



Fertility Requirements for Summer Annuals by Gerry Davis

It has been said that sorghums can grow on ground that corn won't, however meeting fertility needs is as still important with sorghums (sorghum-sudans, forage sorghums and sudan hybrids) as with any crop. Sorghums will produce twice the forage on an inch of rain or irrigation as will corn, but they do have similar nitrogen needs. Nitrogen needs for sorghums can most easily be expressed as 1 to 1½#'s N/acre per growing day. This separates the multi-cut sorghum-sudans (SS) and sudan hybrids (SH) from the single cut forage sorghums (FS). SS and SH should be spoon-fed due to the luxury feeding of N by these plants. Limit the N to the amount needed between cuttings. Since they are first cut in 45 days after planting and every 30 days thereafter (with adequate sunlight), suggested application rates are 45-50 units and 30-35 units, respectively. These rates of N application are important to prevent nitrate toxicity. Obviously, single-cut FS needs to have the N in place for the whole growing period unless fertigation (fertilizing thru irrigation) is used.

Sorghum, like corn silage removes a huge amount of biomass from the soil which requires the replacement of N, P and K. Unlike GMO corn, however, the sorghum root-mass breaks down readily and returns organic matter more quickly to the soil. See table 1 for nutrient uptakes for various 30% DM forage removal rates.

Tons biomass @ 30% DM	Nitrogen #'s per acre	P as P₂O₅ #'s per acre	K as K₂O #'s per acre
10	50	45	80
15	75	65	100
20	100	75	120
25	125	75	140
30	150	75	160

Table 1 (from Purdue Forage Field Guide 2009)

With any fertility recommendation comes the advisory to test the soils and know the cropping history of the field you are planting. This is especially true where residual herbicides have been applied. Manure applications are must also be accounted for and are recommended for only the pre-plant and not the second or third application in SS and SH plantings.