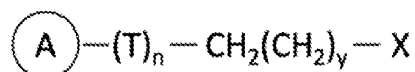


Claims:

1. A Compound having the structure



or a salt thereof, wherein:

A is five, six or nine-membered ring comprising from 1 to 3 heteroatoms; wherein each of the heteroatoms is independently selected from the group consisting of N, S, and O; and wherein one or more of the carbon atoms of the ring are optionally substituted with R₃, R₄, R₆ and R₇; and wherein each of R₃, R₄, R₆ or R₇ is independently selected from and an electron withdrawing group (EWG) or an electron donating group (EDG); wherein when R₃, R₄, R₆ or R₇ is EDG, at least one carbon of the ring is substituted with EWG; and wherein the 1-3 heteroatoms of the ring are N or S, each independently is optionally substituted with R₃, R₄, R₆ and R₇;

T is selected from the group consisting of sulfonyl, ammonium, alkylamine; arylamine, phosphonium, nitro, cyano, dihalomethyl, acyl, formyl, haloformyls, carboxyl, alkoxy carbonyl, and aminocarbonyl;

n is 0 or 1;

y is 0 to 8;

X is



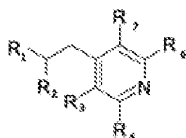
wherein R₁ is selected from the group consisting of is selected from the group consisting of carboxyl group, carbamoyl group, ester with saturated or non-saturated alcohols with straight, branched, cyclic chain or aromatic chain, ethylene glycol, polyethylene glycol, propylene

glycol, polypropylene glycol, carboxamide substituted with straight, branched, cyclic aliphatic chain, cyclic aromatic chain, ethylene glycol, polyethylene glycol, propylene glycol, polypropylene glycol, sulfonamide, and phosphoramidate; and wherein R₂ is selected from the group consisting of optionally substituted primary amine, secondary amine, tertiary amine, carboxamide, sulfonamide, and phosphoramidate.

2. The compound of claim 1, wherein A is selected from the group consisting of pyrrole, pyrazole, imidazole, triazole, thiophene, dithiole, trithiole, thiazole, dithiazole, trithiazolidine, thiadiazole, dithiadiazole, thiatriazole, oxazole, furan, oxathiole, pyridine, pyridazine, pyrimidine, pyrazine, triazine, thiazine, dithiazine, thiadiazine, 2H-1,3,4,5-thiatriazine, dithiadiazine, pyrrolopyridine, pyrrolopyrimidine, pyrrolotriazine, thiopyranopyrrole, pyrrolothiazine, pyrrolodithiazine, and thienopyridine.
3. The compound of claim 2, wherein A is selected from the group consisting of thiophene, 1H-pyrazole, 2H-1,3-dithiole, 3H-1,2-dithiole, 1H-pyrrole, 2H-1,2,3-triazole, 1H-1,2,4-triazole, 1,3-thiazole, 1,2,5-thiadiazole, 1,2,4-thiadiazole, 1,3-oxazole, furan, and pyridine.
4. The compound of any one of claims 1 to 3, wherein EWG is selected from the group consisting of triflyl (trifluoromethanesulfonyl), trihalide, cyano, sulfonate, nitro, ammonium, quaternary amine, aldehyde, ketone, carboxylic acid, ester, amide, and halide.
5. The compound of any one of claims 1 to 4, wherein EDG is selected from the group consisting of phenoxide, tertiary amine, secondary amine, primary amine, ether, alkyl, phenyl and vinyl.
6. The compound of any one of claims 1 to 5, wherein R₂ is selected from the group consisting of primary, secondary and

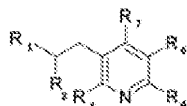
tertiary amine substituted with a group selected from hydrogen, an aliphatic compound with straight or branched chain, an aliphatic compound with non-aromatic ring, straight or branched-chain alcohol, alcohol with non-aromatic ring, carboxylic acid, phosphoric acid, phosphonic acid, terminal carbon of phosphonate, ethylene glycol, polyethylene glycol, propylene glycol and polypropylene glycol.

7. The compound of any one of claims 1 to 6, wherein R₂ is selected from the group consisting of carboxamide with saturated or non-saturated straight, branched or cyclic chain, sulfonamide, and phosphoramidate.
8. The compound of any one of claims 1 to 7, having the structure:



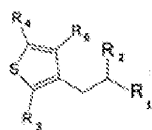
wherein R₁ is COOH, COOCH₃, COOC₂H₅, COOC₃H₇; R₂ is NH₂; R₃ and R₇ are independently selected from H, CF₃, CCl₃, Cl, and F; and R₄ and R₆ are independently selected from H, Cl, and Br.

9. The compound of any one of claims 1 to 7, having the structure:



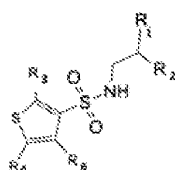
wherein R₁ is selected from COOH, COOCH₃, COOC₂H₅, and COOC₃H₇; R₂ is NH₂; R₃ and R₄ are independently selected from H, Br and Cl; and R₆ and R₇ are independently selected from H, Cl, NO₂, CF₃, and CCl₃.

10. The compound of any one of claims 1 to 7, having the structure:



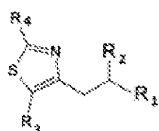
wherein R₁ is selected from COOH, COOCH₃, COOC₂H₅, COOC₄H₉, CONHCH₂COOH, and COO(CH₂)₃CH₃; R₂ is selected from NH₂, NHCOCH₃, NHCO, and NH(CH₂)₂O(CH₂)₂OH; R₃ and R₄ are independently selected from H, Cl, Br, CN, CHF₂, CF₃, CCl₃; and R₆ is H or CF₃.

11. The compound of any one of claims 1 to 7, having the structure:



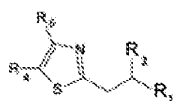
wherein R₁ is selected from COOH, COOCH₃, COOC₂H₅, COOC₅H₁₁, and COO(CH₂)₂(CH₂)₂CH₃; R₂ is NH₂; R₃ and R₄ are independently selected from H, Br, and Cl; and R₆ is selected from H, F, Cl, Br, CF₃, CCl₃.

