DRIP IRRIGATION IN ALFALFA

NETAFIM™
GROW MORE WITH LESS

June 1, 2013
Written by: Todd Rinkenberger
and Dennis Hannaford

ARE YOU INTERESTED IN INCREASING YIELD 25 - 40%?

Of the common agronomic crops, alfalfa consumes the largest amount of water. Its consumptive use can exceed 46" of water per year. This fact combined with the real opportunity to drive solid yield increases are the main reason growers are interested in using drip irrigation on alfalfa. Alfalfa is a deep-rooted perennial forage crop that is mainly planted for hay production or grazing. When compared to other forage crops, alfalfa has a very high yield potential and responds very well to subsurface drip irrigation (SDI). A key benefit of irrigating alfalfa with SDI is the ability to irrigate during and immediately following harvest allowing for rapid re-growth which can result in more cuts and higher yields - 25% to 40% higher.

ADVANTAGES OF SDI IN ALFALFA

- Rapid re-growth from irrigating immediately following and even during harvest
- Reduces plant stress which increases the yield per cutting
- Reduces intervals between cuttings which increases the number of cuttings
- Fewer weeds because the soil surface is kept dry
- Longer stand life by managing irrigation to produce healthier root systems
- Improved uniformity of growth resulting in even windows, better curing and an overall more efficient harvest

If you are a grower that already has experience with subsurface drip in other annual crops, the adaptation of drip to alfalfa will come with some changes, but nothing dramatic. You probably understand how to maximize production under drip irrigation through proper scheduling of water and fertilizer. Irrigation scheduling is slightly different due to the many short growth periods and multiple harvests per year you have with alfalfa.

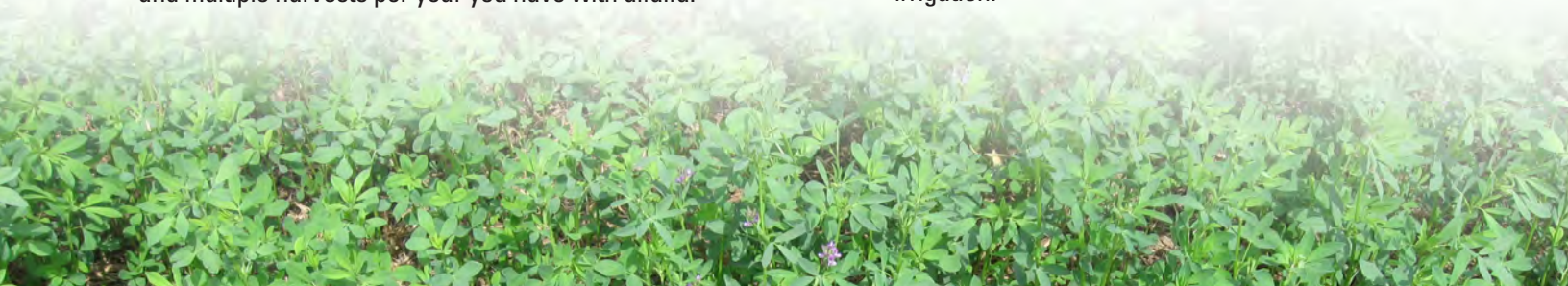
Another difference is the importance of replacing the nutrients, such as potassium (K) and phosphorus (P), that have been extracted with each growing cycle, in order to drive yield, quality and stand life.

Growers without subsurface drip experience have a great opportunity for yield increases because they are not biased and can start with a focus on producing more alfalfa at a higher quality. With that in mind, you can set your system up ideally for alfalfa production.

In either case, in order to achieve the greatest success, we recommend dripline lateral spacing around 40" and a depth between 8" to 12".

Yield increases of **25 to 40%** are possible with drip with no loss of quality. This is achieved in a few ways:

1. Less crop stress and faster re-growth post cut.
   The faster re-growth is the result of irrigation uniformity and better water management especially in the pre-cut dry down and post cut curing process. With flood irrigation, the non-irrigation period can be 12 to 16 days whereas with drip an 8 to 10 day non-irrigation is standard. In sandy soils, the period can be less.
2. More stems per crown and increased leaf compared to flood irrigated fields.
3. Increased forage tons per acre per cutting, even in the hot summer months.
   The reduced stress on the crown from better water management results in lush vegetative growth and higher yields. This yield increase is not accompanied by a decrease in quality because it results from lush vegetative growth not woody stem growth. Thus quality is maintained along with increased yields.
4. The ability to quickly irrigate the entire block. For example, the ability to water an entire block within 24 hours of hay removal vs. 5-7 days with flood irrigation.



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Longer stand life means more profit. Evidence is beginning to show that with drip irrigation you may be able to increase stand life 1 to 2 years. It appears this is a function of better overall plant health due to more timely water and fertilizer applications. Another contributing factor is reduced weed pressure because you are not wetting the soil surface during irrigation. There is also evidence that subsurface drip irrigation improves soil structure. The slow wetting of the soil by drip irrigation keeps large soil pores from filling with fine particles thus improving aeration and reducing compaction.

WHAT KIND OF RETURN CAN I EXPECT?

Managing irrigation with a Netafim subsurface drip irrigation system provides greater opportunity for growing higher yields with less water. The return on investment depends primarily on yield achieved, the price of alfalfa produced and the cost of water. In many cases, we have calculated a 2-3 year payback for a complete Netafim SDI system.

HOW CAN I MANAGE RODENTS?

It is no secret that Pocket Gophers cause yield loss/crop damage in alfalfa. They can also damage subsurface drip irrigation systems. As most growers are aware .... there is no silver bullet to managing rodents pressures in any crop. What we recommend is a layered approach to managing rodents to minimize impact on yield and your SDI system:

1. **Site Selection** - set yourself up for success by selecting fields that do not have a history of unmanageable rodent pressure.
2. **Site Preparation** - deep rip the soil in preparation for planting. You probably do this anyway and it is helpful in destroying burrows, thus completely disrupting the habit gophers need for survival.
3. **Predators** - establish a line of defense in the field that works when you don't. Recent work in California by the U.S. Fish and Wildlife Service showed demonstrable declines in pocket gopher activity following the installation of owl boxes in a vineyards. You can expect results from these nocturnal feeders in alfalfa.
4. **Trapping** - can be effective in low population densities.
5. **Poisons** - both baits and fuming toxicants are effective in treating hotspots. Burrow builders that build a burrow on the field's edge is an effective way to intercept gophers as they move in the direction of your fields. We suggest protecting the entire field edge with particular attention to riparian areas, ditch banks and adjacent fields that have potential impact on your field.
6. **Protec-T™ Dripline Protectant** - Protec-T is a dripline maintenance product marketed exclusively by Netafim. When properly injected into the drip irrigation system, vertebrates find Protec-T offensive. It has been shown to promote migration of rodents to non-irrigated areas which decreases damage to subsurface driplines.

MORE INFORMATION

For additional information on SDI in Alfalfa, we have the following resources:

Netafim Alfalfa Website -
www.netafimusa.com/alfalfa

Contact a Netafim USA Dealer -
www.netafimusa.com/agriculture/support/locator

Contact your Local Netafim USA District Sales Manager -
www.netafimusa.com/agriculture/team-members

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5470 E. Home Ave.
Fresno, CA 93727
888.NETAFIM (638.2346)
559.453.6800
www.netafimusa.com