



INTRODUCTION

In Louisiana there is the chance to grow abundant forage resources. Warm season perennial grasses primarily bermudagrass and bahiagrass sometimes associated with dallisgrass are the “core” of our forage systems. In winter, cool season annual grasses (oats, cereal rye, and annual ryegrass) or legumes (ball, crimson, berseem, and white clover among others) can be successfully planted. There are a few alternatives to extend the grazing season and try to reduce the hay feeding periods, also called “transition periods” or “gap periods”. The periods (usually May-June and October-December) of the year with these limitations are usually complemented with stockpiled or conserved forages, which, depending on the nutrient requirements of the animal, may or may not need to be supplemented. In the Gulf Coast region, the spring transition period is a 45-60 d period between late April and mid-June. Red and white clovers’ growth pattern is delayed compared to winter grasses making them suitable for this transition period; however, an appropriate rest period allowing stockpiling is needed. The term stockpiling has to do with a method of conserving and storage of forage in-place without mechanical harvesting as hay, and for stocking/grazing utilization.

MATERIALS AND METHODS

- Three treatments were evaluated on pastures planted in September of three consecutive years: 1) grazed until mid-February (MF); 2) grazed until first week of March (EM); and 3) grazed until last week of March (LM). Grazing re-started on May 1. Pasture was a mixed of annual ryegrass, red, white and berseem clover. Each year, 24 crossbred steers (330 ± 11 kg) were blocked by BW, allotted to 1 of 6 groups (2 replicates/treatment), and continuously stocked at 995 kg BW/ha.
- At planting using a no-till planter with a clover box: ‘Marshall’ annual ryegrass (27 kg/ha), Red Ace red clover (12 kg/ha, ‘Durana’ white clover (3 kg/ha), and ‘BigBee’ berseem clover (15 kg/ha)
- Urea was split applied at a rate of 40 units of N/ha on d 40 after planting and on d 40 after grazing started.
- PROC GLM; RCBD with 2 replicates; treatment, year and their interaction were the independent variables
- Grazing started the same day on all pastures on late April-early May depending on the year.
- BW, forage mass, and nutritive value were determined every 15 days; ADG and beef production per ha estimated
- Wet chemistry analyses for CP, NDF, ADF; TDN estimated