12. The compound of any one of claims 1 to 7, having the structure:



wherein R₁ is selected from COOH, COOCH₃, COOC₂H₅, COOC₅H₁₁, and COO(CH₂)₂(CH₂)₂CH₃; R₂ is selected from NH₂, NHCOCH₃, or NHCOC₂H₅; R₃ and R₄ are each independently selected from H, Br, Cl, and NH₂.

13. The compound of any one of claims 1 to 7, having the structure:



wherein R₁ is selected from COOH, COOCH₃, COOC₂H₅, COOC₅H₁₁, and COO(CH₂)₂(CH₂)₂CH₃; R₂ is selected from NH₂, NHCOCH₃, or

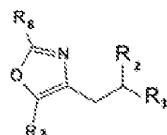
NHCOC₂H₅; R₄ and R₆ are each independently selected from H, Br, Cl, CF₃, CHF₂, and CCl₃.

14. The compound of any one of claims 1 to 7, having the structure:



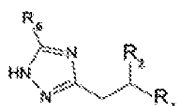
wherein R₁ is selected from the group consisting of COOH; R₂ is NH₂; and R₆ is H.

15. The compound of any one of claims 1 to 7, having the structure:



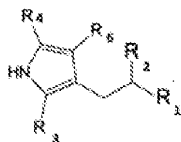
wherein R₁ is selected from the group consisting of OH; R₂ is NH₂; and R₃ and R₆ are both H.

16. The compound of any one of claims 1 to 7, having the structure:



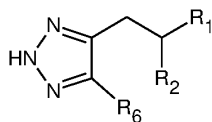
wherein R₁ is selected from COOH, COOCH₃, COOC₂H₅, COOC₅H₁₁, and COO(CH₂)₂(CH₂)₂CH₃; R₂ is selected from NH₂, NHC(O)CH₃, or NHC(O)C₂H₅; and R₆ is selected from H, Br, Cl, CF₃, CCl₃, and NH₂.

17. The compound of any one of claims 1 to 7, having the structure:



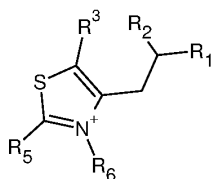
wherein R₁ is OH; R₂ is NH₂; and R₃, R₄ and R₆ are independently selected from H, Br, Cl, CF₃, CCl₃, and NH₂.

18. The compound of any one of claims 1 to 7, having the structure:



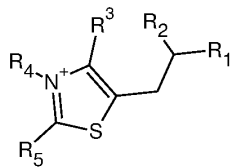
wherein R₁ is selected from COOH, COOCH₃, COOC₂H₅, COOC₅H₁₁, and COO(CH₂)₂(CH₂)₂CH₃; R₂ is selected from NH₂, NHCOCH₃, or NHCOC₂H₅; and R₆ is selected from H, Br, Cl, CF₃, CCl₃, and NH₂.

19. The compound of any one of claims 1 to 7, having the structure:



wherein R₁ is selected from COOH, COOCH₃, COOC₂H₅, COOC₅H₁₁, and COO(CH₂)₂(CH₂)₂CH₃; R₂ is selected from NH₂, NHCOCH₃, or NHCOC₂H₅; R₃ and R₅ are independently selected from H, Br, Cl, CF₃, CCl₃; and R₆ is selected from CH₃, OH and NH₂.

20. The compound of any one of claims 1 to 7, having the structure:

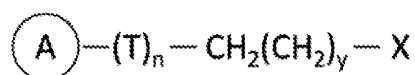


wherein R₁ is selected from COOH, COOCH₃, COOC₂H₅, COOC₅H₁₁, and COO(CH₂)₂(CH₂)₂CH₃; R₂ is selected from NH₂, NHCOCH₃, or NHCOC₂H₅; R₃ and R₅ are independently selected from H, Br, Cl, CF₃, CCl₃; and R₄ is selected from CH₃, OH and NH₂.

21. An agricultural composition comprising the compound of any one of claims 1 to 20 and at least one agriculturally acceptable carrier.
22. The agricultural composition of claim 21, further comprising at least one crop protection agent.
23. The agricultural composition of claim 22, wherein the at least one crop protection agent is selected from the group consisting of fungicide, insecticide, herbicide, and plant growth regulator.
24. The agricultural composition of claim 23, wherein the crop protection agent is herbicide.
25. The agricultural composition of claim 23, wherein the crop protection agent is plant growth regulator.
26. The agricultural composition of claim 24, wherein the at least one crop protection agent is selected from the group consisting of atrazine, terbutylazine, (S)-metolachlor, metolachlor, terbutryn, simazine, dimethenamid, (S)-dimethenamid, flufenacet, acetochlor, alachlor, isoxaflutole, isoxachlortole, mesotrione, sulcotrione, metosulam, flumetsulam, pendimethalin, bromoxynil, bentazone, carfentrazone-ethyl, clomazone, nicosulfuron, rimsulfuron, halosulfuron-methyl, metribuzin, flumiclorac-pentyl, prosulfuron, primisulfuron-methyl, dicamba, fluthiacet-methyl, pyridate, 2,4-D, clopyralide, diflufenzopyr, fluroxypyr, MCPA, MCPB, mecoprop (MCP), metobenzuron, thifensulfuron-methyl, aclonifen, EPTC, glyphosate, glufosinate, sulfosate, cyanazine, propaquizafop, metamitron, pyramin, phenmedipham, desmedipham, ethofumesate, triasulfuron, chloridazon, lenacil, triallate, fluazifop, sethoxydim, quizalofop, clopyralide, clethodim, oxasulfuron, acifluorfen, benazolin-ethyl, sulfentrazone, chlorimuron-ethyl, cloransulam-methyl, fomesafen, imazamox, imazaquin, imazethapyr, imazapyr, lactofen, fenoxaprop (P-ethyl),

