



Fall vs Spring Herbicide Application for PRE Weed Control in Field Peas

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Downy brome

- Is a common weed problem in western North Dakota
- Emerges in the fall or early spring
- Is very competitive for soil moisture and nutrients
 - A density of 50 plants per square foot can remove all available soil moisture to a depth of 2.5 feet
 - Can reduce establishment of spring planted crops
- Will emerge on the soil surface or at depths of up to 4 inches
- Can be a problem both in cropland and pasture/range



Preemergence Herbicide

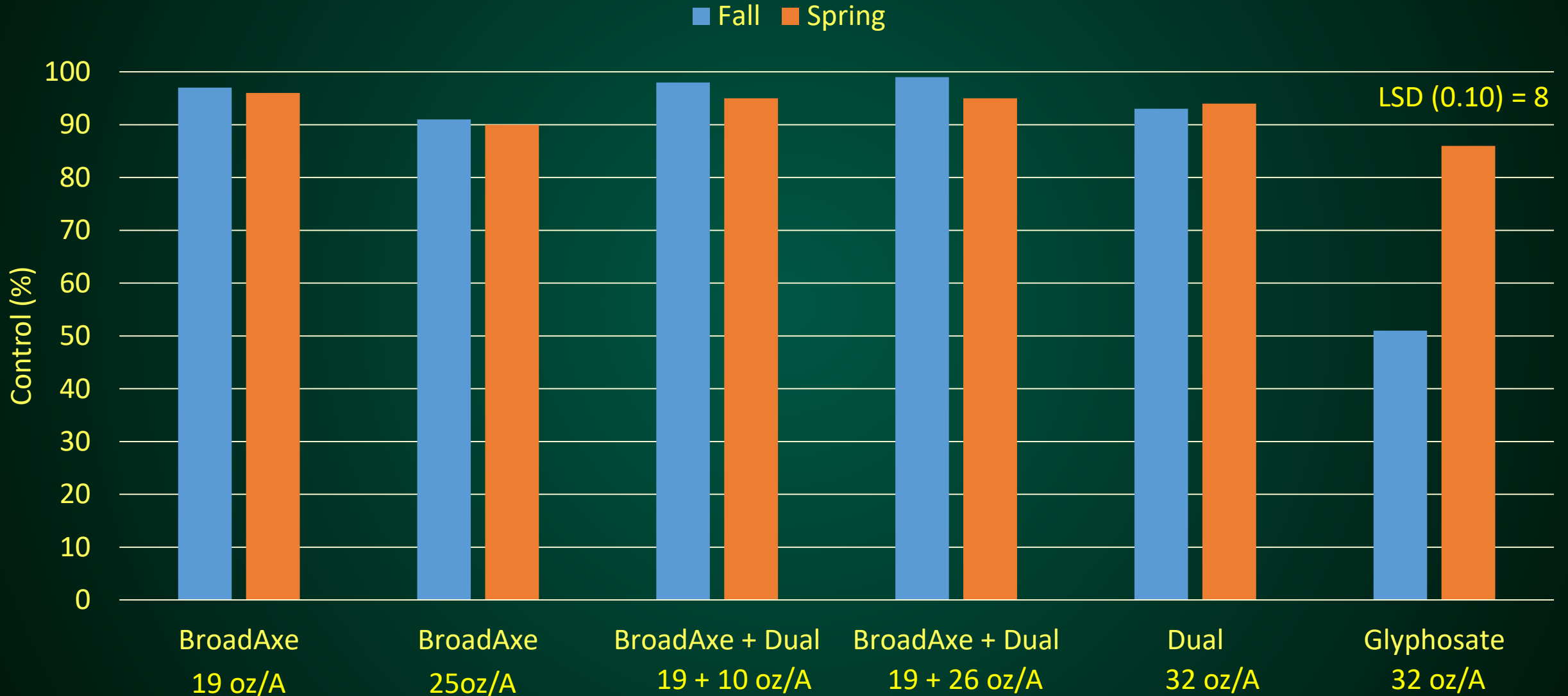
- Are active on weed seedlings
- Require rainfall or tillage for activation
 - In western ND, most fields are under no-till production
 - Spring rainfall in western ND is not always reliable
 - Failure to activate herbicides with rainfall leads to poor weed control
- Fall application of Preemergence herbicides
 - Most herbicides are degraded through biological activity
 - Cold soil temperatures limit soil microbial activity
 - Herbicides can be incorporated through rainfall in the fall, through melting snow, or with early spring rains
 - Can help to keep field clean of weeds that will speed up planting in spring