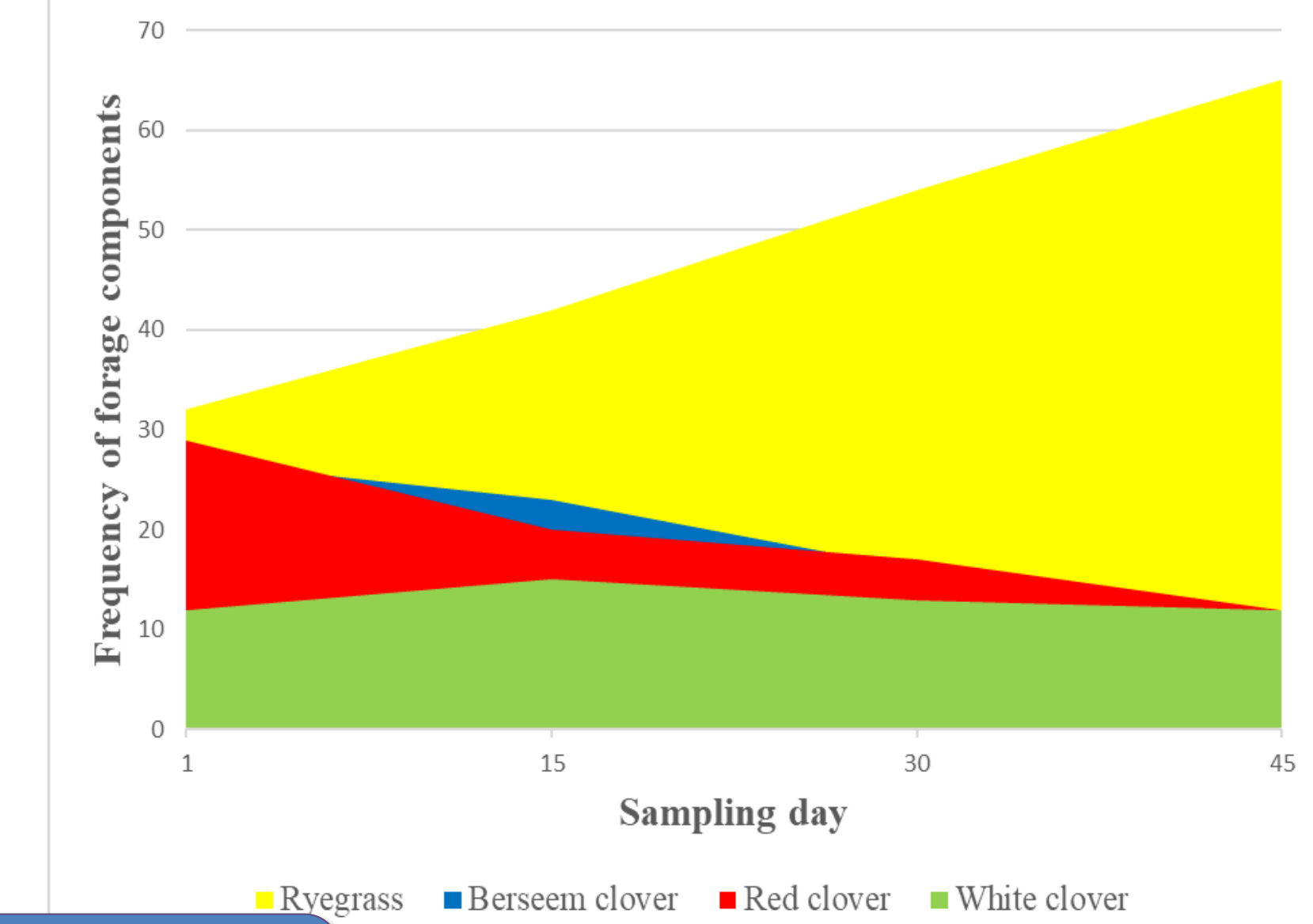
