

DRY EDIBLE BEAN

Herbicide	Product/A (ai/A)	Weeds	When to Apply	Remarks and Paragraphs
Refer to page 6 for Fall or Spring Early Preplant Herbicides.				
Soil-Applied and some POST-Applied Herbicides				
Eptam (EPTC ⁸)	3.5 to 4.5 pt EC 15 to 20 lb G (3 to 4 lb)	Grass and some broadleaf weeds.	PPI.	PPI immediately after application. Apply with other soil-applied herbicides for greater weed control. A1-2 B1 F1-2
Prowl Prowl H2O (pendimethalin ³)	2.4 to 3.6 pt 3.3EC 2.1 to 3 pt 3.8ACS (1 to 1.5 lb)	Poor wild oat and no wild mustard control.	PPI. Fall or Spring.	PPI within 24 hours after application. Apply fall applications when soil temperature is less than 45 F to reduce fall herbicide degradation. Adjust rate for soil type. Use EC formulation in spring and 10G formulation in fall for more consistent herbicide activation in soil. Refer to label for tank-mixtures. A1-2 B1-2 B7 E11
Treflan / generic trifluralin ³	1 to 2 pt EC 5 to 10 lb 10G (0.5 to 1 lb)			
Sonalan (ethalfluralin ³)	1.5 to 4.5 pt EC (0.55 to 1.69 lb) 5.5 to 11.5 lb 10G (0.55 to 1.15 lb)			
Dual/II/Magnum (S/metolachlor ¹⁵)	1 to 2 pt EC (0.95 to 1.9 lb)	Grass and some broadleaf weeds.	Shallow PPI or PRE.	Shallow PPI improves consistency of weed control. PRE requires precipitation for herbicide activation. Adjust rate for soil type and OM. Allow a 70 day PHI. A1-2 B1 F3
Outlook / generic dimethenamid¹⁵	10 to 21 fl oz EC (0.47 to 1 lb)		Shallow PPI, PRE, or EPOST up to 3 rd trifoliolate.	
Spartan Elite (s-metolachlor ¹⁵ & sulfentrazone ¹⁴)	20 to 26 fl oz EC (0.98 to 1.28 lb & 1.75 to 2.25 oz)		Shallow PPI or PRE.	
Spartan Charge (carfentrazone ¹⁴ & sulfentrazone ¹⁴)	3.75 to 5.75 floz SE (0.16 to 0.25 oz & 1.48 to 2.26 oz)	Small-seeded broadleaf weeds.	Shallow PPI or PRE.	
Permit (halosulfuron ²) 	0.5 to 0.67 oz DF (0.38 to 0.5 oz)	Many broadleaf weeds and yellow nutsedge.	Shallow PPI, PRE, or POST up to dry bean flowering.	PRE requires precipitation for herbicide activation. POST: Apply with NIS at 1 to 2 qt/100 gal water. Permit: PRE controls additional weeds than POST, including pigweed and lambsquarters. Refer to label when tank-mixing with other herbicides. Will not control ALS resistant weeds. A3 A5-8 E8 F1
Pursuit (imazethapyr ²)	2 fl oz SL (0.5 oz)			
POST-Applied Herbicides				
Basagran 5L / generic bentazon⁶ + MSO adjuvant	0.4 to 1.6 pt SL / 0.5 to 2 pt applied 1 to 4 times. (0.25 to 1 lb)	Small broadleaf weeds and suppression of Canada thistle.	POST. Dry bean: After emergence. Broadleaf weeds: Small.	Non-residual, contact herbicide requiring >15 gpa and full sunlight. Add oil adjuvant at 1 to 2 pt/A. Maximum bentazon amount per season is 2 lb/A. Refer to E3 for additional information. A3 E3 F1 F6
Raptor (imazamox ²)	4 fl oz SL (0.5 oz)	Annual grass and broadleaf weeds. No control of ALS-resistant weeds.	POST. Drybean: 1 st trifoliolate but prior to flowering.	Add oil additive at 1 to 2 pt/A plus 28% UAN at 2 qt/A (except during high humidity). A3 A5-8 E10 F1
Varisto (bentazon ⁶ & imazamox ²)	11 to 21 fl oz SL (0.34 to 0.66 lb + 0.26 to 0.5 oz)	Small annual grass and broadleaf weeds and suppression of Canada thistle.	Weeds: Small. Allow a 30 day PHI.	Add oil adjuvant at 1 to 2 pt/A. Bentazon may be applied sequentially to improve weed control. Refer to E3 for additional information. A3 A5-8 E1 E3

