds to other forms of stress including waterlogging and salinity/sodicity.

Yellow sugarcane aphid (YSA) also responds to plant stress events.

In the near term there are some measures that growers can implement now, to limit the impact of eldana and YSA during the coming below average rainfall cycle.



▲ Typical rainfall patterns during El Niño events.



#### Take measures to reduce plant stress.

- Consider ripping to increase root aeration and improve rooting depth. Ripping of ratoon fields should be restricted to two weeks or less following harvest; ripping later than this may damage new roots.
- Tops should never be re-burnt and should always be scattered. Eldana does not lay eggs on green leaf material and larvae very rarely bore into the tops. A good cover of cane tops can have as much as 70% of the beneficial effects of a full residue blanket.
- On sandy soils, apply a nematicide to ensure a larger root system capable of accessing soil water at depth.
- Apply effective irrigation management through irrigation scheduling. Avoid over-irrigation and waterlogged conditions. Take measures to prevent or alleviate salinity and sodicity.



#### Chemical ripening and eldana

- Remember that applying chemical ripeners imposes a form of plant stress. Cane already infested with eldana should never be chemically ripened.
- When the risk of carry-over is unknown, late season cane quality maintenance during September and October can be carried out using MODDUS® (or other trade names). Since this chemical does not affect the stalk growing point growth will resume as its effects wear off. As soon as it is known that a treated field will be carry-over, irrigation must be immediately resumed, and an insecticide can also be applied coinciding with part of the Spring moth abundance peak.



### **Eldana and YSA infestations increase when excessive nitrogen fertilisation and restricted water supply combine.**

Excessive N applications under conditions of water stress can greatly increase survival and reduce the generation time of these pests. This is exacerbated by sub-optimal potassium (K) and phosphorous (P) nutrition. Potassium plays an important role in plant resistance to stress.

- Limit the amount of N available to eldana and YSA by following FAS recommendations regarding a realistic yield target. Adjust your yield target downwards if water restrictions appear likely.
- Consider splitting N applications. Reducing the N content of the canopy in young cane will reduce suitability for YSA without affecting plant growth. Adjustments to the second N application can be made if water restrictions become less likely.
- Apply recommended rates of K and P, despite applying reduced N levels.
- Apply BANDITO® (registered for nematode, YSA and thrips control) on sandy soils and to fields with a history of YSA infestation.



### **Insecticides for eldana control.**

Recent trials have shown that a single application of an insecticide during early stalk elongation is effective against eldana, particularly if there was an infestation in the previous crop, since a proportion of larvae remain within the stool after harvest.

If more than 10 eldana larvae per 100 stalks ( $>10e/100$ ) were present at harvest, then a substantial larval population will remain in the stubble and stool below ground after harvest. Moths emerging from these are a source of reinfestation and infestation of adjoining fields. The insecticide EMMA® is registered for application to fresh stubble.

