



County	Contact	Premium Hay (\$/ton)	Top Quality Hay (\$/ton)	Other Hay (\$/ton)	Condition/ Market Activity
Chaves	Sandra Barraza, County Agent	\$160-175 large bales delivered; \$220-230 small bales del.	\$150 large bales; \$190-200 small in barn	\$125-140 large dry cow hay	Market good for last season hay; upcoming season prices still not set
De Baca	Leigh Ann Marez, County Agent	\$160 large; \$220 small	\$150 large	\$140 large dry cow; \$190 striped small bales	Last years supply low; demand high; many weeds from winter moisture
Dona Ana	Rafa Realivasquez, County Agent	\$180 large; \$6.00 small	\$160 large; \$5.00 small	\$140 large; \$3.75 small	2010 prices still uncertain due to fluctuating milk prices; water amounts in question; warm and windy
Eddy	Woods Houghton, County Agent	\$220, 2009 in barn	\$200, 2009 in barn	\$180, 2009 in barn	1 <sup>st</sup> cuts underway (40% cut, 25% baled)
Lea	Wayne Cox, County Agent	\$165 large; \$8.50 small last years cut	N/A	N/A	Nearing 1 <sup>st</sup> cut; wet conditions
Luna	Jack Blandford, County Agent	No hay currently moving	No hay currently moving	No hay currently moving	Demand is high
Roosevelt	Patrick Kircher, County Agent	\$170-175 large; \$195-200 small	\$150-165 large	\$140 wheat hay	Estimates of 2010 prices only; Mostly sold out of 2009 crop; aphids/weevils
San Juan	Mike Larsen, County Agent	N/A	N/A	\$180 Alfalfa/Grass mix	Only alfalfa/grass mix available from NAPI
Socorro	Tom Dean, County Agent	\$175-200; \$6.00 small	\$6.00 small	\$4.00 millet	Last year hay in barn starting to move; cowpea aphids; recent rains helpful
Valencia	Kyle Tator, County Agent	\$7.00-9.00 small	\$6.00-7.00 small	\$5.00-6.00 small	Market flat; wet conditions; aphid and weevil reports

### Alfalfa Weevil Control Options

Jane Pierce, Entomologist, NMSU Agricultural Science Center at Artesia

#### Determining Damage and Choosing Control Measures

Alfalfa weevil can cause significant yield losses in New Mexico hay, but there are a number of control options. The most damaging stage is the larva which feed on the foliage. Weevil larvae are 5-6 mm long, are light green, and have a distinctive white band along the middle of the back. Peak larval densities generally occur shortly before the first cutting in most areas. Adult weevils can also feed on foliage but by far the greatest damage is from larvae.

### Yield Reductions:

Yields can be reduced by about 170 lb/acre for each larva/stem before the first cutting. Yield losses after the first cutting are estimated to be 140 lb for each larva/stem; so if biological or cultural control measures are not enough, more immediate control with insecticides or early cutting may be necessary. When sampling with sweep net or stem samples, be at least 20 paces inside the field and sample from throughout the field. The easiest way to sample is by using a sweep net. Although it is not the most accurate sample, it is still useful. Cut or apply insecticides if sweep net samples indicate 20 larvae/180 degree sweep or 10 larvae per 90 degree sweep. Stem samples are more accurate than sweep net samples. Collect at least 30 stems by walking in a 'U' inside the field, and then examine stems collected in a bucket for small larvae and for damage. Control by cutting or insecticides when 25% -40% of terminals have obvious feeding damage from small larvae or there are 1-2 larvae per stem. This relatively wide range is given because there are many variables in New Mexico, such as plant height and crop value, that should be considered in deciding to be more or less aggressive with treatments. Keep in mind that each larva per stem reduces yield by 170lb/A before the first cutting.

### Biological Control:

There are a number of options for controlling alfalfa weevil. The baseline for control of alfalfa weevil is biological control by parasitic wasps. In the 1980s the USDA released a number of beneficial wasps to help control alfalfa weevil in New Mexico. In surveys conducted over the last 8 years we determined that one of those wasps *Oomyzus incertus* (Figure 1) had become established and was providing good control of alfalfa weevil when combined with control by a wasp that had hitchhiked in with alfalfa weevil. Many fields in the Mesilla Valley have brief infestations that are quickly controlled by the two parasitoids. In the rest of New Mexico only one type of wasp *Bathyleptes* spp. (Figure 2) is well established. The pupae of the *Bathyleptes curculion* parasitoid is very easy to identify (Figure 3). Some hay fields in the Mesilla Valley have good control of alfalfa weevil most years from the two types of parasitic wasps. The rest of New Mexico has some control from one species of wasp that is well established. This wasp eventually can give 80-90% control, but not until there is significant damage (Figure 4). In New Mexico two parasitic wasps are needed to get good control early season, before the first cutting. Insectaries have been established in the Pecos Valley and in Los Lunas. Wasps from these insectaries are spreading out and have been detected in some commercial fields. This year we will establish field insectaries in additional locations in New Mexico.

### Cutting Early or Grazing:

Cutting early is an effective means of control in New Mexico, particularly due to our desert environment. If it's not feasible to cut all fields soon, when fields have significant infestations you can make insecticide applications on the most heavily infested fields and cut the less heavily infested fields. This will also preserve some beneficials on the farm that can move into the treated fields to help control mid season infestations of alfalfa caterpillar or beet armyworm. Grazing does help control alfalfa weevil. Grazing has been shown to reduce the amount of weevils and damage at the Agricultural Science Center field plots in Alcalde. Typically grazing reduces the number of alfalfa weevil eggs by 50-70%.