Fall vs Spring application of Dual II Magnum and BroadAxe in Field Pea, 2016-17

- Compared fall applied preemergence treatments with glyphosate alone
 - Glyphosate (32 oz) + BroadAxe (19 oz)
 - Glyphosate (32 oz) + BroadAxe (25 oz)
 - Glyphosate (32 oz) + BroadAxe (19 oz) + Dual II Magnum (10 oz)
 - Glyphosate (32 oz) + BroadAxe (19 oz) + Dual II Magnum (26 oz)
 - Glyphosate (32 oz) + Dual II Magnum (32 oz)
 - Glyphosate (32 oz)
- Treatments applied on October 28, 2016 or May 5, 2017
- Peas planted on May 5, 2017
 - Only 0.23 inches of rainfall during 1st week after planting
 - Only 0.58 inches of rainfall during 1st month after planting



Downy brome control with fall applied herbicides



* All PRE treatments were tank-mixed with glyphosate (32 oz/A); evaluate on May 26 (3 weeks after spring application)

Untreated



Glyphosate (32 oz/A)



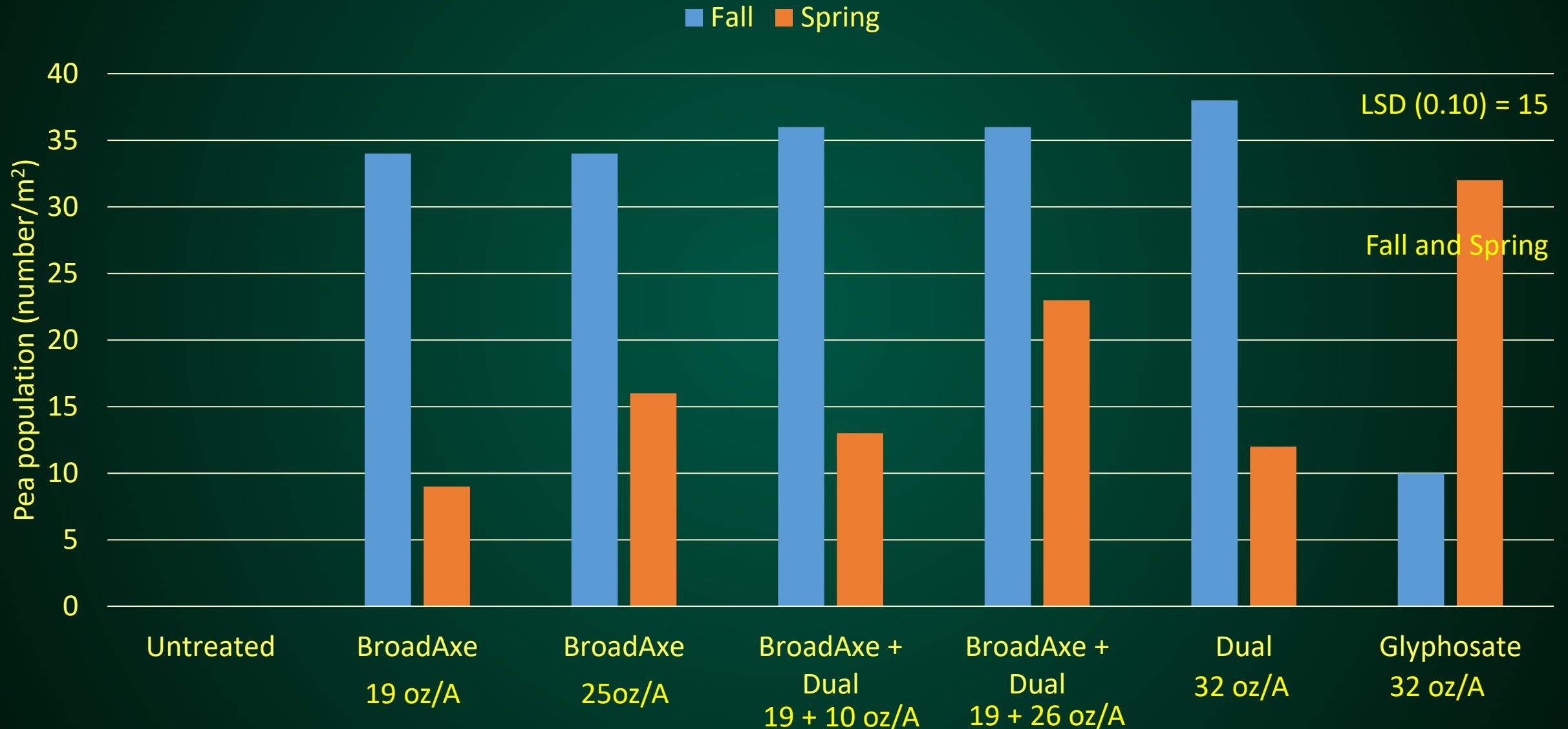
Glyphosate (32 oz/A) + BroadAxe (25 oz/A)



