DuraCor for Weed Control in Pastures

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Weed control can be a significant cost and have a major impact if it's not managed correctly. Weeds compete with desirable forage plants for essential resources such as nutrients, water, and sunlight, which results in a reduced supply of available forage. To combat this, an integrated approach that includes preventative, cultural, mechanical, and biological control is best. However, some methods require labor-intensive efforts and may need a multi-year plan to see results. Herbicides are the most efficient and time-effective option for weed control. In Florida pastures, there are various herbicides available for use, each with a unique mode of action that targets different weed species.

Florida faces many challenges with hard-to-control weeds impacting its pastures and range land. Dogfennel and tropical soda apple, as examples in our work, are estimated to cover over one million acres of the state's perennial grass pastures and native habitats. Although herbicide programs have been developed to control these weeds, new herbicide products are being developed and must be tested to guarantee effective weed control to be added to the producers' "herbicide toolbox." DuraCor is a pre-mix product with a well-known and effective herbicide, aminopyralid (Milestone), and a new synthetic auxin herbicide named florpyrauxifen-benzyl (Rinskor active). Our research looked at how efficient this active ingredient premix is in controlling some of our challenging weeds, such as dogfennel and tropical soda apple (TSA), and if it causes any damage to our grass forages.

Weed Control. The work consisted of applying DuraCor as the single product in the spray tank to observe its activity on its own and with common herbicide tankmix partners with good populations of dogfennel and TSA. DuraCor was applied at the rate of 16 fl oz./acre. Tank-mix partners were PastureGard HL (8 fl oz./acre), WeedMaster (48 fl oz./acre), and 2,4-D (48 fl oz./acre). A standard treatment of GrazonNext HL (24 fl. oz./acre) & PastureGard HL (8 fl oz./acre) was applied for comparison. We also added methylated seed oil (1% volume/volume) or a non-ionic surfactant (0.25% volume/volume) to applications to examine how the adjuvant would impact weed control.

Figure 1. DuraCor with methylated seed oil on dogfennel 30 days after treatment.

Figure 2. DuraCor with methylated seed oil on dogfennel 60 days after treatment.

Figure 3. DuraCor with methylated seed oil on dogfennel 120 days after treatment.

To assess the product's effectiveness, we conducted weed injury evaluations at 30, 60, and 120 days after application (DAT) by estimating the percentage of weed control. Our findings showed that dogfennel was tolerant to DuraCor when applied alone (Figure 1, 2, and 3), with control not exceeding 20%. However, TSA trials generated promising findings, resulting in at least 85% weed control.

Figure 4. DuraCor & WeedMaster with methylated seed oil on dogfennel 30 DAT

Figure 5. DuraCor & WeedMaster with methylated seed oil on dogfennel 60 DAT

Figure 6. DuraCor & WeedMaster with methylated seed oil on dogfennel 120 DAT

The good news is that adding a tank-mix partner in dogfennel applications significantly increases control of this weed . Tank-mix partners WeedMaster and 2,4-D resulted in the highest levels (Figures 4, 5, and 6) of dogfennel control. On the other hand, for TSA, while adding a tank-mix partner also increased control, DuraCor remained effective throughout all evaluations.

In both weed trials, the use of methylated seed oil provided a stronger initial effect. Still, by 120 days after application (DAT), the results for both adjuvants were similar in terms of weed control. This research demonstrates that DuraCor is effective against TSA, but additional tank-mix partners are necessary for optimum control of dogfennel.

Forage Tolerance. In terms of forage tolerance, it's essential to consider the varying degrees of tolerance to herbicides among different forage species. Our research focused on common cultivars of forage species in south Florida, namely bermudagrass ('Jiggs'), stargrass ('Florona'), and limpograss ('Floralta').

Similar to the weed control research, DuraCor (16 fl oz./acre) was applied alone and with tank-mix partners. For bermudagrass and stargrass, the tank-mix partners were WeedMaster (48

fl oz./acre), 2,4-D (48 fl oz./acre), and Escort (0.5 oz./acre). For limpograss, Rifle (16 fl oz./acre) and Escort (0.5 oz./acre) were chosen as tank-mix partners since it has a lower tolerance to herbicide applications. Three standard treatments were added in the limpograss trials for comparison; Chaparral (3 oz./acre), Rifle (16 fl oz./acre), and Chaparral (3 oz./acre) & PastureGard HL (12 fl oz./acre). The adjuvants methylated seed oil (1% volume/volume) or a non-ionic surfactant (0.25% volume/volume) was added to applications.

Two harvests using a flail harvester allowed for a comparison of yield production between the treatments applied and untreated control. Overall, bermudagrass and stargrass showed tolerance to herbicide applications. However, limpograss appeared to be less tolerant to herbicides. When DuraCor was applied alone with a non-ionic surfactant as an adjuvant, there was a reduction of over 25% in yield production during the first harvest. However, there was no injury in the second harvest, and the limpograss yield was similar to the untreated control. These results led to the conclusion that DuraCor does not affect bermudagrass or stargrass, but caution should be exercised when using this product in limpograss fields.

In conclusion, our research on weed control and herbicide tolerance in forage species has yielded promising results. However, there is still more data to be evaluated, particularly the 365 DAT from our weed control trials and DuraCor trials with goatweed (*Scoparia dulcis*) and applications during the establishment of newly planted bahiagrass. We hope this ongoing research will continue to help improve the management practices for weed control and herbicide use in Florida pastures.

Questions, contact Dr. Sellers at sellersb@ufl.edu.

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