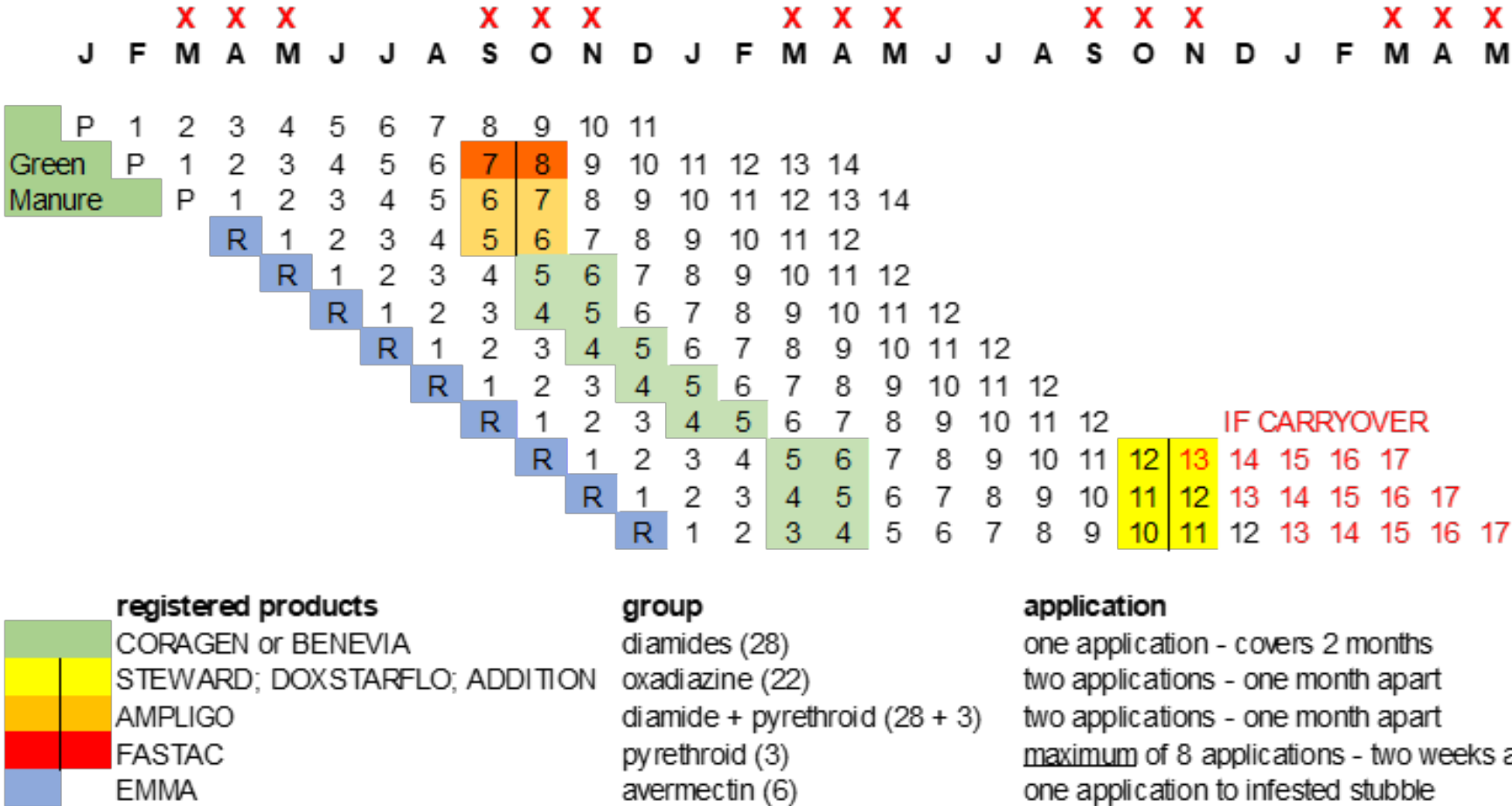
With the likelihood that there will be water restrictions during 2024/2025, which may be compounded in effect by load-shedding, a pre-emptive insecticide application at early stalk elongation is advisable for fields with an eldana history or high e/100 at the previous harvest. Where possible, this should overlap with peaks in eldana moth abundance which occur in September–October–November and March–April–May. Otherwise, the need for insecticides should be determined by scouting and subsequent moth peaks should also be targeted especially if there is a risk of carry-over.

### **Timing of an insecticide application targeting early stalk elongation (adjusted considering eldana moth peaks) for 12-month cycles.**

Ratooning Month	Suggested timing of an early insecticide application based on ratooning in specific months
April	Late August
May	Late September
June	Early October
July	Early November
August	Late November to Early December
September	Early / Mid-January
October	Mid-February
November	Late-February
Early/Mid December	Late February to Early March



**X Periods of Increased moth abundance**



▲ Examples of IRAC compliant eldana insecticide programmes for 12-month crops. Other spray programmes are possible. Expert advice provided by SASRI specialists or Extension should always be followed regarding the need for spraying, spray programmes, spray windows and timing.