Glyphosate (32 oz/A) + Dual II Magnum (32 oz/A)



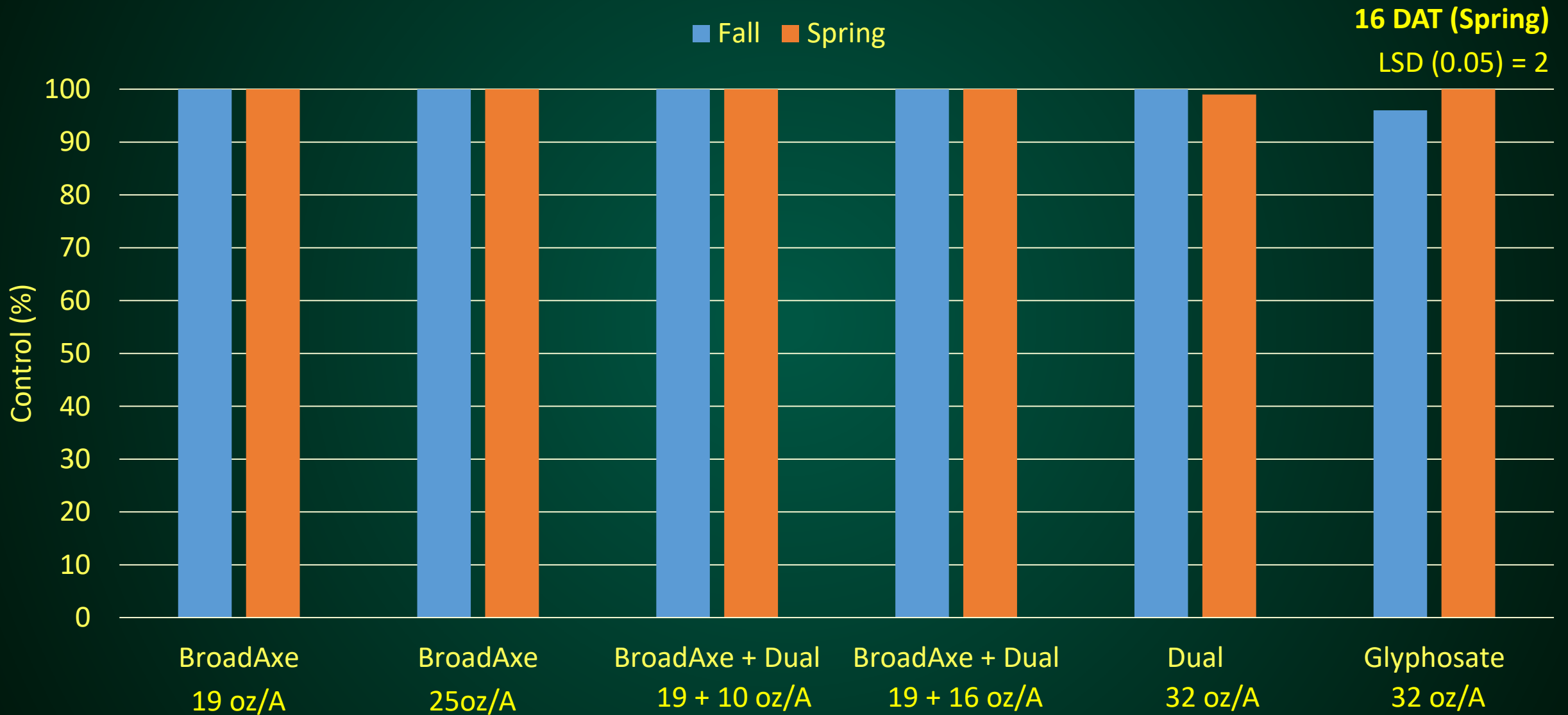
Pea establishment following fall applied herbicides