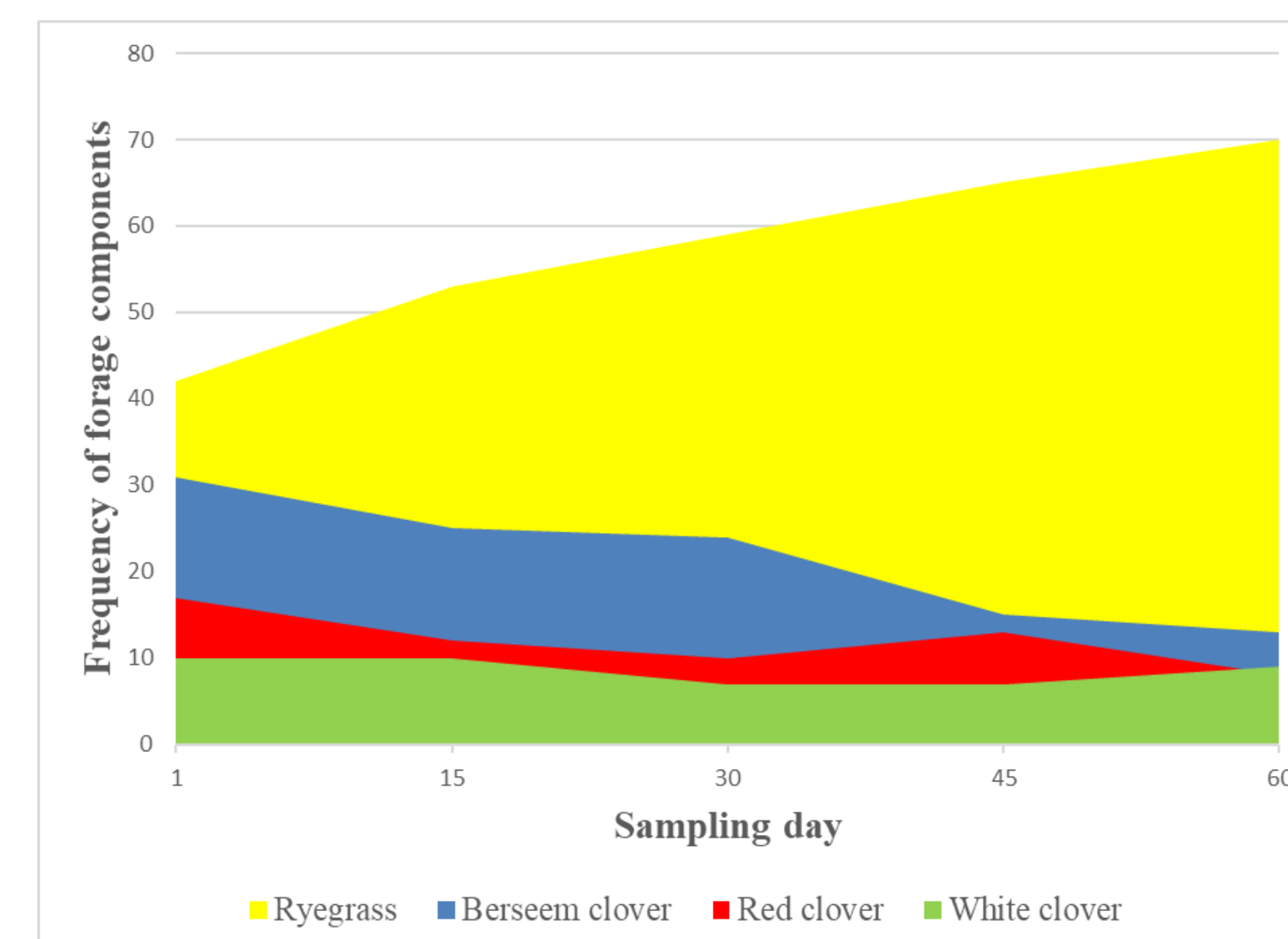
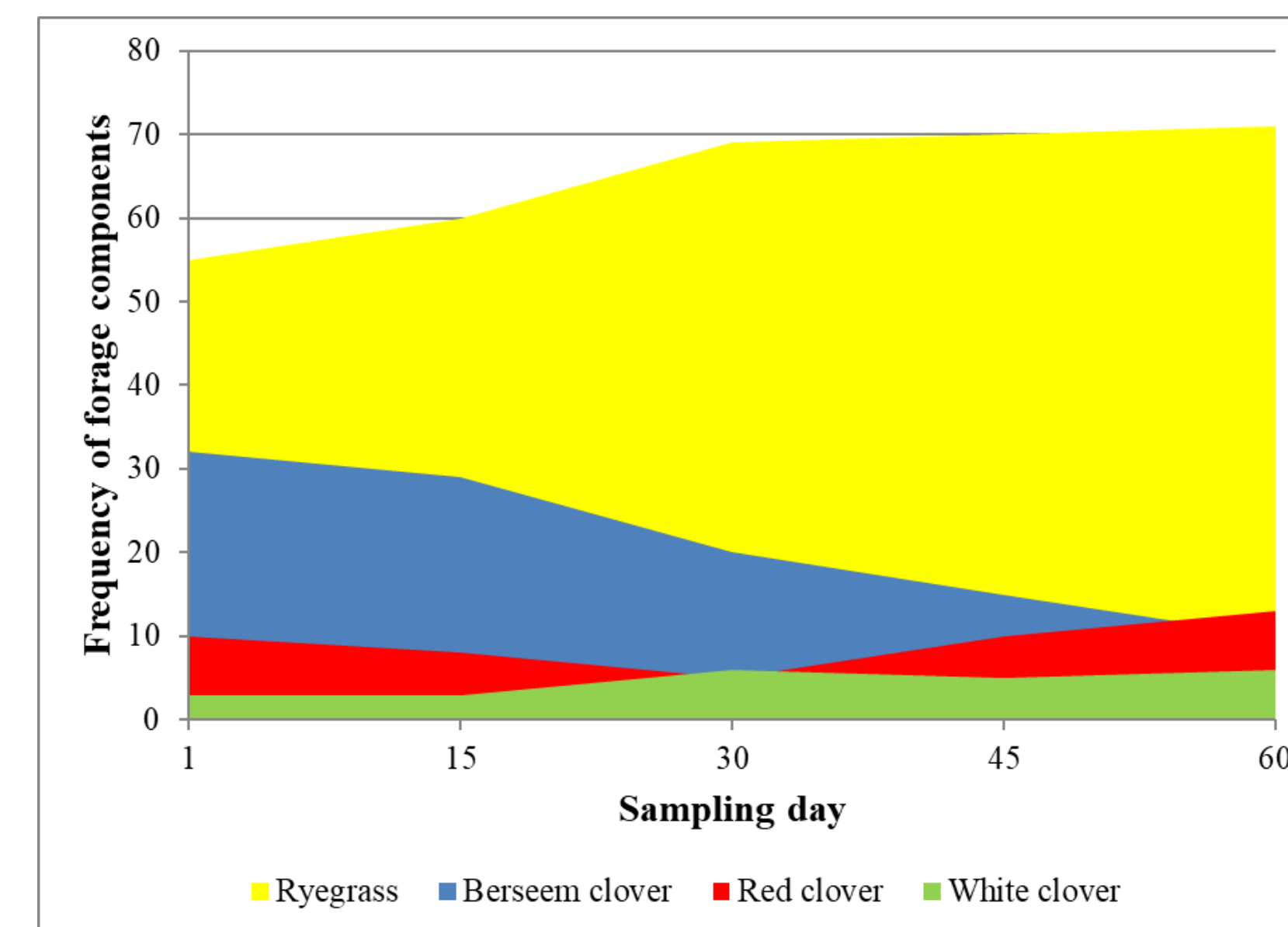