thidiazuron, tribufos, trifluralin, dimethachlor, napropamide, quinmerac, metazachlor, carbetamide, dimefuron, propyzamide, ethametsulfuron-methyl, tebutam, fluometuron, prometryn, norflurazon, pyriithiobac-sodium, MSMA, DSMA, diuron, flurochloridone, dithiopyr, thiazopyr, oxyfluorfen, ethalfluralin, clodinafop, amidosulfuron, diclofop-methyl, diflufenican, ethoxysulfuron, fentrazamide, flazasulfuron, florasulam, fluazolate, flucarbazone, flupyrsulfuron-methyl sodium, flurtamone, iodosulfuron, isoproturon, chlortoluron, chlorsulfuron, metsulfuron-methyl, sulfosulfuron, tribenuron-methyl, 2,4-DB, 2,4-DP, bifenox, flamprop-M, imazamethabenz-methyl, ioxynil, tralkoxydim, fluoroglycofen-ethyl, methabenzthiazuron, isoxaben, prosulfocarb, difenzoquat-metilsulfate, pretilachlor, cinosulfuron, fenclorim, bensulfuron-methyl, imazosulfuron, pyrazosulfuron-ethyl, azimsulfuron, esprocarb, mefenacet, molinate, propanil, pyrazolate, cyhalofop-butyl, bispyribac-sodium, pyriminobac-methyl, cafenstrole, oxadiargyl, oxadiazon, bromobutide, MY-100, dymron, NB 061, MK243, HW-52, AC 014, ametryn, hexazinone, asulam, azafenidin, tebuthiuron, ethametsulfuron-methyl, or a combination thereof.

27. A method of controlling undesired plant growth comprising applying to the locus of said undesired plant growth the agricultural composition of any one of claims 21 to 26.
28. A method of controlling undesired plant growth, comprising applying to the locus of the undesired plant growth a herbicidally effective amount of a compound having the structure



or a salt thereof, wherein:

A is five, six or nine-membered ring comprising one or more heteroatoms; wherein each of the heteroatoms is independently selected from the group consisting of N, S, and O; and wherein one or more of the carbon atoms of the ring is optionally substituted with R₃, R₄, R₆ and R₇; and wherein each of R₃, R₄, R₆ or R₇ is independently selected from and an electron withdrawing group (EWG) or an electron donating group (EDG); wherein when R₃, R₄, R₆ or R₇ is EDG, at least one carbon of the ring is substituted with EWG; and wherein, when one or more heteroatoms of the ring is N or S, each independently is optionally substituted with R₃, R₄, R₆ and R₇;

T is selected from the group consisting of sulfonyl, ammonium, alkylamine; arylamine, phosphonium, nitro, cyano, dihalomethyl, acyl, formyl, haloformyls, carboxyl, alkoxycarbonyl, and aminocarbonyl;

n is 0 or 1;

y is 0 to 8;

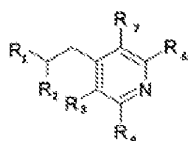
X is



wherein R₁ is selected from the group consisting of carboxyl group, carbamoyl group, ester with saturated or non-saturated alcohols straight, branched, cyclic chain or aromatic chain, ethylene glycol, polyethylene glycol, propylene glycol, polypropylene glycol, carboxamide substituted with straight, branched, cyclic aliphatic chain, cyclic aromatic chain, ethylene glycol, polyethylene glycol, propylene glycol, polypropylene glycol, sulfonamide, and phosphoramidate; and wherein R₂ is selected from the group consisting of optionally substituted primary amine, secondary amine, tertiary amine, carboxamide, sulfonamide, and phosphoramidate.

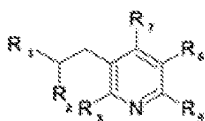
29. The method of claim 28, wherein A is selected from the group consisting of pyrrole, pyrazole, imidazole, triazole, thiophene, dithiole, trithiole, thiazole, dithiazole, trithiazolidine, thiadiazole, dithiadiazole, thiatriazole, oxazole, furan, oxathiole, pyridine, pyridazine, pyrimidine, pyrazine, triazine, thiazine, dithiazine, thiadiazine, 2H-1,3,4,5-thiatriazine, dithiadiazine, pyrrolopyridine, pyrrolopyrimidine, pyrrolotriazine, thiopyranopyrrole, pyrrolothiazine, pyrrolodithiazine, and thienopyridine.
30. The method of claim 28 or 29, wherein A is selected from the group consisting of thiophene, 2H-1,3-dithiole, 3H-1,2-dithiole, 1H-pyrrole, 2H-1,2,3-triazole, 1H-1,2,4-triazole, 1,3-thiazole, 1,2,5-thiadiazole, 1,2,4-thiadiazole, 1,3-oxazole, furan, and pyridine.
31. The method of any one of claims 28 to 30, wherein EWG is selected from the group consisting of triflyl (trifluoromethanesulfonyl), trihalide, cyano, sulfonate, nitro, ammonium, quaternary amine, aldehyde, ketone, carboxylic acid, ester, amide, and halide.
32. The method of any one of claims 28 to 31, wherein EDG is selected from the group consisting of phenoxide, tertiary amine, secondary amine, primary amine, ether, alkyl, phenyl and vinyl.
33. The method of any one of claims 28 to 32, wherein R₂ is selected from the group consisting of primary, secondary and tertiary amine substituted with a group selected from hydrogen, an aliphatic compound with straight or branched chain, an aliphatic compound with non-aromatic ring, straight or branched-chain alcohol, alcohol with non-aromatic ring, phosphoric acid, phosphonic acid, terminal carbon of phosphonate, ethylene glycol, polyethylene glycol, propylene glycol and polypropylene glycol.

34. The method of any one of claims 28 to 33, wherein R₂ is selected from the group consisting of carboxamide with saturated or non-saturated straight, branched or cyclic chain, sulfonamide, and phosphoramidate.
35. The method of any one of claims 28 to 34 comprising applying to the locus of the undesired plant growth a herbicidally effective amount of a compound having the structure



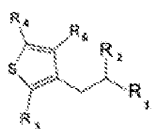
wherein R₁ is COOH, COOCH₃, COOC₂H₅, COOC₃H₇; R₂ is NH₂; R₃ and R₇ are independently selected from H, CF₃, CCl₃, Cl, and F; and R₄ and R₆ are independently selected from H, Cl, and Br.