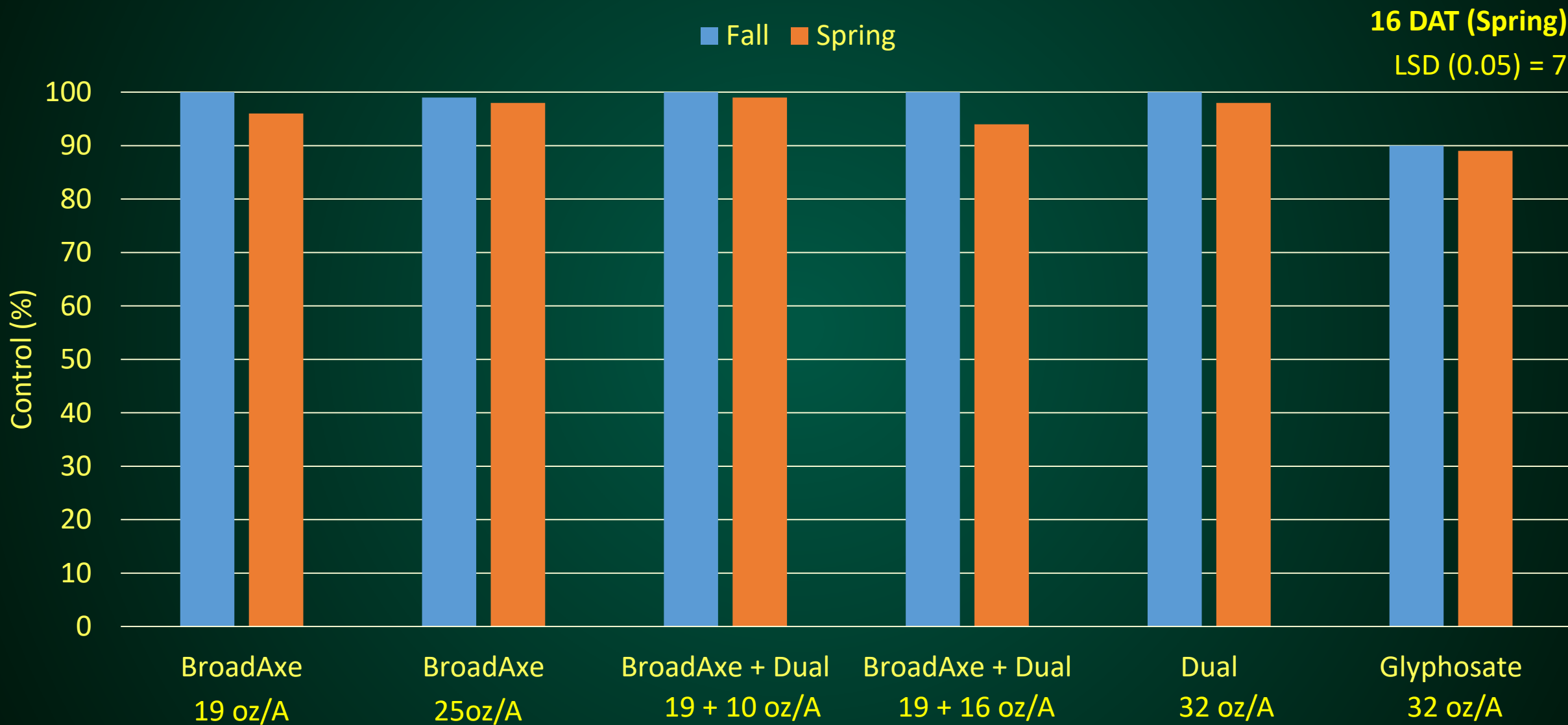
Fall vs Spring application of Dual II Magnum and BroadAxe in Field Pea, 2018