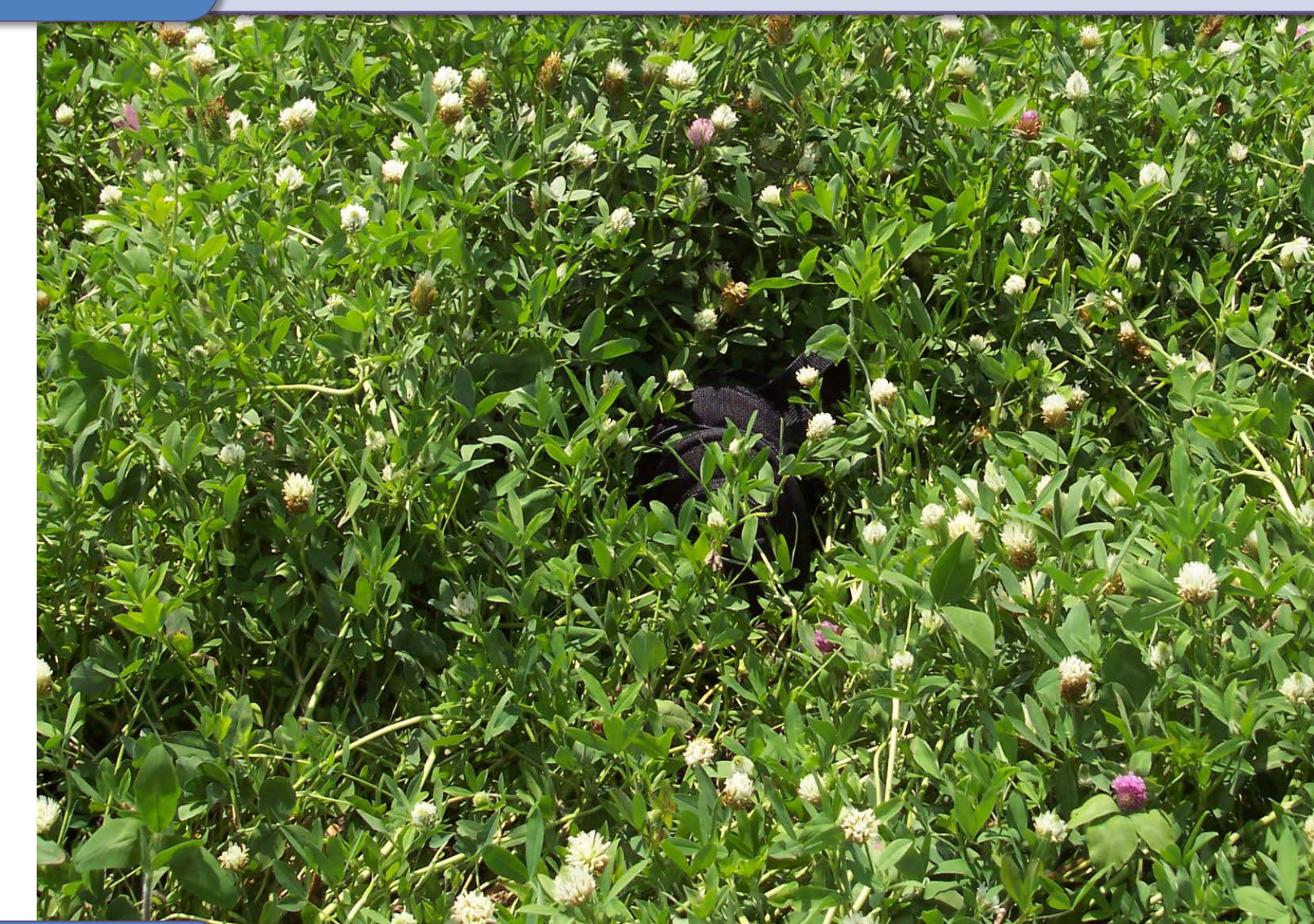