36. The method of any one of claims 28 to 34 comprising applying to the locus of the undesired plant growth a herbicidally effective amount of a compound having the structure



wherein R₁ is selected from COOH, COOCH₃, COOC₂H₅, and COOC₃H₇; R₂ is NH₂; R₃ and R₄ are independently selected from H, Br and Cl; and R₆ and R₇ are independently selected from H, Cl, NO₂, CF₃, and CCl₃.

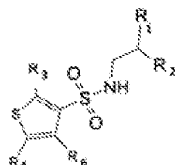
37. The method of any one of claims 28 to 34 comprising applying to the locus of the undesired plant growth a herbicidally effective amount of a compound having the structure



wherein R₁ is selected from COOH, COOCH₃, COOC₂H₅, COOC₄H₉, CONHCH₂COOH, and COO(CH₂)₃CH₃; R₂ is selected from NH₂,

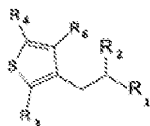
NHCOCH₃, NHCO, and NH(CH₂)₂O(CH₂)₂OH; R₃ and R₄ are independently selected from H, Cl, Br, CN, CHF₂CF₃, CCl₃; and R₆ is H or CF₃.

38. The method of any one of claims 28 to 34 comprising applying to the locus of the undesired plant growth a herbicidally effective amount of a compound having the structure:



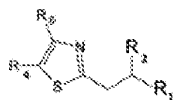
wherein R₁ is selected from COOH, COOCH₃, COOC₂H₅, COOC₅H₁₁, and COO(CH₂)₂(CH₂)₂CH₃; R₂ is NH₂; R₃ and R₄ are independently selected from H, Br, and Cl; and R₅ is selected from H, F, Cl, Br, CF₃, CCl₃.

39. The method of any one of claims 28 to 34 comprising applying to the locus of the undesired plant growth a herbicidally effective amount of a compound having the structure:



wherein R₁ is selected from COOH, COOCH₃, COOC₂H₅, COOC₅H₁₁, and COO(CH₂)₂(CH₂)₂CH₃; R₂ is selected from NH₂, NHCOCH₃, or NHCOC₂H₅; R₃ and R₄ are each independently selected from H, Br, Cl, and NH₂.

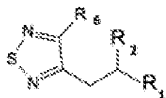
40. The method of any one of claims 28 to 34 comprising applying to the locus of the undesired plant growth a herbicidally effective amount of a compound having the structure:



wherein R₁ is selected from COOH, COOCH₃, COOC₂H₅, COOC₅H₁₁, and COO(CH₂)₂(CH₂)₂CH₃; R₂ is selected from NH₂, NHCOCH₃, or

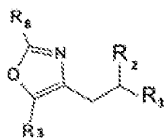
NHCOC₂H₅; R₄ and R₆ are each independently selected from H, Br, Cl, CF₃, CHF₂, and CCl₃.

41. The method of any one of claims 28 to 34 comprising applying to the locus of the undesired plant growth a herbicidally effective amount of a compound having the structure:



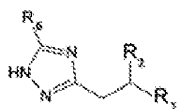
wherein R₁ is COOH; R₂ is NH₂; and R₆ is H.

42. The method of any one of claims 28 to 34 comprising applying to the locus of the undesired plant growth a herbicidally effective amount of a compound having the structure:



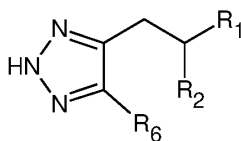
wherein R₁ is OH; R₂ is NH₂; and R₃ and R₆ are both H.

43. The method of any one of claims 28 to 34 comprising applying to the locus of the undesired plant growth a herbicidally effective amount of a compound having the structure:



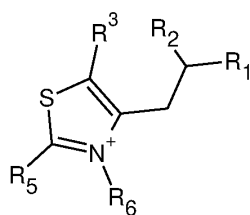
wherein R₁ is selected from COOH, COOCH₃, COOC₂H₅, COOC₅H₁₁, and COO(CH₂)₂(CH₂)₂CH₃; R₂ is selected from NH₂, NHCOC₂H₅, or NHCOC₂H₅; and R₆ is selected from H, Br, Cl, CF₃, CCl₃, and NH₂.

44. The method of any one of claims 28 to 34 comprising applying to the locus of the undesired plant growth a herbicidally effective amount of a compound having the structure:



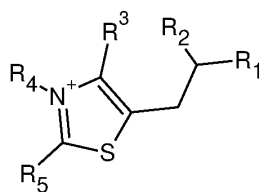
wherein R₁ is selected from COOH, COOCH₃, COOC₂H₅, COOC₅H₁₁, and COO(CH₂)₂(CH₂)₂CH₃; R₂ is selected from NH₂, NHCOCH₃, or NHCOC₂H₅; and R₆ is selected from H, Br, Cl, CF₃, CCl₃, and NH₂.

45. The method of any one of claims 28 to 34 comprising applying to the locus of the undesired plant growth a herbicidally effective amount of a compound having the structure



wherein R₁ is selected from COOH, COOCH₃, COOC₂H₅, COOC₅H₁₁, and COO(CH₂)₂(CH₂)₂CH₃; R₂ is selected from NH₂, NHCOCH₃, or NHCOC₂H₅; R₃ and R₅ are independently selected from H, Br, Cl, CF₃, CCl₃; and R₆ is selected from CH₃, OH and NH₂.

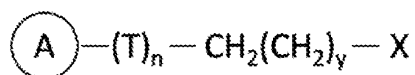
46. The method of any one of claims 28 to 34 comprising applying to the locus of the undesired plant growth a herbicidally effective amount of a compound having the structure:



wherein R₁ is selected from COOH, COOCH₃, COOC₂H₅, COOC₅H₁₁, and COO(CH₂)₂(CH₂)₂CH₃; R₂ is selected from NH₂, NHCOCH₃, or NHCOC₂H₅; R₃ and R₅ are independently selected from H, Br, Cl, CF₃, CCl₃; and R₄ is selected from CH₃, OH and NH₂.