- Compared fall vs spring applied PRE treatments with glyphosate alone
 - Glyphosate (32 oz) + BroadAxe (19 oz)
 - Glyphosate (32 oz) + BroadAxe (25 oz)
 - Glyphosate (32 oz) + BroadAxe (19 oz) + Dual II Magnum (10 oz)
 - Glyphosate (32 oz) + BroadAxe (19 oz) + Dual II Magnum (16 oz)
 - Glyphosate (32 oz) + Dual II Magnum (32 oz)
 - Glyphosate (32 oz) fall only, spring only, and fall and spring
- Treatments applied on October 17, 2017 or May 5, 2018
- Peas planted on May 3, 2018
- Rainfall of 0.92 inches in 1st week after spring herbicide application
- Rainfall of 1.61 inches in 1st month after spring herbicide application

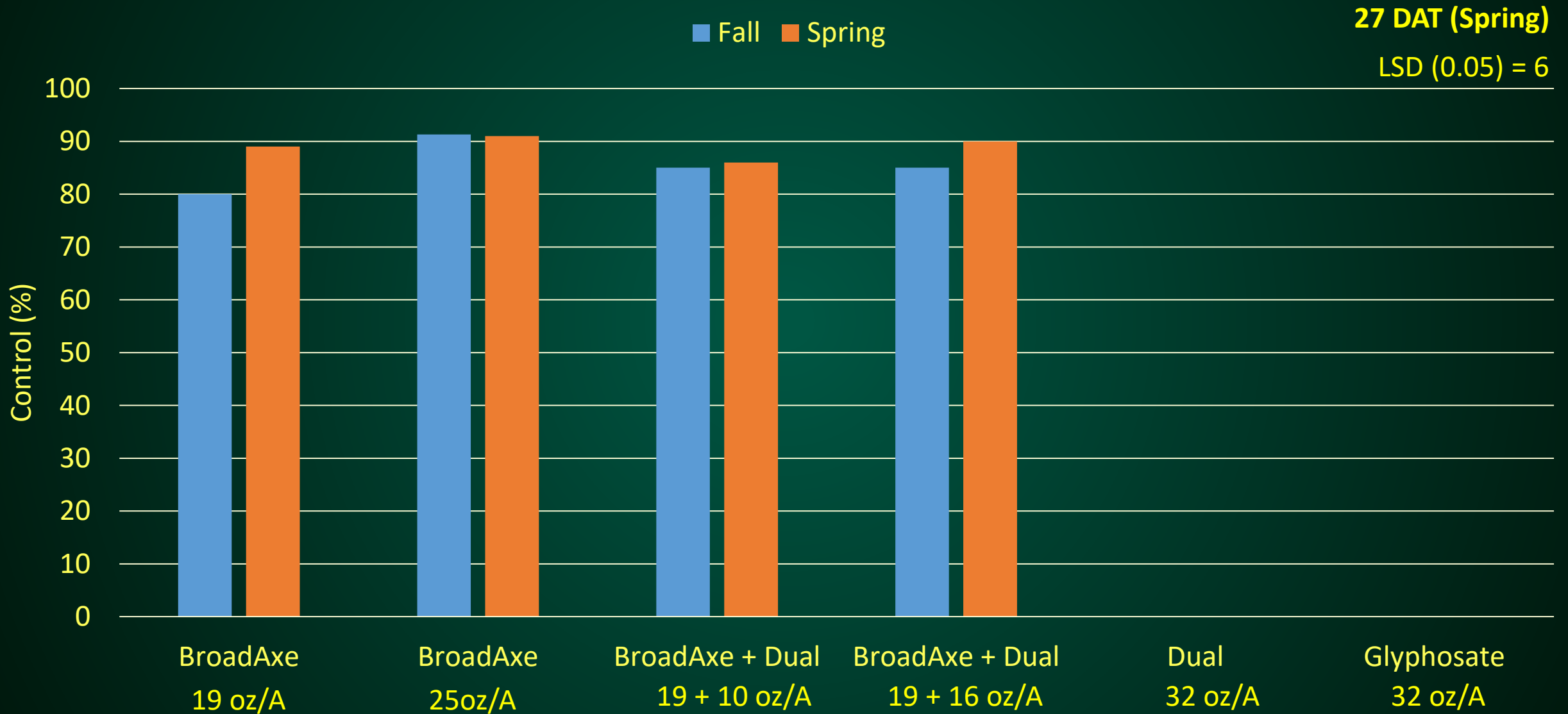
Downy brome control with fall vs spring applied herbicides



