60 N. Ronks Rd.
Suite K
Ronks, PA 17572
(717) 687-6224

High Energy Forages and Soil Building Cover Crops

Forage Sorghum Boot Stage Harvest

King's AgriSeeds Research Team

One concept that is fairly new to the market is the harvest of summer annual forage sorghum at the boot stage. Boot stage harvest is managed as a one-cut system, but as mow and wilt rather than direct chop silage. As with small grain forages, we allow the plant to mature to the point that it begins filling the seed boot in preparation for seed head formation (Feekes stage 10-10.5). The crop is then mowed, dried to approximately 35% dry matter and chopped. King's has completed many trials using this management practice, and we have many customers that manage forage sorghum in this way. To date we have seen that this program works well after short season corn in our more southern regions. In addition, boot stage harvest provides quick forage to allow for timely planting of small grain forages. In either case, it provides more flexibility to the rotation.

Sorghum products in our 2013 trials were harvested 49-69 days after harvest. That's quite a bit of biomass produced in a short window. Even if you think you don't have time for a summer annual, take advantage of sorghum crops if you can – they provide an often ideal mix of yield and timing. We challenge you imagine your total yearly dry matter production increasing – maybe even doubling or tripling on acreage that is single-cropped. Sorghums grow easily in a two or three month window, and in many regions can work after a wheat harvest to boost a double-crop, or even triple crop system.

Management Tips

Seeding Rate– 25lbs/Acre

Seeding Depth– Seed into moisture. 1 inch deep.

Harvest according to plant maturity. This will require monitoring the plant to ensure a timely boot stage harvest (the optimal stage of quality for a cut and wilt system).

The chart below shows forage sorghum yields at the same location. Sorghum was drilled in 7 inch rows and harvested at boot stage. AF 8301 showed higher yields in most research locations, but it is a non-BMR, which means the digestibility and NDFd are lower.

Additionally, while the 6501 (a photoperiod sensitive sorghum-sudan) and the 8301 (a non-BMR forage sorghum) showed huge yields, consideration must be given to harvest. Handling that much dry matter can be cumbersome. These two varieties are also quite tall, and standability can be an issue – especially if the crop is planted at high populations, which often results in thinner stems and lodging. If lodging has been a problem, we often recommend dwarf sorghum products, which are shorter but leafier, standing well and yielding with or above their full-height counterparts.

Taken at boot stage, these forages can produce a large volume of feed high in digestible fiber, an important nutritional component of getting the most milk value (or average daily gain) out of your forages. This translates into higher feed efficiency and means that more of the crop's nutritional value is available to the animal during digestion. Fiber digestibility, or NDFd, is arguably more important than protein – if the plant is very lignified and has a low NDFd, less of that protein will be available to the animal (and less of most other nutrients, as well).

2013 King's Sorghum Boot Stage Harvest Trial—Mt. Joy, PA

Planted 06/20/13- Harvested 08/08-08/28 Previous Crop– Soybeans Fertility– 70 Units of N

	DM Tons/A	Tons @ 65%	Plant Height "	Boot Stage Date	Days to Boot	Days to Harvest	% CP	% aNDFom	% NDFd 30 hr	% Sugar	% NEL	% Kd Rate
AF 8301	11.0	31.5	60.0	20-Aug	61	69	10.9	57.3	37.7	4.0	0.63	5.01
AS 6501	10.1	29.0	78.3	Vegetative	NA	58	11.1	57.0	41.1	4.3	0.62	5.22
AF 7401	9.3	26.5	44.3	28-Aug	69	69	12.6	54.5	41.5	3.3	0.61	5.54
AS 6402	6.2	17.6	58.3	17-Aug	58	58	13.7	53.5	40.3	3.1	0.63	5.17
AF 7201	4.5	12.8	67.0	8-Aug	49	49	12.2	56.7	41.0	5.3	0.69	5.58
AF 7101	4.3	12.2	63.7	3-Aug	44	49	12.2	57.4	43.0	4.2	0.69	5.82
Mean	**7.0**	**20.0**					**11.9**	**56.5**	**41.5**	**4.1**	**0.65**	**5.36**
LSD (.05)	**1.16**											
cv (%)	**9.8**											