47. The method of any one of claims 28 to 46, further comprising applying to the locus of the undesired plant growth at least one crop protection agent.

48. The method of claim 47, wherein the crop protection agent is selected from the group consisting of herbicides, fungicides, insecticides and plant growth regulators.
49. The method of claim 48, wherein the crop protection agent is herbicide.
50. The method of claim 49, wherein the crop protection agent is amino acid synthesis inhibitor herbicide.
51. The method of claim 50, wherein the amino acid synthesis inhibitor herbicide is selected from the group consisting of sulfonylurea herbicide, imidazolinone herbicide, sulfonamide herbicide and amino acid derivatives, or a combination thereof.
52. The method of claim 51, wherein the amino acid synthesis inhibitor herbicide is selected from the group consisting of imazamox, imazapic, imazethapyr, imazaquin, imazapyr and imazamethabenz, or a combination thereof.
53. The method of claim 51, wherein the amino acid synthesis inhibitor herbicide is selected from the group consisting of Chlorimuron, Primisulfuron, Thifensulfuron, Triasulfuron, Nicosulfuron, Metsulfuron, Tribenuron, Rimsulfuron and Triflusaluron or a combination thereof.
54. The method of claim 51, wherein the amino acid synthesis inhibitor herbicide is glyphosate.
55. The method of claim 50, wherein the crop protection agent is a plant growth regulator.
56. The method of claim 57, wherein the plant growth regulator is selected from the group consisting of dicamba, 2,4-D, clopyralid and fluroxypyr.
57. A method of controlling undesired plant growth comprising applying to the locus of the undesired plant growth:
- a. A first herbicide having the structure



or a salt thereof, wherein:

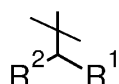
A is five, six or nine-membered ring comprising one or more heteroatoms; wherein each of the heteroatoms is independently selected from the group consisting of N, S, and O; and wherein one or more of the carbon atoms of the ring is optionally substituted with R₃, R₄, R₆ and R₇; and wherein each of R₃, R₄, R₆ or R₇ is independently selected from and an electron withdrawing group (EWG) or an electron donating group (EDG); wherein when R₃, R₄, R₆ or R₇ is EDG, at least one carbon of the ring is substituted with EWG; and wherein, when one or more heteroatoms of the ring is N or S, each independently is optionally substituted with R₃, R₄, R₆ and R₇;

T is selected from the group consisting of sulfonyl, ammonium, alkylamine; arylamine, phosphonium, nitro, cyano, dihalomethyl, acyl, formyl, haloformyls, carboxyl, alkoxy carbonyl, and aminocarbonyl;

n is 0 or 1;

y is 0 to 8;

X is



wherein R₁ is selected from the group consisting of carboxyl group, carbamoyl group, ester with saturated or non-saturated alcohols straight, branched, cyclic chain or aromatic chain, ethylene glycol, polyethylene glycol, propylene glycol, polypropylene glycol, carboxamide substituted with straight, branched, cyclic aliphatic chain, cyclic aromatic chain, ethylene glycol, polyethylene glycol, propylene glycol, polypropylene glycol, sulfonamide, and phosphoramidate; and wherein R₂

- is selected from the group consisting of optionally substituted primary amine, secondary amine, tertiary amine, carboxamide, sulfonamide, and phosphoramidate; and
- b. A second herbicide, to effectively control the undesired plant growth.
58. The method of claim 57, wherein the second herbicide is amino acid synthesis inhibitor herbicide.
59. The method of claim 58, wherein the second herbicide is selected from the group consisting of sulfonylurea herbicide, imidazolinone herbicide, sulfonamide herbicide and amino acid derivative.
60. The method of claim 57 to 59, wherein the second herbicide is selected from the group consisting of imazamox, imazapic, imazethapyr, imazaquin, imazapyr, imazamethabenz, Chlorimuron, Primisulfuron, Thifensulfuron, Triasulfuron, Nicosulfuron, Metsulfuron, Tribenuron, Rimsulfuron, Triflusaluron and Glyphosate.
61. The method of any one of claims 57 to 59, wherein the second herbicide is selected from the group consisting of atrazine, terbutylazine, (S)-metolachlor, metolachlor, terbutryn, simazine, dimethenamid, (S)-dimethenamid, flufenacet, acetochlor, alachlor, isoxaflutole, isoxachlortole, mesotrione, sulcotrione, metosulam, flumetsulam, pendimethalin, bromoxynil, bentazone, carfentrazone-ethyl, clomazone, nicosulfuron, rimsulfuron, halosulfuron-methyl, metribuzin, flumiclorac-pentyl, prosulfuron, primisulfuron-methyl, dicamba, fluthiacet-methyl, pyridate, 2,4-D, clopyralide, diflufenzopyr, fluroxypyr, MCPA, MCPB, mecoprop (MCP), metobenzuron, thifensulfuron-methyl, acetonif, EPTC, glyphosate, glufosinate, sulfosate, cyanazine, propaquizafop, metatriton, pyramin, phenmedipham, desmedipham, ethofumesate, triasulfuron, chloridazon, lenacil, triallate, fluazifop, sethoxydim, quizalofop, clopyralide, clethodim, oxasulfuron,