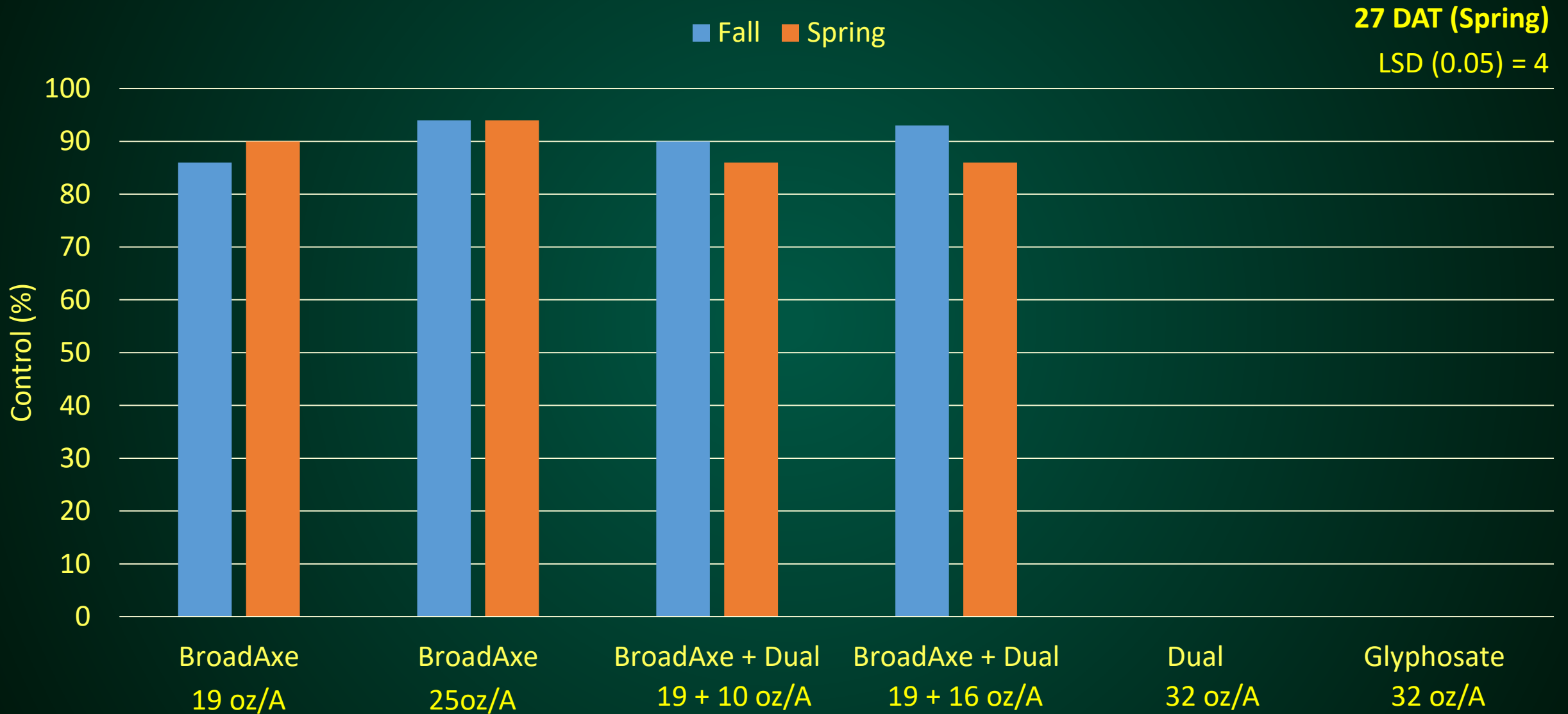
Shepherd's purse control with fall vs spring applied herbicides



