SPIDER MITES CURRENTLY ACTIVE ON ALFALFA IN THE PALO VERDE VALLEY

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TWO-SPOTTED SPIDER MITES ARE CURRENTLY ACTIVE ON ALFALFA IN THE PALO VERDE VALLEY

SPIDER MITE LIFE CYCLE - 5 DAYS IN SUMMER

- EGGS
-

IMMATURES

- ADULTS

Females can produce 100 eggs

THEY FEED BY INSERTING PIERCING MOUTHPARTS AND SUCKING OUT THE PLANT CELLS AND JUICES, LEAVING AN INITIAL STIPPLED LOOK TO THE LEAF AREA WHERE THEY HAVE BEEN FEEDING

AS THE SPIDER MITE COLONY GROWS, THE FEEDING DAMAGE AREA ENLARGES, AND BECOMES MORE YELLOWED THAN STIPPLED

CONTINUED FEEDING RESULTS IN YELLOWED LEAFLETS.

LEFT UNCONTROLLED SPIDER MITE FEEDING IN ALFALFA CAN ALSO RESULT IN LEAF DESSICATION AND DROP, AS WELL AS A SIGNIFICANT YIELD REDUCTION.

SPIDER MITES ARE OFTEN WIND BLOWN, BUT CAN BE CARRIED FROM ONE FIELD TO ANOTHER ON HARVEST EQUIPMENT, AS SEEN ON MORNING AFTER HARVEST, 2003, BLYTHE, CALIFORNIA

SWATHER HARVESTER BAR MORNING AFTER CUTTING ALFALFA FIELD INFESTED WITH SPIDER MITES, 2003

SPIDER MITES CAN BE PROBLEMATIC ALL SUMMER LONG IN LOW DESERT ALFALFA, AS THEY COLONIZE NEW GROWTH AFTER LEAVING SWATHED HAY

WESTERN FLOWER THRIPS ARE THE PREDOMINANT BIOLOGICAL CONTROL OF TWOSPOTTED SPIDER MITES IN LOW DESERT ALFALFA

- Based on multiple years of experiments/ attempted experiments, western flower thrips usually *(but not always)* move into spring/summer alfalfa just after the first irrigation, and then feed on spider mites.

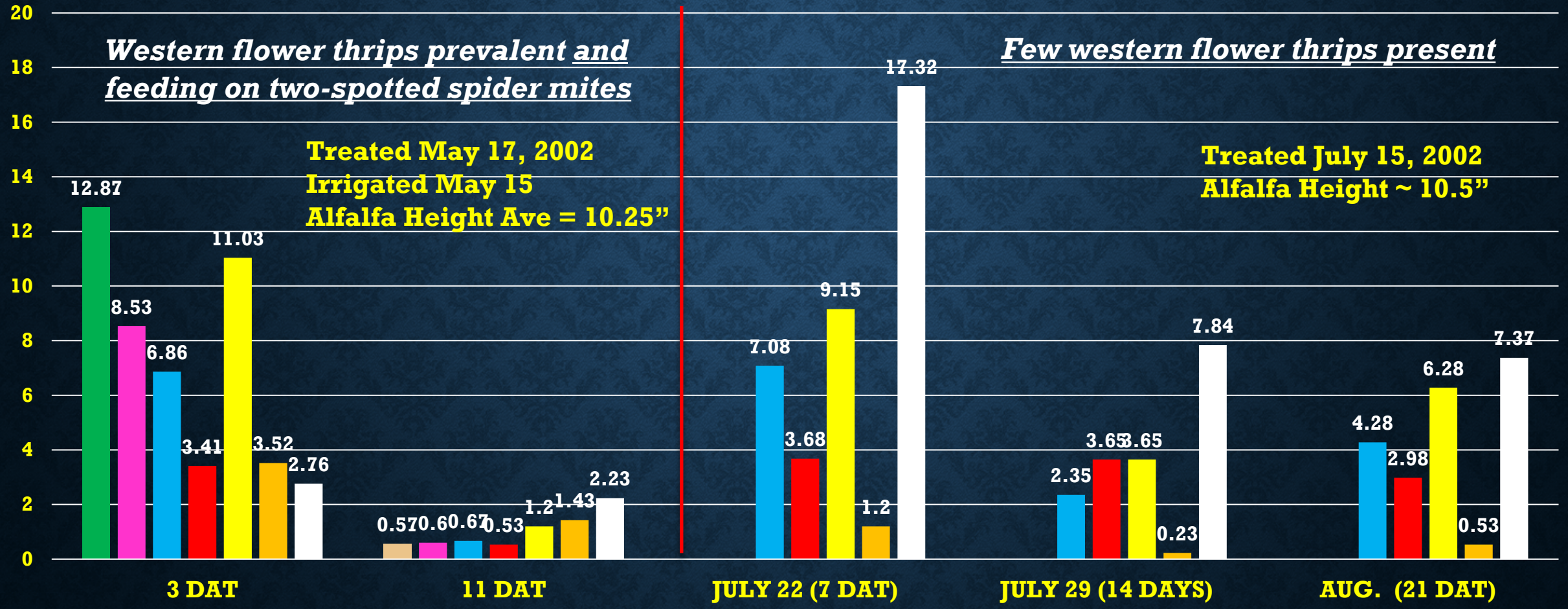
- Treating for two-spotted spider mites before the first irrigation is not recommended unless mite feeding damage is already severe