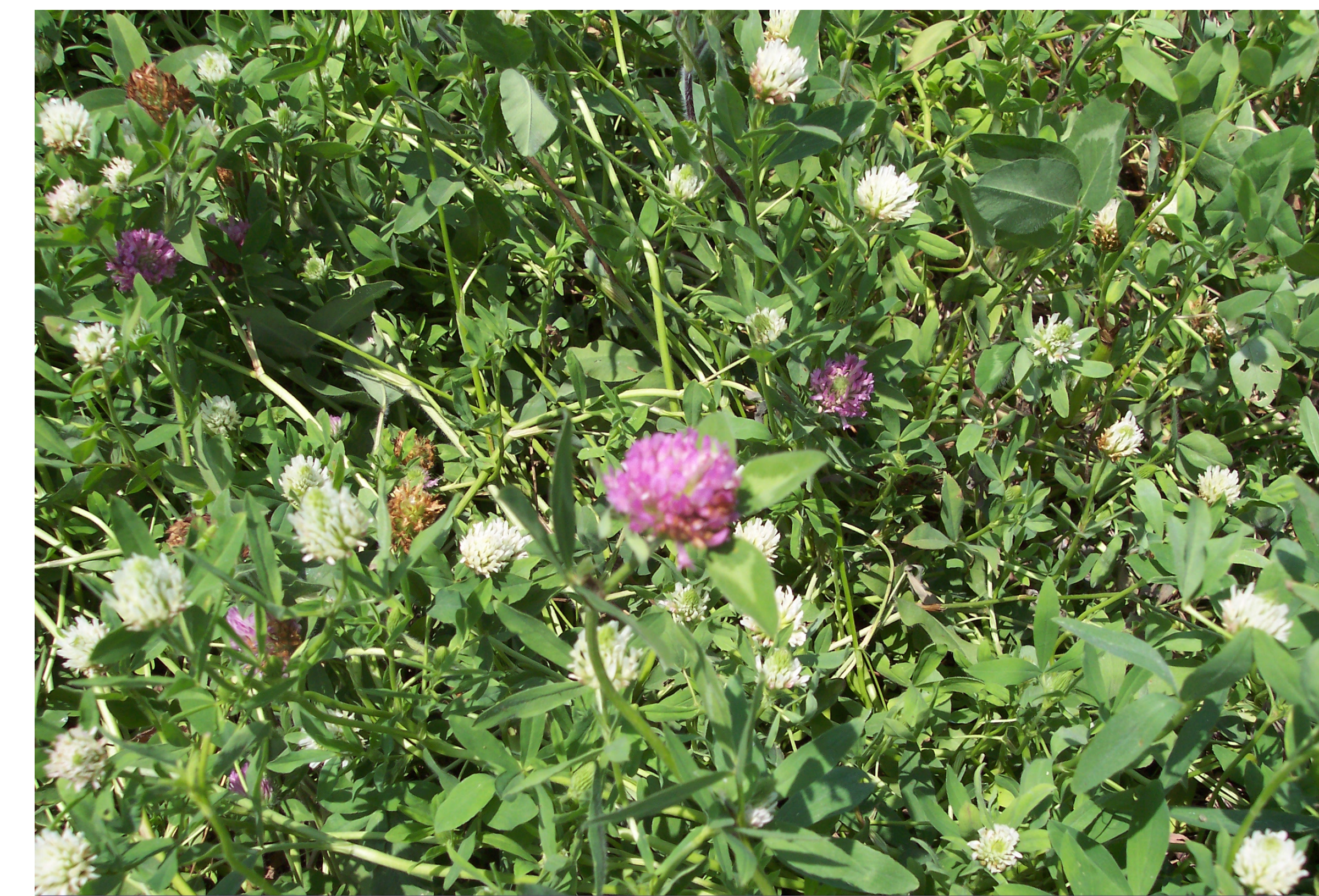