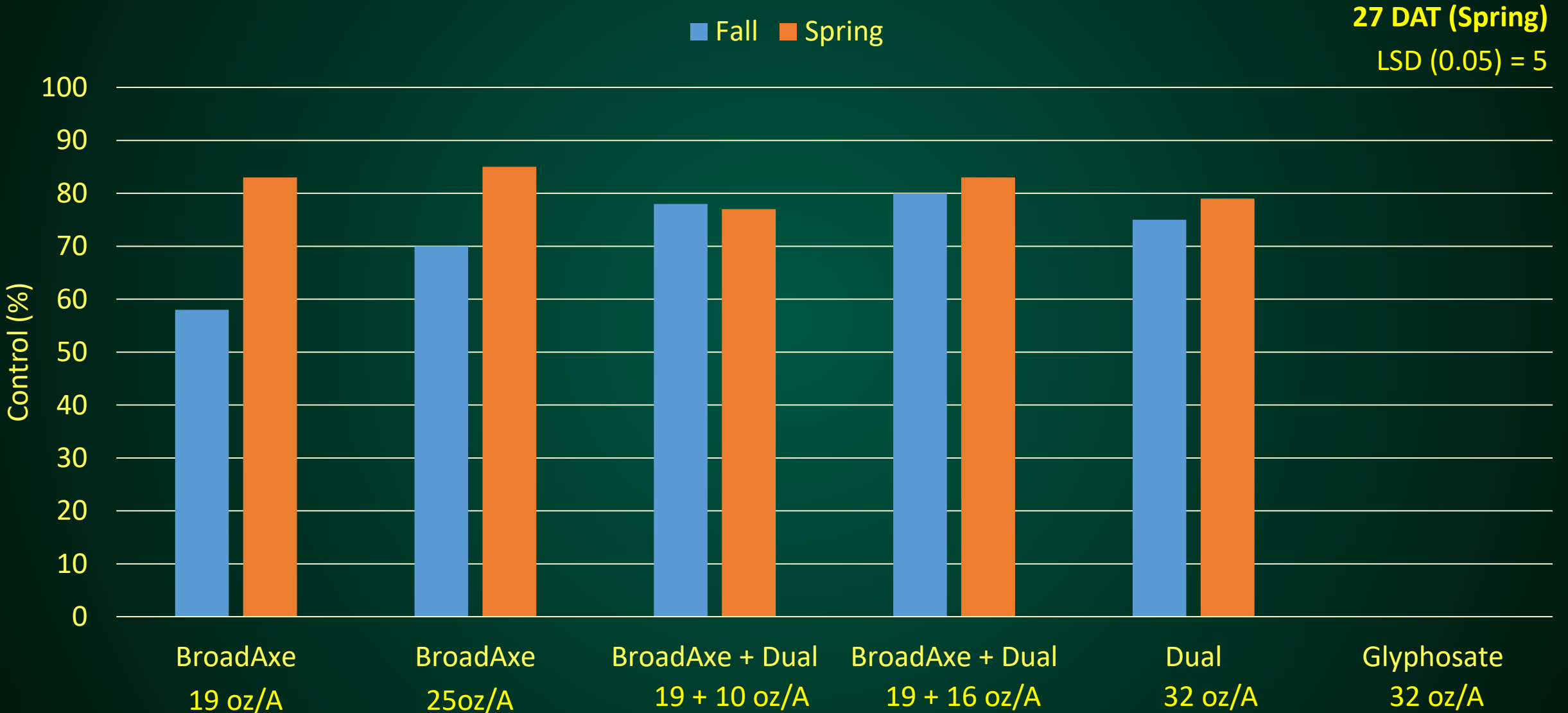
Kochia control with fall vs spring applied herbicides