MITICIDE TREATMENT OPTIONS FOR ALFALFA HAY

- Very few products with miticide activity are registered for usage in alfalfa hay. The only recommended active ingredient is hexythiazox, which is the active ingredient in products such as Onager, Hexamite and Hexythiazox.

- Spider mite control is alfalfa is further limited by hexythiazox being limited to one application/year.

INTERACTIONS OF REGISTERED ALFALFA HAY MITICIDES AND WESTERN FLOWER THRIPS ON TWO SPOTTED SPIDER MITE MOTILES PER ALFALFA STEM, BLYTHE, CA



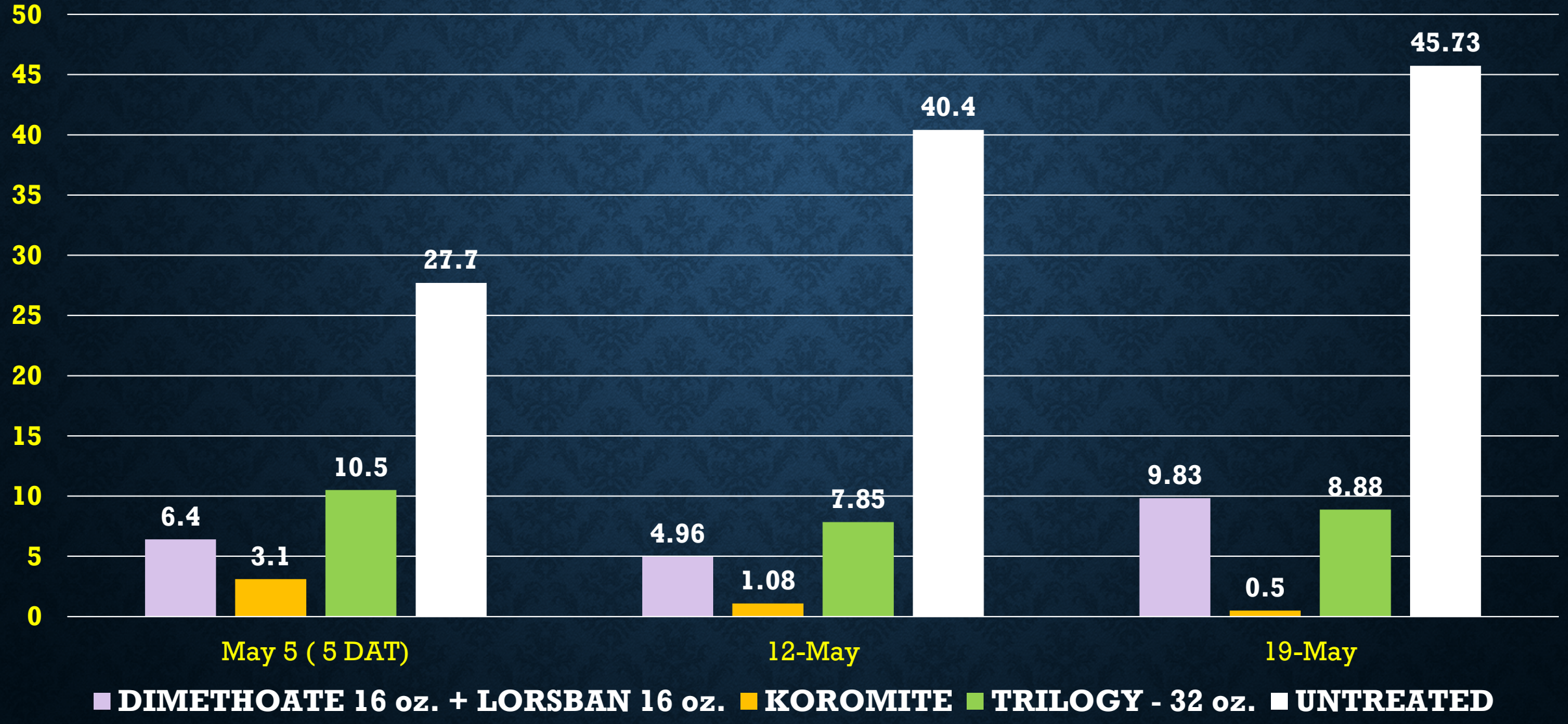
TREATMENT THRESHOLDS?

EFFECTS ON YIELD AND QUALITY?