# Registered products for Eldana control



Registered product(s)	Active ingredient(s): IRAC code	Application guidelines	For control of:	Notes
<b>EMMA SG</b>	Emamectin benzoate: 6	<b>Ratoon cane:</b>  Apply once only, 1000 l water / ha with added 1.5% Silhouette. Spray within 3 days after cutting cane. The cut ends of the stubble must not be dried out. The spray swath must be directed onto the row. The spray swath must be free of excessive crop residue to ensure that the spray mixture comes into direct contact with the cane stool and the cut stumps. Thorough wetting is essential.	Eldana	Applied to control larvae remaining in the stubble and below-ground in the stool after harvest. Reduces "dead-hearts" in ratooning cane and limits reinfestation, and infestation of adjoining fields.  Spread tops after spraying.
<b>FASTAC EC &amp; SC</b>	α-Cypermethrin: 3	<b>Ground and aerial application:</b>  Spray at <u>2-weekly intervals up to 8 applications</u> . Although the label allows for up to 8 consecutive applications, IRAC guidelines indicate no more than four applications at 2-weekly intervals covering a 60-day window.	Eldana	Pyrethroids are damaging to natural enemies. Best used during the cooler months and/or in young cane before natural enemies have had time to build-up numbers. Four sprays at 2-weekly intervals are as effective as a single spray of CORAGEN.
<b>STEWART EC DOXSTAR-FLO SC ADDITION SC</b>	Indoxacarb: 22	<b>Ground and aerial application:</b>  Make <u>two consecutive applications</u> at a monthly interval period. Alternate with a product with a different mode of action for a subsequent 60-day window.	Eldana	Two sprays at a 1-month interval are as effective as a single spray of CORAGEN
<b>CORAGEN SC</b>	Chlorantraniliprole: 28	<b>Ground and aerial application:</b> <u>One application</u> covers a 60-day spray window (equivalent to the average duration of one eldana lifecycle). Although the label allows for two consecutive applications 60-days apart, IRAC guidelines recommend that consecutive spray windows (of 60-days) should not be treated with the same mode of action.	Eldana	Least damaging of all options against natural enemies.
<b>AMPLIGO ESC</b>	I-Cyhalothrin & Chlorantraniliprole: 3+28	<b>Ground and aerial application:</b>  Make <u>two consecutive applications</u> at a monthly interval period. Alternate with a product with a different mode of action for a subsequent 60-day window.	Eldana & YSA	I-cyhalothrin has a short-term knock-down effect on YSA. Chlorantraniliprole is not effective against YSA. Both actives are effective against eldana.  Two sprays at a 1-month interval are as effective as a single spray of CORAGEN.  The pyrethroid component may be damaging to natural enemies.
<b>BENEVIA OD</b>	Cyantraniliprole: 28	<b>Ground application:</b>  Direct the spray towards the lower parts of the cane where the pest is present. The use of Trend 90 or H & R Crop Oil can enhance control.	Eldana & YSA	If applied for YSA and/or eldana control, may also control thrips.

ESC – Encapsulated Suspension Concentrate; EC – Emulsifiable Concentrate; OD – Oil Dispersion; SC – Suspension Concentrate; SG – Soluble Granular.