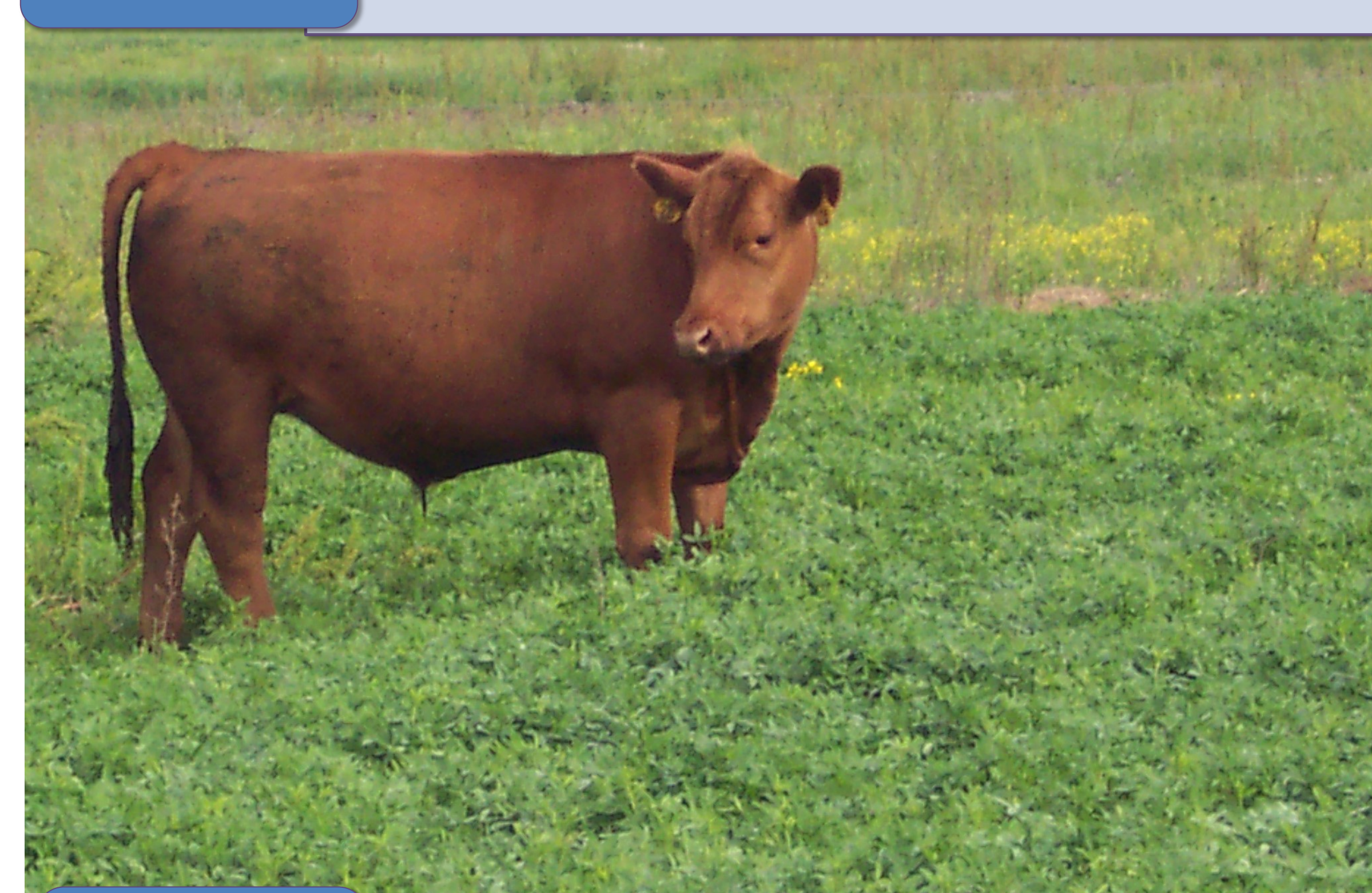
Figure 1 Botanical composition of pastures (MF, EM, LM, respectively)