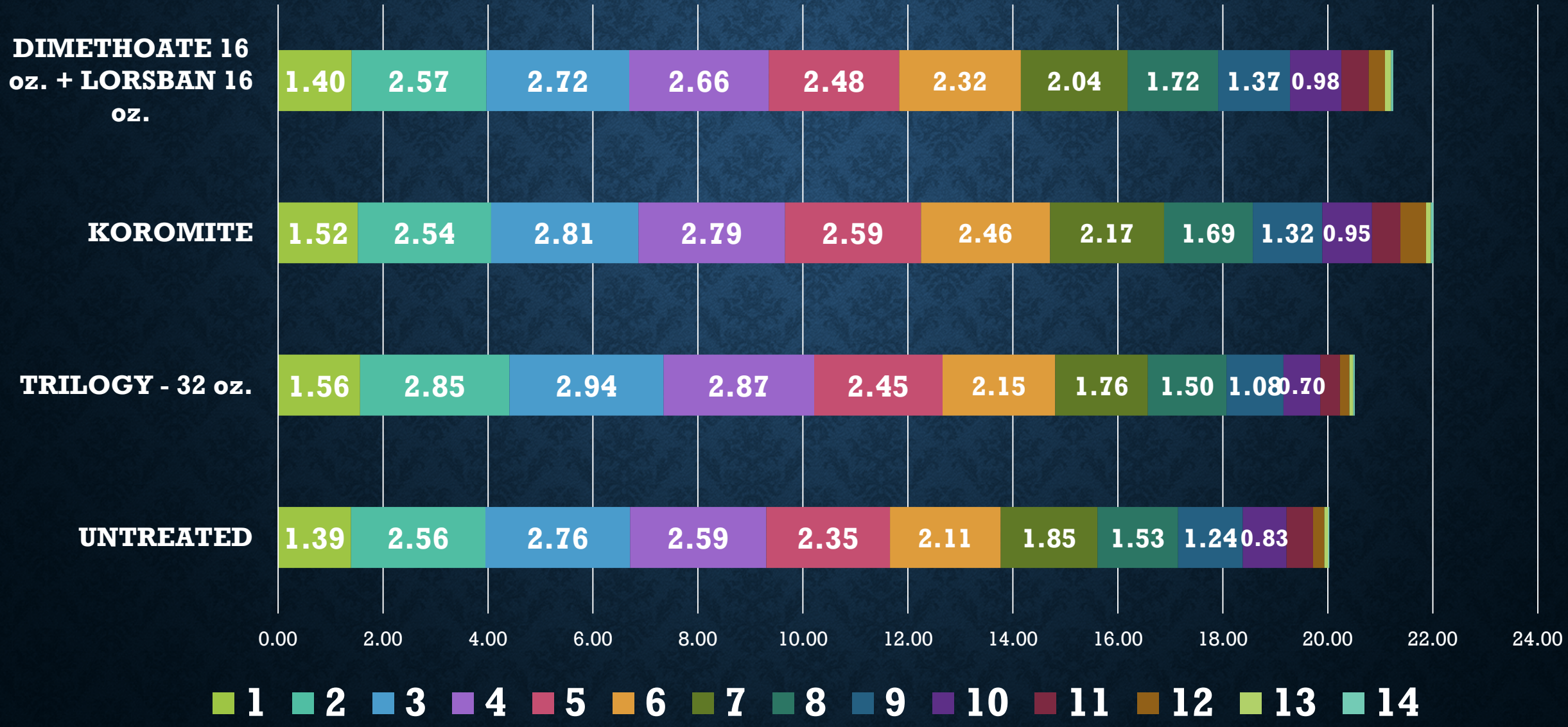
- Limited data exist for spider mite feeding damage on low desert alfalfa hay. Our best data set is from about 20 years ago, and involved large strip trials comparing various products with miticide activity. Untreated alfalfa had less than 30 adults+ immatures/stem when treated.

- This experiment found that spider mite feeding affected yields more than quality, with the yield being associated with stems that were both thicker and taller than untreated alfalfa.

