

Spring Farming Tips in a Drought Year

While recent rains have provided some much needed precipitation, unfortunately it still looks like this will be a dry year unless there is a dramatic turnaround. Snowpack surveys have shown a significant improvement compared with what they were just a month ago but we still have a ways to go. What happens through the rest of March and into early April can have a large effect. Regardless of exactly what kind of year it ends up being, it is always a good idea to plan ahead. Below are some tips to consider for spring planning.

- **Begin monitoring soil moisture in March.** If winter precipitation does not refill the soil profile (which is likely the case this year), consider irrigating earlier than normal to refill the soil profile. This tip is especially important for deep-rooted perennial crops like alfalfa. Irrigating in the spring to refill the soil profile can help avoid drought stress later in the growing season. Most irrigation systems in the Intermountain Region are barely able to keep up with crop water use and do not have the capacity to refill a depleted soil profile during the summer months. This is especially true for wheel-line systems with a ratio of one wheel-line per 30 or 40-acres. Deep soil moisture is important because it is usually needed to carry the crop through peak water use periods in mid-summer.
- **Use soil moisture sensors.** The tip above emphasizes the importance of filling the soil profile to at least 3 or 4 feet in spring. However, how do you know the moisture status at the lower levels of the root zone? Soil moisture sensors (the most common one we have worked with is the Watermark sensors from Irrrometer) have proven to be an extremely valuable tool to determine the soil moisture status deeper in the soil profile. Using a tool like soil moisture sensors is especially beneficial in drought years to know the depth to which winter rains have wet the soil, to decide when to start irrigating, and to know the soil depth reached with each irrigation.
- **Irrigate for high spring production for alfalfa.** Alfalfa yield is typically highest in spring and tends to decrease with each successive cutting for the remainder of the season. Alfalfa forage quality is also higher in spring than in mid-summer. Averaging results from years of alfalfa variety tests indicated that the first cutting represented 42 percent of the total production for a 3-cut schedule and 35 percent for a 4-cut schedule. Full irrigation into July would provide sufficient water for normal production for the first two cuttings of a 4-cut schedule—61 percent of the annual production. Seventy-five percent of the seasonal production occurs in the first two cuttings of a 3-cut schedule (irrigation up to mid-July). Therefore, when water supplies for the season are inadequate, it is best to irrigate fully in the spring if possible rather than spread the limited water over the full season.
- **If practical, allow for some late summer irrigation of pastures.** Alfalfa is better able to withstand deficit irrigation than pasture grasses. When moisture is severely limiting, alfalfa goes into a drought-induced dormancy, ceases growth and will normally recover to produce full yields the next year. Grasses are not as drought tolerant and stand can be lost if irrigation water is withdrawn too early and soil moisture reserves are insufficient. If soil moisture content is extremely low and some irrigation water is available, it may be beneficial to provide some irrigation, even if only a partial irrigation, in late August to avoid stand loss.
- **Consider avoiding crops that require full-season irrigation water** such as spring-planted alfalfa or perennial grasses if you depend on water from an irrigation district. Spring-seeded barley, wheat, or triticale cut at the boot or soft-dough stage makes a good forage crop that requires less water. Barley matures earlier than wheat and may get by with one less irrigation. Triticale because of its rye background and extensive root system generally performs better than wheat or barley under moisture-limiting conditions.
- **Fertilize adequately for the expected length of the growing season.** Estimate how long you will be able to irrigate and the anticipated yield and fertilize accordingly. It doesn't make sense to apply the full amount of fertilizer if the yield will be cut in half because of insufficient water. However, on the other side, many growers tend to under fertilize their pastures. If water is going to be scarce, you don't want inadequate fertilizer in the spring to limit yield and spring is typically when you get the greatest response to applied fertilizer. Therefore, make sure you have adequate fertilizer for maximum yield for the time period when water is adequate but not beyond.
- **Scout for weeds and insects early in the season.** Controlling weeds in the seedling stage usually results in the best weed control and prevents weeds from taking moisture away from the crop. Also you don't want to sacrifice yield from insects like the alfalfa weevil when water is the most limiting factor. The alfalfa weevil is more damaging in a drought stressed crop.

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