Imperial County Agricultural Briefs

University of California
Agriculture and Natural Resources

Features from your Advisors

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ALFALFA CATERPILLAR MANAGEMENT IN ALFALFA

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Alfalfa caterpillar, *Colias eurytheme* is a warm weather pest with distribution throughout most of North America. There are up to seven generations between May and October in the low desert alfalfa production areas of southern California and Arizona. The adults, called alfalfa butterflies are yellow with black spots on their wings and can become abundant beginning in May and remain abundant through September. Alfalfa caterpillar butterflies flying over tall alfalfa may have most likely emerged from that field and are migrating to regrowth in other fields, so treatment in such field is usually not warranted. The lifecycle of alfalfa caterpillar is synchronized with the cutting cycle of alfalfa; developing from egg to adult stages between cuttings. Football shaped eggs are laid singly, standing on their end, on the upper surface of leaves in fields with regrowth of under 6 inches. You would need to begin checking fields for caterpillars when butterflies are present. These fields need to be checked with a sweep net for caterpillars. Eggs hatch into larvae in 3 to 10 days, grow to about an inch long and pupate in approximately 2 weeks. Alfalfa caterpillars are green with white stripes down their sides and are distinguished from beet armyworm by their velvety appearance (Anonymous 1985).

Alfalfa caterpillars consume entire leaves including the veins and midrib; large larvae are most destructive. The parasitoid of Alfalfa caterpillar, which is known as *Cotesia medicaginis* is a small, black wasp of about 0.25-inch-long attacks the alfalfa caterpillar. The female wasp lays an egg inside very small caterpillars. The wasp egg hatches into a larva that consumes the body contents of the alfalfa caterpillar. Parasitized larvae are lighter in color, swollen toward the rear and somewhat shiny rather than velvety on the surface like normal healthy caterpillars. The wasp larva can be exposed by grasping the caterpillar at each end of the swelling and pulling it apart. A parasitized alfalfa caterpillar dies before it reaches 0.5 inch in length (Anonymous 1985).

Management guidelines. Cutting alfalfa hay early to avoid damage is one of the options. However, timing of early cutting is critical to obtain satisfactory yield and to avoid serious damage. Monitor fields weekly from June through October, checking 2 to 3 times per week during periods of heavy infestations, by taking 5 sweep counts in 4 to 5 field locations. Check for *Cotesia medicaginis* parasitism. Treat with an insecticide when field counts average 10 non-parasitized caterpillars per sweep. *Bacillus thuringiensis* (Bt) may give satisfactory control of alfalfa caterpillars without adversely affecting beneficial species, and leaves no undesirable residue on the hay.

When caterpillars ingest Bt, they cease feeding, but may remain on plants 3-4 days before dying (Anonymous 2006). Some insecticides that may be used for alfalfa caterpillar control are listed in the Table below.

Active Ingredients (AI) and Resistance Management Issues

AI, (Product)	IRAC MoA	Formulation	Rate / acre	Re-entry interval	Pre-harvest interval
Bacillus thuringiensis ssp. Kurstaki (various products)	11A		Label rates	4 hours	0 days
Chlorantraniliprole (Coragen)	28	1.67 SE	3 – 5 fl oz	4 hours	0 days
Flubendiamide (Belt)	28	4 SC	2 - 4floz	12 hours	0 days
Indoxocarb (Steward)	22A	1.25 EC	6.7 - 11.3 fl oz	12 hours	7 days
Methomyl (Lannate)	1A	90 SP 2.4 LV	0.5 – 1 lb 1.5pt – 3 pt	48 hours	7 days
Methoxyfenozide (Intrepid)	18	2F	4 – 10 fl oz	4 hours	7 days

References

Anonymous 1985. Integrated pest management for alfalfa hay. Univ. Calif. Statewide IPM Proj., Publication 3312. 96 pp.

Anonymous 2006. UC IPM Pest Management Guidelines, Alfalfa. http://www.ipm.ucdavis.edu/PMG/r1300611.html

RHODES GRASS; A POTENTIAL FORAGE CROP FOR THE LOW DESERT

Oli G. Bachie – Agronomy Advisor – UCCE Imperial County

Background

Rhodes Grass (*Chloris gayana* Kunth, *C. abyssinica* Hochst (synonym) is a perennial grass native to Africa, but is widespread in tropical and subtropical countries. In the US, it is grown in Florida and Texas. Rhodes grass is said to make heavy yield of hay of excellent quality. Stems are slender, tender, and very leafy. It is very closely related to Bermuda grass (*Cynodon dactylon*) and spreads through stolons with potentially productive nature. The culms are tufted or creeping, erect or decumbent, sometimes rooting from the nodes.