Lambsquarters control with fall vs spring applied herbicides



Green foxtail control with fall vs spring applied herbicides





27 DAT (Spring)

Untreated Control



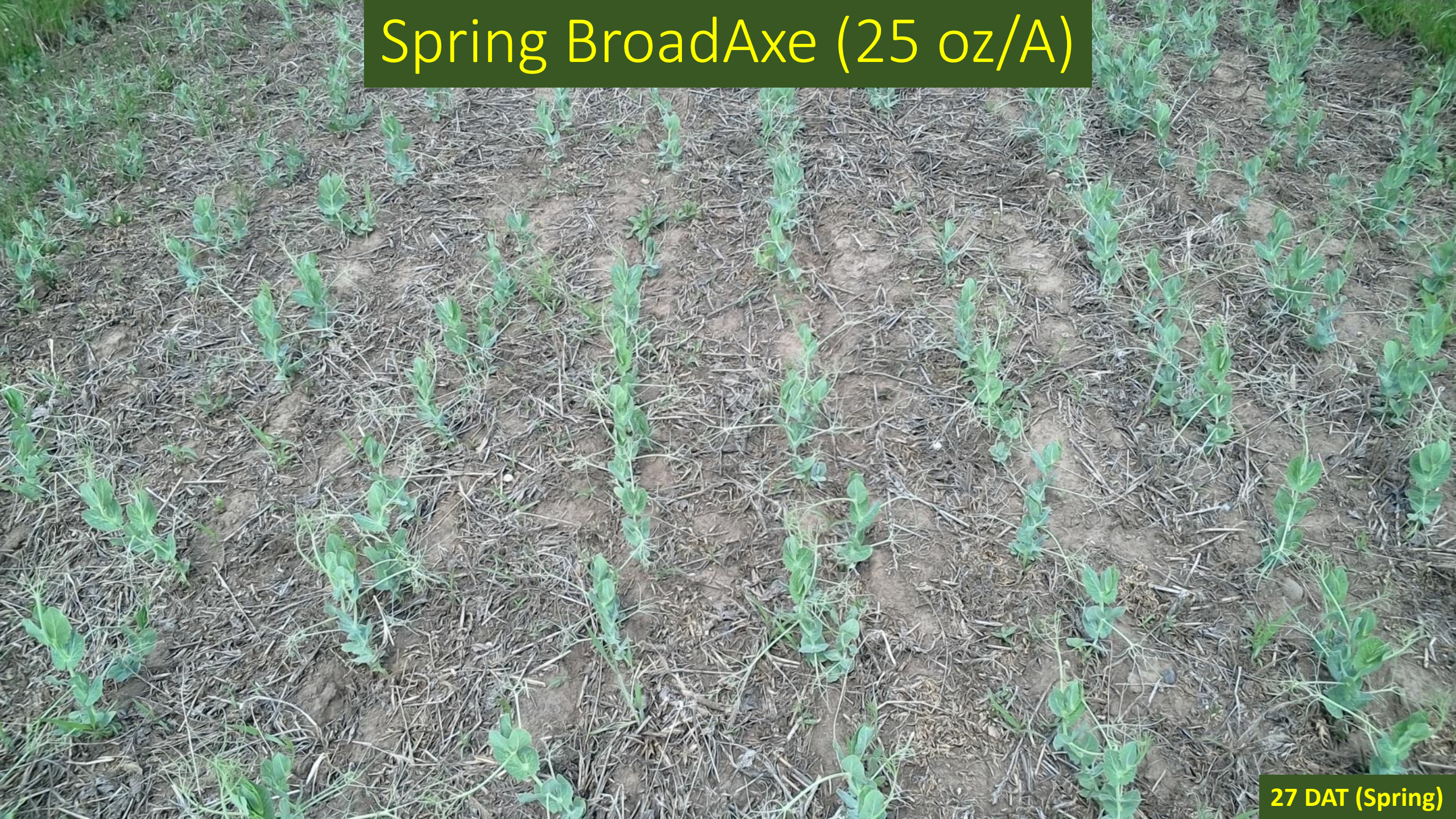
27 DAT (Spring)

Fall BroadAxe (25 oz/A)



27 DAT (Spring)

Spring BroadAxe (25 oz/A)



27 DAT (Spring)

Fall + Spring Glyphosate (32 oz/A)



27 DAT (Spring)

Fall applications of preemergence herbicides

- Ensures that herbicide is activated by rainfall prior to spring planting
- Might lose some activity of some herbicides
 - Metolachlor has a shorter residual than sulfentrazone
- Can be applied while controlling downy brome in the fall
- Need to plan ahead to what you will be planting
 - You can't plant wheat or canola after Broadaxe or Dual applications
- May need an in-crop application for summer annual grass control