acifluorfen, benazolin-ethyl, sulfentrazone, chlorimuron-ethyl, cloransulam-methyl, fomesafen, imazamox, imazaquin, imazethapyr, imazapyr, lactofen, fenoxaprop(P-ethyl), thidiazuron, tribufos, trifluralin, dimethachlor, napropamide, quinmerac, metazachlor, carbetamide, dimefuron, propyzamide, ethametsulfuron-methyl, tebutam, fluometuron, prometryn, norflurazon, pyriithiobac-sodium, MSMA, DSMA, diuron, flurochloridone, dithiopyr, thiazopyr, oxyfluorfen, ethalfluralin, clodinafop, amidosulfuron, diclofop-methyl, diflufenican, ethoxysulfuron, fentrazamide, flazasulfuron, florasulam, fluazolate, flucarbazone, flupyrsulfuron-methyl sodium, flurtamone, iodosulfuron, isoproturon, chlortoluron, chlorsulfuron, metsulfuron-methyl, sulfosulfuron, tribenuron-methyl, 2,4-DB, 2,4-DP, bifenox, flamprop-M, imazamethabenz-methyl, ioxynil, tralkoxydim, fluoroglycofen-ethyl, methabenzthiazuron, isoxaben, prosulfocarb, difenzoquat-metilsulfate, pretilachlor, cinosulfuron, fencloirim, bensulfuron-methyl, imazosulfuron, pyrazosulfuron-ethyl, azimsulfuron, esprocarb, mefenacet, molinate, propanil, pyrazolate, cyhalofop-butyl, bispyribac-sodium, pyriminobac-methyl, cafenstrole, oxadiargyl, oxadiazon, bromobutide, MY-100, dymron, NB 061, MK243, HW-52, AC 014, ametryn, hexazinone, asulam, azafenidin, tebuthiuron, and ethametsulfuron-methyl.

62. The method of any one of claims 57 to 61 further comprising applying a third herbicide or a plant growth regulator.
63. A composition for controlling undesired plant growth comprising a mixture of:
 - a. a compound of any one of claims 1 to 22;
 - b. at least one herbicide selected from the group consisting of atrazine, terbutylazine, (S)-metolachlor, metolachlor, terbutryn, simazine, dimethenamid, (S)-dimethenamid, flufenacet, acetochlor,

alachlor, isoxaflutole, isoxachlortole, mesotrione, sulcotrione, metosulam, flumetsulam, pendimethalin, bromoxynil, bentazone, carfentrazone-ethyl, clomazone, nicosulfuron, rimsulfuron, halosulfuron-methyl, metribuzin, flumiclorac-pentyl, prosulfuron, primisulfuron-methyl, dicamba, fluthiacet-methyl, pyridate, 2,4-D, clopyralide, diflufenzopyr, fluroxypyr, MCPA, MCPB, mecoprop (MCPP), metobenzuron, thifensulfuron-methyl, aclonifen, EPTC, glyphosate, glufosinate, sulfosate, cyanazine, propaquizafop, metamitron, pyramin, phenmedipham, desmedipham, ethofumesate, triasulfuron, chloridazon, lenacil, triallate, fluazifop, sethoxydim, quizalofop, clopyralide, clethodim, oxasulfuron, acifluorfen, benazolin-ethyl, sulfentrazone, chlorimuron-ethyl, cloransulam-methyl, fomesafen, imazamox, imazaquin, imazethapyr, imazapyr, lactofen, fenoxaprop(P-ethyl), thidiazuron, tribufos, trifluralin, dimethachlor, napropamide, quinmerac, metazachlor, carbetamide, dimefuron, propyzamide, ethametsulfuron-methyl, tebutam, fluometuron, prometryn, norflurazon, pyriithiobac-sodium, MSMA, DSMA, diuron, flurochloridone, dithiopyr, thiazopyr, oxyfluorfen, ethalfluralin, clodinafop, amidosulfuron, diclofop-methyl, diflufenican, ethoxysulfuron, fentrazamide, flazasulfuron, florasulam, fluazolate, flucarbazone, flupyrsulfuron-methyl sodium, flurtamone, iodosulfuron, isoproturon, chlortoluron, chlorsulfuron, metsulfuron-methyl, sulfosulfuron, tribenuron-methyl, 2,4-DB, 2,4-DP, bifenox, flamprop-M, imazamethabenz-methyl, ioxynil, tralkoxydim, fluoroglycofen-ethyl, methabenzthiazuron, isoxaben, prosulfocarb, difenzoquat-metilsulfate, pretilachlor, cinosulfuron, fenclorim, bensulfuron-methyl, imazosulfuron,

- pyrazosulfuron-ethyl, azimsulfuron, esprocarb, mefenacet, molinate, propanil, pyrazolate, cyhalofop-butyl, bispyribac-sodium, pyriminobac-methyl, cafenstrole, oxadiargyl, oxadiazon, bromobutide, MY-100, dymron, NB 061, MK243, HW-52, AC 014, ametryn, hexazinone, asulam, azafenidin, tebuthiuron, ethametsulfuron-methyl, or a combination thereof; and
- c. at least one agriculturally acceptable carrier.
64. A composition for controlling undesired plant growth comprising a mixture of:
- a. a compound of any one of claims 1 to 22;
- b. at least one plant growth regulator; and
- c. at least one agriculturally acceptable carrier.
65. A compound selected from the group consisting of 2-amino-3-(thiophen-2-yl)propanoic acid; 2-amino-3-(thiophen-3-yl)propanoic acid; 2-amino-3-[(thiophene-3-sulfonyl)amino]propanoic acid; 2-amino-3-[(4-fluorothiophene-3-sulfonyl)amino]propanoic acid; methyl 2-amino-3-[(thiophene-3-sulfonyl)amino]propanoate; pentyl 2-amino-3-[(thiophene-3-sulfonyl)amino]propanoate; 3-(5-cyano-3-thienyl)alanine; 2-amino-3-[4-(trifluoromethyl)thiophen-2-yl]propanoic acid; 3-amino-3-(4-bromothiophen-3-yl)propanoic acid; 2-amino-3-(2,4,5-trimethylthiophen-3-yl)propanoic acid; butyl 2-amino-3-(thiophen-3-yl)propanoate; 2-amino-3-[(2,5-dichlorothiophene-3-sulfonyl)amino]propanoic acid; 2-amino-3-[(2,5-dichloro-4-methylthiophene-3-sulfonyl)amino]propanoic acid; 2-amino-3-(2-chlorothiophen-3-yl)propanoic acid; 2-amino-3-(2,5-dichlorothiophen-3-yl)propanoic acid; 2-amino-3-(5-chlorothiophen-3-yl)propanoic acid; 2-amino-3-(2,5-dihydro-1,3-thiazol-4-yl)propanoic acid; 2-amino-3-(1,3-thiazol-5-yl)propanoic acid; 2-amino-3-{[2,5-dichloro-4-(trifluoromethyl)thiophene-3-sulfonyl]amino}propanoic