Picture 1 Annual ryegrass, berseem and red clover



Picture 2 Close look at forage mix mid May, year 2



Picture 3 Steer grazing mixed pasture in late May

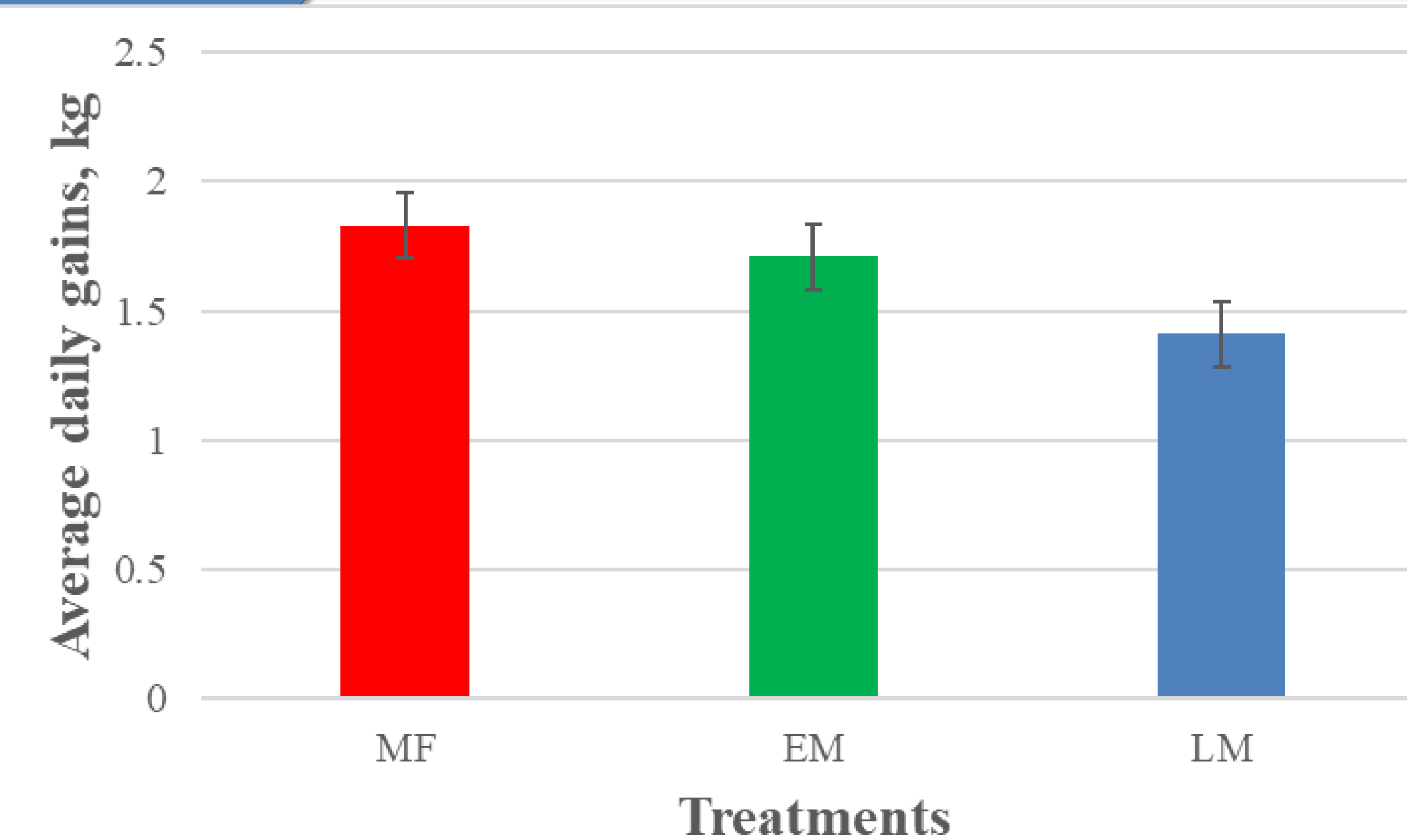


Figure 2 Average daily gains of steers grazing stockpiled winter pasture

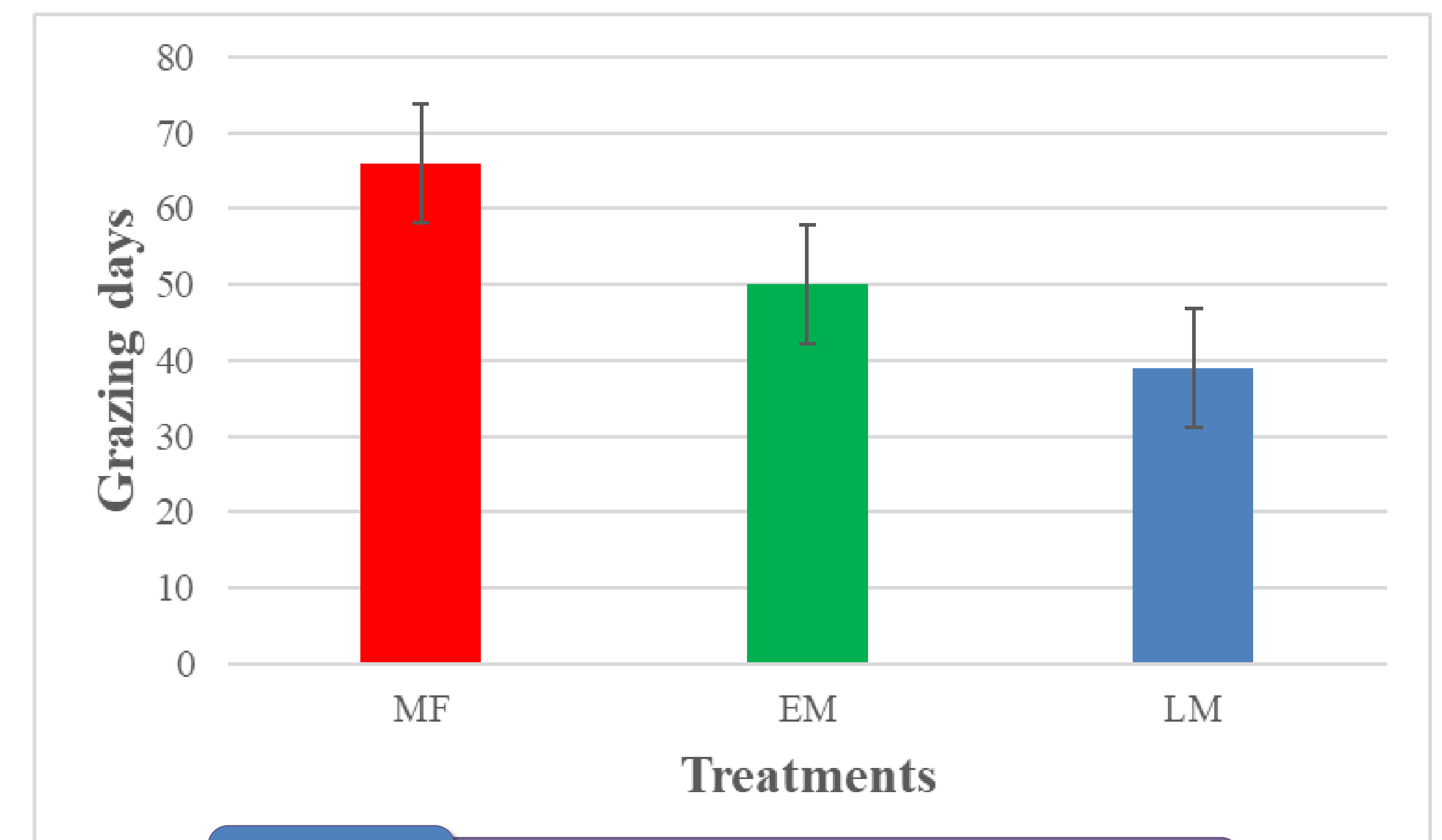


Figure 3 Grazing days by treatment

RESULTS AND DISCUSSION

Forage mass at the beginning of the grazing period was greater ($P<0.05$) in MF, followed by EM and finally LM. This represented a forage allowance of 2.0, 1.6, and 1.1 kg DM/kg BW. On d0, the proportion of annual ryegrass was greater ($P<0.05$) in MF than in EM and the smallest in LM. Proportion of clovers was greater ($P=0.04$) in EM in Year 2 while MF and LM were similar but greater for MF in Year 1. Berseem clover represented 59% of the clover biomass in MF while red clover was 72% of the clover biomass in LM. Proportion of clovers decreased with time while annual ryegrass became mature affecting its palatability. Steers that grazed on MF and EM had greater ADG (1.83 and 1.71 kg) than those on LM (1.41 kg). Grazing season was longer ($P=0.03$) for MF (66 days) than for LM (39 days) while EM was intermediate (50 days).

CONCLUSION

A rest period from early March to late April would allow grazing of high-quality pastures during the spring transition period. Berseem clover during the first 15 to 20 days and then red and white clover supported steers daily gains. Annual ryegrass matured rapidly, considerably reducing its nutritive value and hence it was refused by cattle. Extending the grazing season with a clover mix can significantly reduced the need for conserved forage, increasing profitability and sustainability of grazing ecosystems.