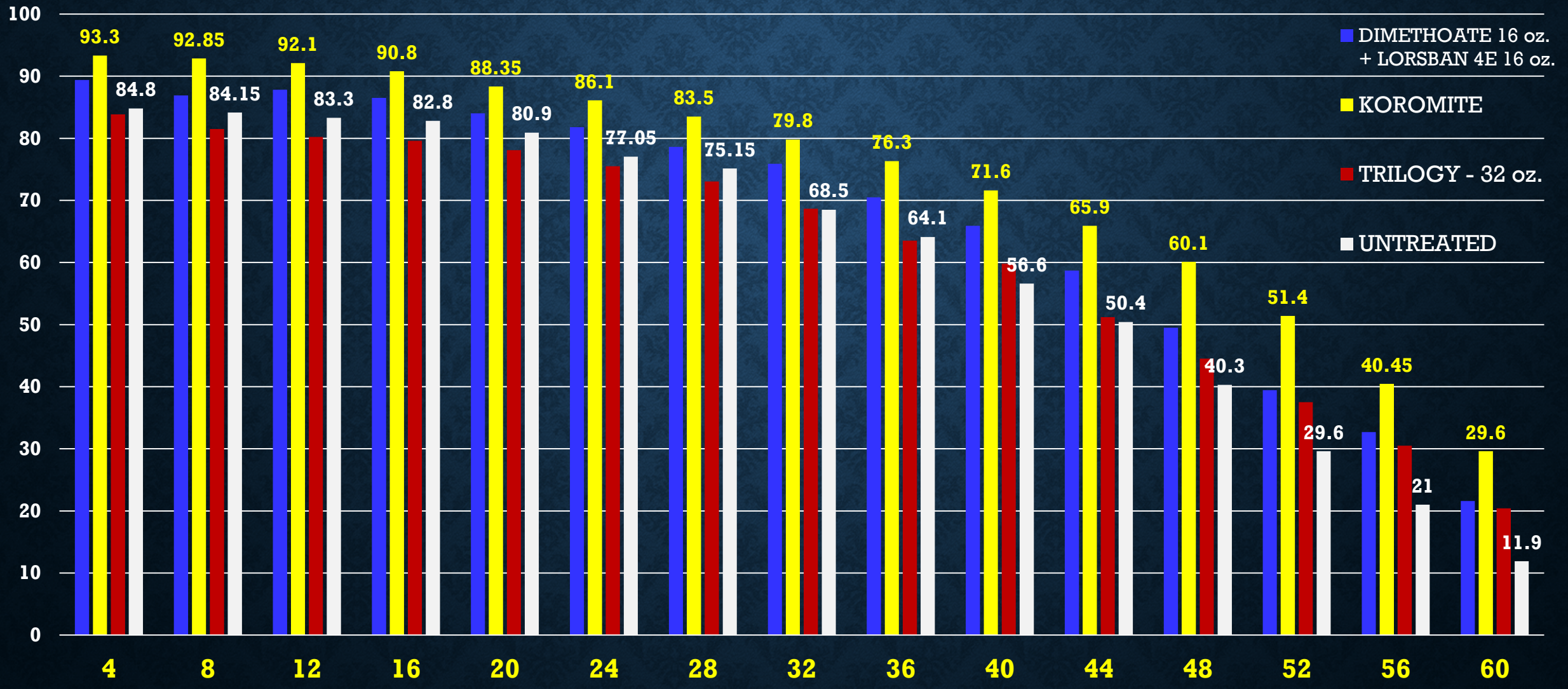
SPIDER MITES MOTILES/ALFALFA STEM FOLLOWING APPLICATION APRIL 30, 2003, AT 5.8 INCHES OF HEIGHT, BLYTHE, CA



ALFALFA INTERNODE LENGTH (INCHES) AT HARVEST ON MAY 23, FOLLOWING MITICIDE APPLICATION ON APRIL 30, 2003, AT 5.8 INCHES HEIGHT, BLYTHE, CA



MEAN ALFALFA STEM DIAMETER (MM) EACH 4 CM FROM CUTTING POINT AS AFFECTED BY TWO-SPOTTED SPIDER MITES AND MITICIDES APPLIED AT 5.8"OF HEIGHT ON MAY 30, 2002, BLYTHE, CA