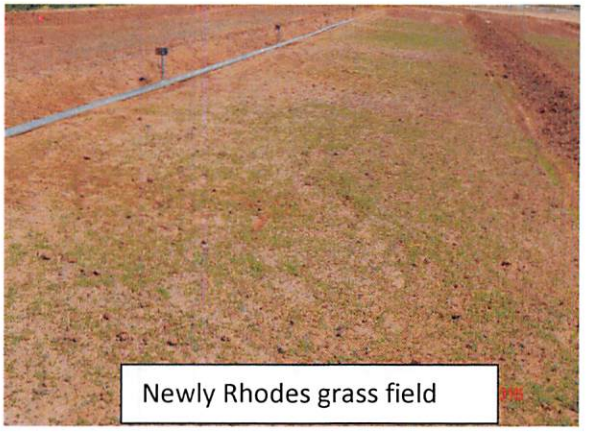
Per our observation from our research field at the Desert Research and Extension Center (DREC), it is noticed that Rhodes grass's best seasonal growth is in the low desert is in the spring & summer, required relatively less work to maintain it, had fairly quick seed germination (1-7 days) and achieved full ground cover within about three months of sowing. Other important features of Rhodes grass (see references below), are wide growth in drought prone regions, very deep root systems & ability to extract water at a depth of 4.5 meters (hence the ability to withstand long dry periods), salt tolerance (considered to be "the most salt-tolerant species"), survival in areas where temperature extremes are 5°C & 50°C. Rhodes grass has also shown strong competitiveness to weeds as the crop at DREC research project was almost weed free when it is at full canopy.

Rhodes grass is cited to have various genetic varieties, such as;

- ✓ "Katambora" and "Finecut" that are diploid
- ✓ both variants are most productive in the first two or three cuts".
- ✓ There are also Tetraploid types.

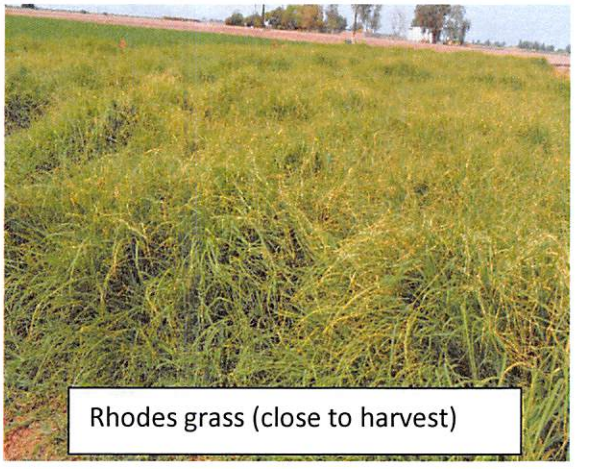
Planting & harvesting

- ➢ Seeds of Rhodes grass are small & light, with over 4 million seeds/kg (2 m/lb)
- ➢ Seeding rate are 1-4kg/ha (0.2-0.8 lb/ac).



Newly Rhodes grass field

- Seeds of Rhodes grass can be broadcasted or shallow-drilled (5-10 mm deep) during fall or spring.
- The seeds can germinate under dry conditions provided that the soil has residual moisture.
- It provides full groundcover within 3 months of sowing.
- Stands require good management and fertilizer (N) if long production (over 3 years) is intended.
- Can be cut once a month if used for hay production. Good time to cut hay is when the crop attains 5-10% seed head emergence which is usually 30-35 days from previous cuttings
- According to some literature sources, highest recorded yield is about 30-40 t DM/ha (12-16 t/ac) with average yield of 10-25 t DM/ha (4-10 t/ac) range, depending on variety, soil fertility, environmental conditions, & cutting frequency. The nutritive value peaks before bloom & then quickly declines.



Rhodes grass (close to harvest)

- We analyzed nutritional values from our first cutting from the low desert and obtained an average crude protein content of 14%. Others suggested that a high quality forage can contain over 15% protein for crops that are 4 weeks of regrowth or less. It is said that nutritional quality steeply declines with maturity.

References (for further information)

1. *Chloris gayana*, Food & Agricultural Organization of the United Nations
2. Moore, G. and Wiley, T. (2006), Perennial pastures for western Australia, Department of Agriculture and Food Western Australia, http://www.agric.wa.gov.au/objtwr/imported_assets/content/past/rhodes%20grass.pdf
3. Ponsens, J., Hanson,J., Schellberg, J., and Moeseler, B.M. (2010), Characterization of phenotypic diversity, yield and response to drought stress in a collection of Rhodes Grass (*Chloris gayana* Kunth) accessions, Field Crop Research, vol. 18 no. 1, http://journals2.scholarsportal.info.subzero.lib.uoguelph.ca/tmp/16785625838293707205.pdf, p. 57-72
4. Jones, R.J., Loch, D.S., Lefeuvre, R.P. (1995), Differences in Mineral Concentration Among Diploid and Tetraploid Cultivars of Rhodesgrass (*Chloris gayana*), Australian Journal of Experimental Agriculture, vol. 35 no. 8, http://search.proquest.com.subzero.lib.uoguelph.ca/agricola/docview/48310796/141DF66, p. 1123-1129

YOUR SUPPORT IS NEEDED FOR NEW ADVISOR AND SPECIALIST POSTIONS IN IMPERIAL COUNTY

Khaled M. Bali, Irrigation & Water Mgmt Advisor, Director UCCE Imperial County

The UC Agriculture and Natural Resources (ANR) Division is in the early stages of reviewing Cooperative Extension (CE) Advisor and Specialist positions in California. The objective is to identify positions for strengthening and rebuilding the UC ANR network to address programmatic gaps and emerging needs. In response to this call, the Division received 138 new CE position proposals (they are ordered alphabetically for reference ease).