acid; 2-amino-3-(2-amino-1,3-thiazol-4-yl)propanoic acid; methyl 2-amino-3-[(2,5-dichlorothiophene-3-sulfonyl)amino]propanoate; ethyl 2-amino-3-[(2,5-dichlorothiophene-3-sulfonyl)amino]propanoate; 2-propoxyethyl-2-amino-3-[(2,5-dichlorothiophene-3-sulfonyl)amino]propanoate; [2-(carboxyamino)-3-ethoxy-3-oxopropyl](2,5-dichlorothiophene-3-sulfonyl)carbamic acid; 2-amino-3-(2,5-dichloro-1,3-thiazol-4-yl)propanoic acid; 2-amino-3-(5-chloro-1,3-thiazol-4-yl)propanoic acid; 2-amino-3-(1,2,5-thiadiazol-3-yl)propanoic acid; 2-amino-3-(1,2,4-thiadiazol-5-yl)propanoic acid; 2-amino-3-(furan-3-yl)propanoic acid; 2-amino-3-(1,3-oxazol-4-yl)propanoic acid; 2-formamido-3-(thiophen-3-yl)propanoic acid; methyl 2-amino-3-(thiophen-3-yl)propanoate; ethyl 2-amino-3-(thiophen-3-yl)propanoate; [2-amino-3-(thiophen-3-yl)propanamido]acetic acid; 2-amino-N-[2-(2-hydroxyethoxy)ethyl]-3-(thiophen-3-yl)propenamide; ethyl 2-butanamido-3-(dichloro-1,3-thiazol-4-yl)propanoate; 2-butoxyethyl 2-acetamido-3-(2,5-dichloro-1,3-thiazol-4-yl)propanoate; 2-amino-3-(2,5-dibromothiophen-3-yl)propanoic acid; 2-amino-3-(5-nitrothiophen-3-yl)propanoic acid; butyl 3-(dichloro-1,3-thiazol-4-yl)-2-acetamidopropanoate; 2-ethoxyethyl 3-(dichloro-1,3-thiazol-4-yl)-2-acetamidopropanoate; 2-amino-3-[5-(trifluoromethyl)thiophen-3-yl]propanoic acid; (2S)-2-amino-3-(3,5-dioxo-1,2,4-oxadiazolidin-2-yl)propanoic acid; 2-amino-3-[(2,5-dibromothiophene-3-sulfonyl)amino]propanoic acid; 2-amino-3-(5-chloro-2-methylthiophen-3-yl)propanoic acid; 2-amino-3-(2-bromothiophen-3-yl)propanoic acid; 2-amino-3-(1,1-dioxo-116-thiolan-3-yl)propanoic acid; 2-amino-3-(thiolan-3-yl)propanoic acid; [2-amino-2-(thiophen-3-yl)ethyl]phosphonic acid; 2-amino-3-(2,5-dimethyl-1,1-dioxo-1H-116-thiophen-3-yl)propanoic acid; 3-(2,5-dioxo-

2,5-dihydrothiophen-3-yl)-2-(phosphonoamino)propanoic acid; 2-amino-3-[4-(trifluoromethyl)thiophen-3-yl]propanoic acid; ethyl 2-acetamido-3-(2,5-dichloro-1,3-thiazol-4-yl)propanoate; methyl 2-amino-3-(2,5-dichlorothiophen-3-yl)propanoate; ethyl 2-amino-3-(2,5-dichlorothiophen-3-yl)propanoate; 2-(2-methoxyethoxy)ethyl-2-amino-3-(thiophen-3-yl)propanoate; ethyl 2-acetamido-3-(thiophen-3-yl)propanoate; ethyl 3-(2,5-dichlorothiophen-3-yl)-2-acetamidopropanoate; ethyl 3-(2,5-dichlorofuran-3-yl)-2-acetamidopropanoate; propyl 2-amino-3-(2,5-dichlorofuran-3-yl)propanoate; 4-(2-acetamido-3-ethoxy-3-oxopropyl)-3-methyl-1,3-thiazol-3-ium chloride; 2-(2-ethoxyethoxy)ethyl 3-(2,5-dichlorothiophen-3-yl)-2-acetamidopropanoate; pentyl 2-acetamido-3-(1,3,4-oxadiazol-2-yl)propanoate; ethyl-2-amino-3-[(2,5-dibromothiophene-3-sulfonyl)amino]propanoate; butyl 3-(5-chloro-1,2,4-thiadiazol-3-yl)-2-acetamidopropanoate; 2-amino-3-(1H-indazol-3-yl)propanoic acid hydrochloride[HCl]; 2-amino-3-(pyridazin-4-yl)propanoic acid; 2-amino-3-(pyridin-4-yl)propanoic acid; 2-amino-3-(pyridin-3-yl)propanoic acid dihydrochloride 3-(5-Hydroxy-3-pyridinyl)alanine; 2-amino-3-(5-methylpyridin-3-yl)propanoic acid; 2-amino-3-(4-aminopyridin-2-yl)propanoic acid; 2-amino-3-(2-aminopyridin-4-yl)propanoic acid; 2-amino-3-(6-aminopyridin-2-yl)propanoic acid; 2-amino-3-(5-aminopyridin-3-yl)propanoic acid; 2-amino-3-(5-sulfanylpseudopyridin-3-yl)propanoic acid; 2-amino-3-(2-sulfanylpseudopyridin-4-yl)propanoic acid; 2-amino-3-(pyrimidin-5-yl)propanoic acid; 2-amino-3-(4-amino-6-chloropyrimidin-2-yl)propanoic acid; 2-amino-3-(pyrimidin-2-yl)propanoic acid dihydrochloride; 2-amino-3-(4-hydroxypyrimidin-2-yl)propanoic acid; 2-amino-3-(2,4-dioxo-1,2,3,4-tetrahydropyrimidin-5-yl)propanoic acid; 2-amino-3-(pyrazin-2-yl)propanoic acid; 2-amino-3-(5-chloropyridin-3-