PLOTS AT HARVEST - 2003

•ALFALFA QUALITY DATA

•*(SAMPLES COLLECTED FROM BALES)*

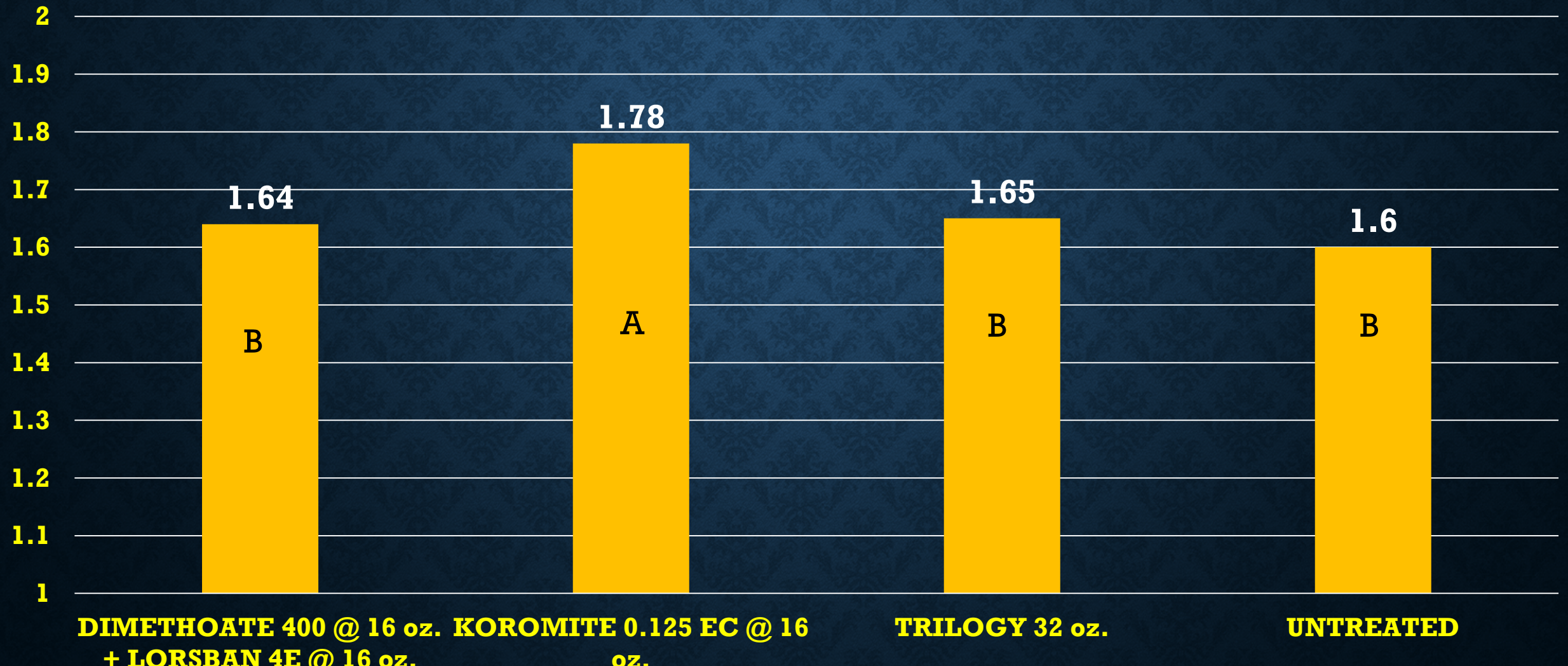
•May 23 cutting following April 30 miticide application, Blythe, CA

• Charles van Dyke, Cooperator

•TREATMENT	RATE/ACRE	ADF	MCF	NDF	TDN	Protein CRUDE	Protein DIGEST.	RFV
•DIMETHOATE 400	1 pt	31.7ab	24.15a	41.9ab	52.75a	21.4 ab	15.0 ab	142.8 ab
•+ LORSBAN 4E	1 pt							
•KOROMITE	1 pt	32.15 b	24.8 b	42.35 b	52.4 a	21.1 a	14.8 a	140.4 a
•TRILOGY	1 qt	31.5a	23.9a	41.1a	52.83a	21.7 b	15.2 b	145.75 b
•UNTREATED	--------	31.5ab	23.6a	41.4ab	52.85a	21.6 b	15.1 ab	144.8 ab

•*Means in columns followed by the same letter are not statistically different at the p<0.05 level*

ALFALFA HAY YIELD *(TONS/ACRE)* ON MAY 23, 2003, FOLLOWING MITICIDE TREATMENTS ON APRIL 30, BLYTHE, CALIFORNIA



ECONOMICS OF TREATING WITH TODAY'S PRICES FOR ALFALFA HAY?

- With the current local alfalfa price being in the range of $345-380/ton (USDA California Hay Prices, April 15, 2022), it doesn't take much crop loss to make a miticide application valuable.

- The 2003 field experiment noted a yield increase of 0.18 tons/acre when spider mites were controlled with an effective miticide product.

- **In today's market that 0.18 tons/acre is worth $62-68/acre** (not including additional crop loss in next cuttings from spider mite feeding).