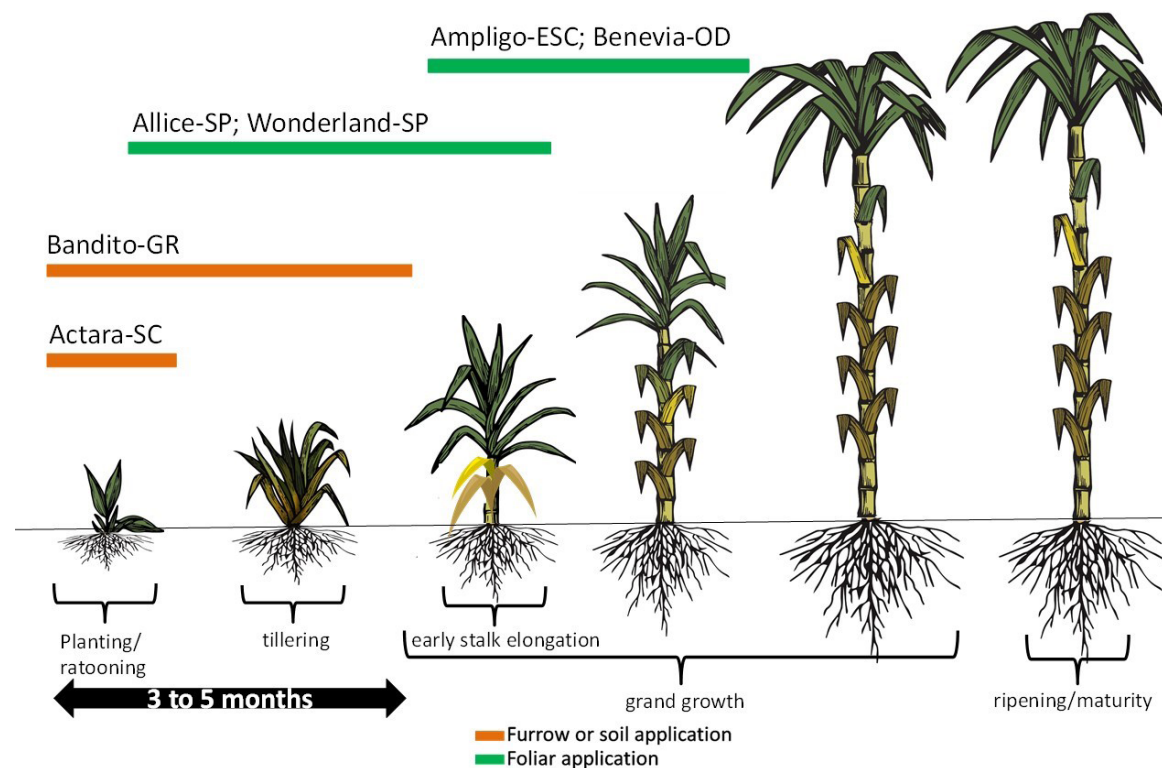
# Registered products for YSA control



Registered product(s)	Active ingredient(s): IRAC code	Application	For control of:	Notes
<b>ACTARA SC</b>	Thiamethoxam: 4A	<p><b>Plant cane furrow:</b></p> <p>Apply as a single in-furrow band application (30 to 50 cm wide), at planting, after placement of the seed cane, as the last operation before closing. Apply once only.</p> <p><b>Ratoon cane:</b></p> <p>Apply between 7 and 30 days after harvesting. For bee safety, ensure that stubble is dry before applying the product. Apply as a broad band application over the cane rows. Apply once only.</p>	YSA	<p>If applied for YSA control will also control thrips.</p> <p>Likely to have a plant physiological stress alleviating effect.</p> <p>4 – 8 weeks of control.</p>
<b>BANDITO GR</b>	Oxamyl & Imidacloprid: 1A+4A	<p><b>Plant cane furrow:</b></p> <p>Apply granules with the use of a mechanical granular applicator only after the planting sets have been placed in the furrow. Cover setts and granules with soil.</p> <p><b>Ratoon cane soil:</b></p> <p>Apply to moist soils in the rainy season. Band apply on the soil surface on both sides of, or over, the plant rows.</p>	Thrips, YSA & nematodes	<p>Likely to have a plant physiological stress alleviating effect.</p> <p>8 – 12 weeks of control.</p>
<b>ALLICE SP</b>	Acetamiprid: 4A	<p><b>Foliar ground application:</b></p> <p>Apply as soon as pest is noticed. Use a flat fan nozzle and direct the spray to the centre of the developing tillers for thrips or the lower leaves for YSA.</p> <p><b>Aerial application (thrips only):</b></p>	Thrips & YSA	<p>Of the neonicotinoids, acetamiprid has higher activity against lepidoptera. If applied for thrips and/or YSA control, may also control eldana.</p> <p>2 – 4 weeks of control.</p>
<b>WONDERLAND SP</b>	Acetamiprid: 4A	<p><b>Foliar ground application:</b></p> <p>Apply as soon as pest is noticed. Use a flat fan nozzle and the spray must be directed to the lower leaves.</p>	YSA	<p>If applied for YSA control, will control thrips, and may also control eldana.</p> <p>2 – 4 weeks of control.</p>
<b>AMPLIGO ESC</b>	I-cyhalothrin & Chlorantraniliprole: 3+28	<p><b>Foliar ground application:</b></p> <p>Apply at the first sign of infestation. Direct the spray towards the lower parts of the cane where the pest is present. The action for aphids is contact only.</p>	YSA & eldana	<p>I-cyhalothrin has a short-term knock-down effect on YSA. Chlorantraniliprole is not effective against YSA. Both actives are effective against eldana.</p> <p>The pyrethroid component may be damaging to natural enemies.</p>
<b>BENEVIA OD</b>	Cyantraniliprole: 28	<p><b>Foliar ground application:</b></p> <p>Apply as soon as the pest is first noticed. Direct the spray towards the lower leaves of the cane where the pest is present. The use of Trend 90 or H &amp; R Crop Oil can enhance control.</p>	YSA & eldana	<p>If applied for YSA and/or eldana control, may also control thrips.</p> <p>8 weeks of control.</p>

ESC – Encapsulated Suspension Concentrate; GR – Granular; OD – Oil Dispersion; SC – Suspension Concentrate; SP – Soluble Powder.