DRY EDIBLE BEAN

Herbicide	Product/A (ai/A)	Weeds	When to Apply	Remarks and Paragraphs
Reflex (fomesafen ¹⁴)	0.75 pt EC (0.188 lb)	Small annual broadleaf weeds including ragweed, kochia, and nightshade.	Weeds: 1 to 3 inches tall. PHI: 45 days.	Contact herbicide requiring small weed size, >15 gpa, oil adjuvant at 1 to 2 pt/A, and full sunlight. Oil adjuvant will increase weed control and risk of crop injury. Refer to E4 for improved weed control. See label for list of approved counties. A3 E3 E5 F1 F5
Assure II Targa (quizalofop ¹)	7 to 12 fl oz EC (0.77 to 1.32 oz)	Annual grasses and quackgrass.	POST. Dry bean: PHI: Assure II, Poast, Select/Max = 30 days. Fusilade DX = 60 days.	Add oil adjuvant at 1 gal/100 gal water but not less than 1.25 pt/A. Refer to label for tank-mix options. Refer to Remarks in the POST grass herbicide section under Soybean for methods to avoid antagonism and reduced grass control from broadleaf herbicides. A3 A5-6 E1-2
Fusilade DX (fluazifop ¹)	5 to 12 fl oz EC 1.25 to 3 oz)			
Poast (sethoxydim ¹)	0.5 to 1.5 pt EC (0.1 to 0.3 lb)	Annual grasses.	Grass: Refer to soybean section on page 27.	
Select Max 1EC Select 2EC Shadow 3EC (clethodim ¹)	9 to 16 fl oz EC 4 to 8 fl oz EC 2.66 to 5.33 EC (1 to 2 oz)	Annual grasses and quackgrass.		
NDSU Dry Bean Tank-Mix				
Basagran 5L / bentazon⁶ 4L + Raptor² + Reflex¹⁴ + Select/clethodim¹ + MSO adjuvant	0.4 to 0.56 pt SL / 0.5 to 0.67 pt SL + 1 fl oz SL + 2 to 4 fl oz EC + 2 fl oz EC + 1 to 1.5 pt/A	Grass and broadleaf weeds, including kochia, pigweed, and nightshade. May not control wild buckwheat or ragweed >2 inches	POST. Weeds. Small. Must be less than 1 to 2 inches tall.	User assumes all risk of inadequate weed control when using this reduced-rate treatment. MSO adjuvant is required. Repeat application 7 to 10 days later with some or all herbicides in the tank-mix to kill uncontrolled weeds and control successive weed flushes. Reduced herbicide rates cause resistant weeds - scout weed control often and hand-pull any escaped weeds or small patches of weeds that could be resistant. Refer to E3-4 for additional information. A3 A5-8 E3 E5 E10 F1 F4-6
Varisto SL Basagran 5L Basagran 4L Raptor	5.25 fl oz contains 4.2 fl oz or 5.25 fl oz + 1 fl oz			
Dry Bean Preharvest / Desiccation Herbicides				
Glyphosate ⁹	Up to 0.75 lb ae	Harvest aid/ Weed control.	Prior to harvest. Pods = yellow and leather texture. Seed = hard dough stage with <30% moisture. PHI = 7 days.	Do not apply to dry bean grown for seed because reduced germination/vigor may occur. Use only labeled formulations. Add AMS at 8.5 lb/100 gal. Non-selective, non-residual, translocated, foliar herbicide. A3-7 B1 B8
Aim + MSO oil adjuvant (carfentrazone)	1 to 6 oz SL + 1 qt/A (0.256 to 1.5 oz)	Dry bean and weed desiccant.	Prior to harvest. >80% pods yellow/brown. >70% leaves lost green color. PHI: Aim = 0 days. paraquat = 7 days. Sharpen = 2 days. Valor = 5 days.	Contact herbicides require >15 gpa and full sunlight. Apply at >10 gpa for ground and >5 gpa for aerial application. Apply Aim, Sharpen and Valor with AMS at 8.5 to 17 lb/100 gal water or UAN at 2.5 gal/100 gal water and with glyphosate or paraquat for weed desiccation. Glyphosate improves weed control from Sharpen and Valor but antagonism may occur on biennial and perennial weeds. Do not apply Sharpen to dry bean grown for seed because reduced germination/vigor may occur. B11-12 E13
Paraquat²² + NIS	1.2 to 2 pt 2SL 0.8 to 1.3 pt 3SL (0.3 to 0.5 lb)			
Sharpen + MSO adjuvant (saflufenacil¹⁴)	1 to 2 fl oz SC + 1 to 1.5 pt/A (0.36 to 0.72 oz)			
Valor SX Valor EZ + MSO adjuvant (flumioxazin¹⁴)	2 to 3 oz WDG 2 to 3 fl oz SC + 2 pt/A (1 to 1.53 oz)			