Our office along with UC Davis submitted proposals for four Advisors and one Specialist to serve Imperial County. ANR is currently soliciting comments from the public on these positions. The public comment period is open through July 11, 2016. Please visit the link below to provide your comments of support for these positions in Imperial County. Please feel free to contact us by phone (760-352-9474) or email (kmbali@ucanr.edu) if you have any questions. Your support for these positions to address the critical agricultural issues in Imperial County is greatly appreciated.

Links to proposed high priority Positions to serve Imperial County

Position Title	Proposed Location/Housing	Submitted By
Area Advisor in Food Safety and Organic Production	UCCE-Imperial County	Bali, Khaled
Area Agricultural Economics/Farm Management Position Serving Southern California	Riverside	Takele, Etaferahu
Area Plant Pathology Advisor - Imperial	UCCE- Imperial County	Bali, Khaled
Entomology Advisor - Imperial County	UCCE-Imperial County	Bali, Khaled
CE Specialist in Feedlot Management	Desert Research and Extension Center (El Centro, CA) affiliated with the Department of Animal Science, UC Davis	Delany, Mary

Link to public comments
http://ucanr.edu/sites/anrstaff/Divisionwide_Planning/2016_Call_for_Position/

Then please click on the position that you want to make comments on.
Or you can Google "**uc anr call for positions 2016**" to get to the above link

CIMIS REPORT AND UC DROUGHT RESOURCES

Khaled M. Bali, Irrigation & Water Mgmt Advisor, Director UCCE Imperial County
Sharon Sparks, Imperial Irrigation District*

California Irrigation Management Information System (CIMIS) is a statewide network operated by California Department of Water Resources. Estimates of the daily reference evapotranspiration (ET_o) for the period of June 1 to August 31 for three locations in the Imperial County are presented in Table 1. ET of a particular crop can be estimated by multiplying ET_o by crop coefficients. For more information about ET and crop coefficients, contact the UC Imperial County Cooperative Extension Office (352-9474) or the IID, Ag Water Science Unit (339-9082). Please feel free to call us if you need additional weather information, or check the latest weather data on the worldwide web (Google CIMIS for the current link to CIMIS site).

Table 1.Estimates of daily Evapotranspiration (ET_o) in inches per day

Station	June		July		August	
	1-15	16-30	1-15	15-31	1-15	16-31
Calipatria	0.39	0.40	0.39	0.38	0.35	0.32
El Centro (Seeley)	0.36	0.38	0.38	0.37	0.32	0.29
Holtville (Meloland)	0.38	0.39	0.39	0.38	0.34	0.31

* Ag. Water Science Unit, Imperial Irrigation District.

Water and Drought Online Seminar Series

The latest research-based advice on weathering a drought is now available free online. The UC Division of Agriculture and Natural Resources is working to help farmers cope with the unwelcome outcome of historically low rainfall the last three years. UC scientists, with support from the California Department of Water Resources, have recorded video presentations on high-priority drought webpages.

Each presentation is about one half hour in length and is available at the link below:

http://ciwr.ucanr.edu/

Then click on the drought resources link.

2016 COACHELLA VALLEY FARMERS MEETING CALENDAR

WHERE:	Coachella Valley Mosquito and Vector Control District 43-420 Trader Place, Indio, CA 92201
WHEN:	Noon to 1:15 pm

Each meeting will also have an update on programs from the Coachella Valley Mosquito and Vector Control District and the Coachella Valley Water District.

DATE	TOPIC
July 13, 2016	Managing Canker Disease in Coachella Valley Vineyards, Carmen Gispert, UCCE Viticulture Advisor
August 10, 2016	Diseases of Vegetable Crops: Alexander Putman, Assistant Specialist in Cooperative Extension and Assistant Plant Pathologist
September 14, 2016	Pitahaya Mini Festival: Ramiro Lobo, Farm Advisor, UCCE San Diego, and Jose Fernandez De Soto, Academic Coordinator, Hansen Agricultural Research and Extension Center
February 15, 2017	Nematode problems in Coachella Valley Agriculture: Ole Becker, Cooperative Extension Specialist & Nematologist, UCR
March 15, 2017	Irrigation management based on soil, water and crop factors: Laosheng Wu, Professor of Soil & Water Science/CE Water Management Specialist, UCR
April 12, 2017	Fly Dispersal Characteristics, Management options in Agricultural Fields: Dr. Alex C. Gerry, Associate Professor and Cooperative Extension Specialist, UCR

SPONSORS: Coachella Valley Mosquito And Vector Control District, Coachella Valley Water District, Riverside County Agricultural Commissioners Office, UCCE Riverside County

Lunch will be provided. Please call: 760-342-6437 to register for meetings. If you do not register we can not guarantee lunch.

Some meetings have been approved for Continuing Education Credit. Please check the meeting notices when they are sent out to see if the meeting has CE credit.