### Insecticides:

Insecticides are a good option if other means of control have not sufficiently controlled alfalfa weevil. When using insecticides for alfalfa weevil control, consider using or rotating different modes of action insecticides to reduce the likelihood of resistance (Table 1). \*The recommendations in this publication are provided only as a guide. The authors and New Mexico State University assume no liability resulting from their use. Mention of specific products does not imply an endorsement or guarantee of those products, nor does it imply criticism of other, similar products.



Figure 1. *Oomyzus incertus* was released in Dona Ana, Chaves, and Eddy counties in the 1980s. Recent research indicated that it often provides 40% control early season in Dona Ana County, but was not well-established in any other areas. We are working on making releases throughout New Mexico to replicate its success in the Mesilla Valley.

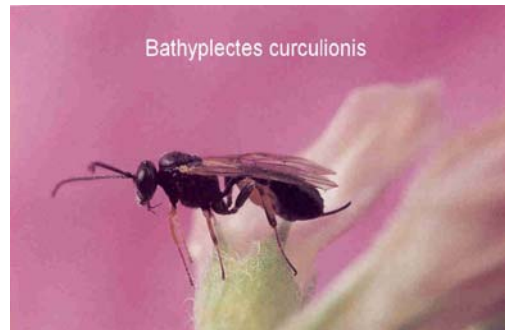


Figure 2. *Bathyplectes curculionis* and the closely related parasitoid *Bathyplectes anurus* are both commonly found in alfalfa fields in New Mexico. Southern New Mexico fields often get 40-50% control from these species early season and higher control after the first cutting, but populations of the parasitoid are generally lower in Central/Northern NM.



Figure 3. Pupae of *Bathyplectes curculionis* parasitizing alfalfa weevil. In the field it will be encased in a filmy weevil cocoon.

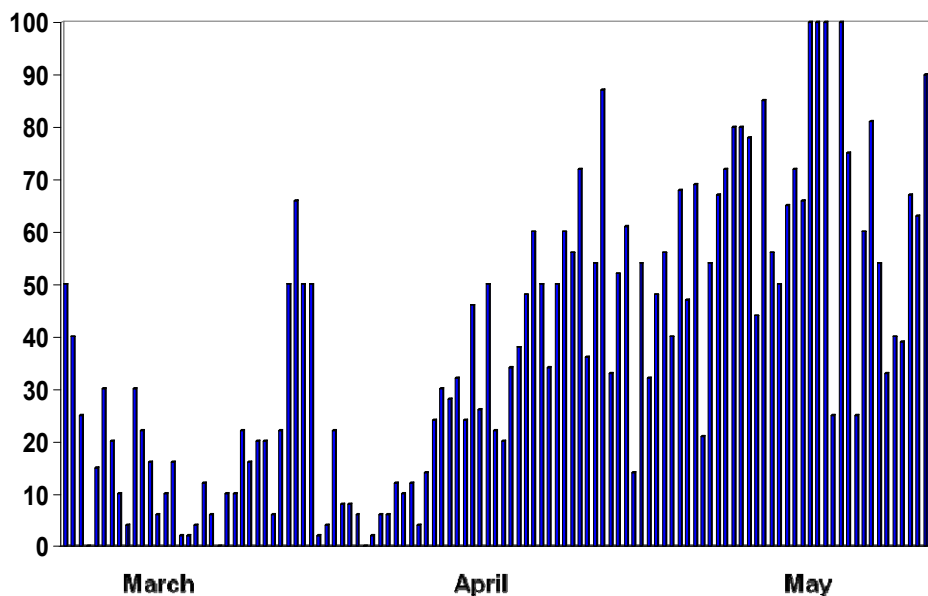



Figure 4. Percent control of alfalfa weevil larvae by one parasitoid, *Bathyplectes spp.* throughout in the Pecos Valley.

Table 1. Insecticides to control alfalfa weevil in New Mexico.

Alfalfa Weevil Insecticides	Active Ingredient	Rate per Acre	Harvest or Graze (days)	Mode of Action Group <sup>2</sup>	Restricted Entry (hours)
Baythroid XL <sup>1</sup>	cyfluthrin	1.6 - 2.8 fl oz	7	3	12
Cobalt EC <sup>1</sup>	chlorpyrifos + g-cyhalothrin	19-25 fl oz	7	1B + 3	24
Lannate SP <sup>1</sup>	methomyl	0.5-1.0 lb.	7	1A	48
Lorsban Advanced	chlorpyrifos	1 - 2 pts	1 pt – 14 d, more than 1 pt – 21d	1B	24
Mustang Max <sup>1</sup>	zeta-cypermethrin	2.2 - 4 fl oz	3	3	12
Pounce 3.2 EC <sup>1</sup>	permethrin	4 - 8 fl oz	More than 4 oz – 14d	3	24
Proaxis 0.5 EC <sup>1</sup>	gamma cyhalothrin	2.56 - 3.84 fl oz	1 d forage, 7 day harvest	3	24
Sevin 80 S	carbaryl	1-7/8 lbs	7	1A	12
Steward 1.25 SC	indoyacarb	6.7 - 11.3 fl oz	7	22	12
Warrior 1 CS <sup>1</sup>	lambda cyhalothrin	2.5 - 3.8 fl oz	1 d forage, 7 d hay	3	24

<sup>1</sup> Restricted Use Pesticide; <sup>2</sup> Insecticide Resistance Action Committee, Mode of Action Classifications: 1A Carbamates: AChE Inhibitors; 1B Organophosphates: AChE , Inhibitors; 3 Pyrethroids: Sodium Channel Modulators; 22: Sodium Channel Blockers

\*Please be aware that pesticide labels and registration can change at any time; by law, it is the applicator's responsibility to use pesticides ONLY according to the directions on the current label. Use pesticides selectively and carefully and follow recommended procedures for the safe storage and disposal of surplus pesticides and containers.

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