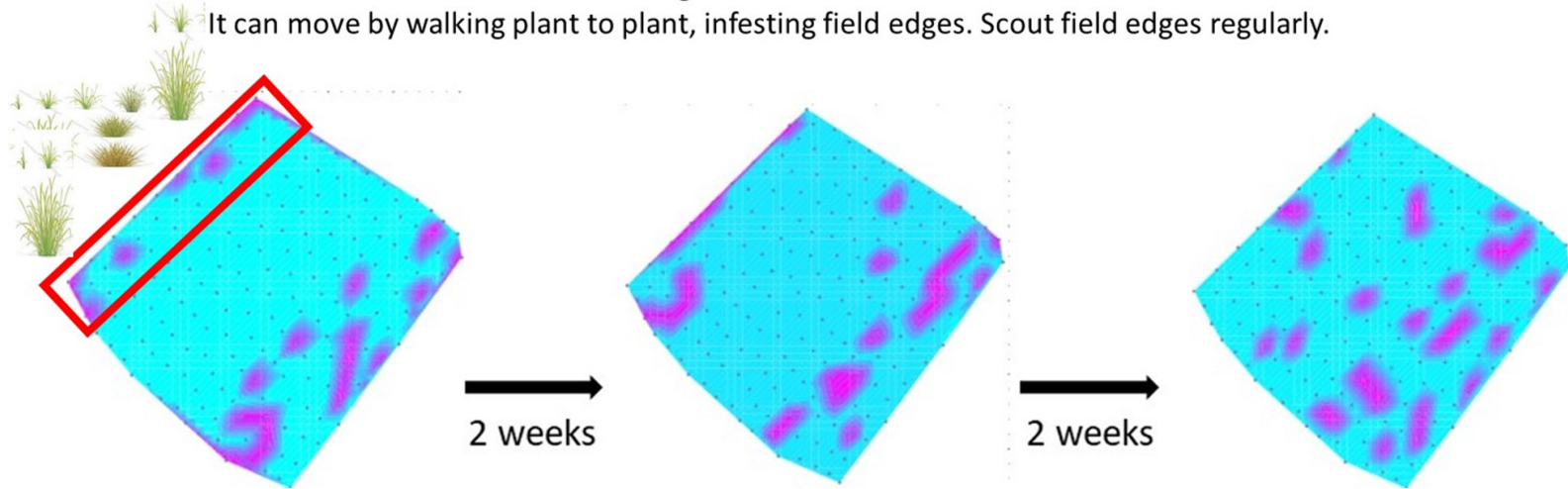


▲ Suggested timing of use for registered products for YSA control, considering instructions given in their respective product labels and conservation of natural enemies.

- ACTARA® (thiamethoxam) and BANDITO® (oxamyl plus imidacloprid) are pre-emptive options for YSA control both of which are applied to the soil/stubble.
- Delay spraying of ACTARA® for 7 days until the stubble has dried out to minimise any detrimental effect on bees but apply within 30-days of harvest.
- Thiamethoxam and imidacloprid are known to have plant physiological effects that help alleviate various forms of stress. BANDITO® is also a registered nematicide and is likely to be beneficial on sandy soils
- However, the active ingredients of the above, oxamyl, imidacloprid and thiamethoxam, are more damaging to natural enemies than acetamiprid (ALLICE®; WONDERLAND®) and cyantraniliprole (BENEVIA®).
- Pre-emptive use of ACTARA® and BANDITO® mitigates any negative effect of their active ingredients on natural enemies. Actives are taken up into the plant by the roots, move to the leaves but are not present on the leaf surfaces. In addition, natural enemies are not likely to be as abundant during early crop growth compared to later.
- Foliar application against YSA is restricted to the use of ALLICE®, WONDERLAND®, AMPLIGO® and BENEVIA®. (NB: the pyrethroid component of AMPLIGO® is responsible for YSA control, it is however damaging to natural enemies).
- AMPLIGO® and BENEVIA® are also registered for eldana control. If used for YSA control when stalk elongation has already commenced, protection against eldana infestation will be an added benefit.

YSA overwinters in low numbers on grasses.

It can move by walking plant to plant, infesting field edges. Scout field edges regularly.



▲ YSA Movement: Sequential 'heat-map' of YSA presence indicates frequent movement within a field. Note that early infestation can take place at field edges.

BANDITO® is registered for YSA, thrips and nematodes. On soils of less than 10% clay an economic benefit to its use is highly likely. If unsure, apply BANDITO® in test strips and monitor growth.

Test strip application can double as barrier treatments slowing infestation by YSA moving from grasses to cane.