yl)propanoic acid; 2-amino-3-(2,5-dichloropyridin-3-yl)propanoic acid; 2-amino-3-(pyrimidin-4-yl)propanoic acid; 2-amino-3-(5-fluoropyridin-3-yl)propanoic acid; 2-amino-3-(6-chloropyridin-3-yl)propanoic acid; 2-amino-3-(2,6-dichloropyridin-4-yl)propanoic acid; 2-amino-3-(3,5-dichloropyridin-4-yl)propanoic acid; 2-amino-3-(3,5-difluoropyridin-4-yl)propanoic acid; 2-amino-3-[2-(dimethylamino)pyridin-4-yl]propanoic acid; 2-amino-3-(2-bromopyridin-4-yl)propanoic acid; 2-amino-3-(5,6-dibromopyridin-3-yl)propanoic acid; 2-amino-3-(2,6-dibromopyridin-4-yl)propanoic acid; 2-amino-3-(2,3-dibromopyridin-4-yl)propanoic acid; 2-amino-3-[5-(trifluoromethyl)pyridin-3-yl]propanoic acid; 2-amino-3-(5,6-dichloropyridin-3-yl)propanoic acid; 2-amino-3-(2-oxo-1,2-dihydropyridin-4-yl)propanoic acid; 2-amino-3-[4-(dimethylamino)pyridin-3-yl]propanoic acid; 2-amino-3-(2-oxo-1,2-dihydropyridin-3-yl)propanoic acid; 2-amino-3-(6-oxo-1,6-dihydropyrimidin-4-yl)propanoic acid; 2-amino-3-(6-oxo-1,6-dihydropyrimidin-5-yl)propanoic acid; 2-amino-3-(6-oxo-1,6-dihydropyridin-3-yl)propanoic acid; 2-amino-3-(2,6-dioxo-1,2,3,6-tetrahydropyrimidin-4-yl)propanoic acid; 2-amino-3-(6-oxo-2-sulfanyl-1,6-dihydropyrimidin-4-yl)propanoic acid; propyl 2-amino-3-(2-bromopyridin-4-yl)propanoate; 2-amino-3-(2-bromo-3,5-difluoropyridin-4-yl)propanoic acid; propyl 2-amino-3-(2-bromo-3,5-difluoropyridin-4-yl)propanoate; 2-amino-3-[(2-bromopyridine-4-sulfonyl)amino]propanoic acid; propyl 2-amino-3-[(2-bromopyridine-4-sulfonyl)amino]propanoate; ethyl 2-amino-3-(5,6-dibromopyridin-3-yl)propanoate; ethyl 2-amino-3-(2,3-dibromopyridin-4-yl)propanoate acid; 2-amino-3-[2-chloro-5-(trifluoromethyl)pyridin-3-yl]propanoic acid; 2-amino-3-(2-amino-6-oxo-1,6-dihydropyrimidin-5-yl)propanoic acid; 2-amino-3-(6-hydroxy-5-nitropyridin-3-yl)propanoic acid; methyl 2-amino-3-(2-

bromopyridin-4-yl)propanoate; 3-(2-amino-2-carboxyethyl)-1-methylpyridin-1-ium; 3-(2-amino-2-carboxyethyl)-1-hydroxypyridin-1-ium; 2-amino-3-(4-amino-6-hydroxy-2-methylpyrimidin-5-yl)propanoic acid; methyl 2-amino-3-(2,6-dibromopyridin-4-yl)propanoate; ethyl 3-(6-bromopyridin-3-yl)-2-acetamidopropanoate; methyl 3-(6-bromopyridin-3-yl)-2-acetamidopropanoate; ethyl-2-acetamido-3-(2-methoxypyrimidin-4-yl)propanoate; 2-(2-methoxyethoxy)ethyl 2-amino-3-(6-bromopyridin-3-yl)propanoate; 2-(2-ethoxyethoxy)ethyl 2-amino-3-(6-bromopyridin-3-yl)propanoate; 5-(2-amino-2-carboxyethyl)-1-methylpyrimidin-1-ium; 2-amino-3-[2-(trifluoromethyl)pyridin-4-yl]propanoic acid hydrochloride[HC1]; ethyl 3-[(2-bromopyridin-4-yl)oxy]-2-acetamidopropanoate; ethyl 2-acetamido-3-(pyridin-4-yloxy)propanoate; 2-amino-4-(1H-pyrrol-3-yl)butanoic acid; 2-amino-3-(1H-pyrrol-2-yl)propanoic acid; 2-amino-3-(1H-pyrrol-3-yl)propanoic acid; 2-amino-3-(4H-1,2,4-triazol-3-yl)propanoic acid; (2S)-2-hydroxy-3-(1H-imidazol-4-yl)propanoic acid; ethyl 2-[[(benzyloxy) carbonyl] amino]-3-(1H-1,2,4-triazol-3-yl)propanoate; 2-amino-3-(4-methyl-4H-1,2,4-triazol-3-yl)propanoic acid; 2-amino-3-(1-methyl-1H-1,2,4-triazol-5-yl)propanoic acid dihydrochloride; 2-amino-3-(1-methyl-1H-1,2,3-triazol-4-yl)propanoic acid hydrochloride; 2-amino-3-(2-methyl-2H-1,2,3,4-tetrazol-5-yl)propanoic acid hydrochloride; 2-amino-3-(dimethyl-4H-1,2,4-triazol-3-yl)propanoic acid hydrochloride; (2S)-2-amino-3-[5-(trifluoromethyl)-1H-pyrazol-4-yl]propanoic acid; and 2-(2-butoxyethoxy)ethyl 2-amino-3-(2H-1,2,3-triazol-4-yl)propanoate, or an agriculturally acceptable salt thereof.

66. An agricultural composition comprising the compound of claim 65 and at least one agriculturally acceptable carrier.

67. A method of controlling undesired plant growth comprising applying to the locus of said undesired plant growth a herbicidally effective amount of the compound of claim 65.
68. A method of controlling undesired plant growth comprising applying to the locus of said undesired plant growth a herbicidally effective amount of the agricultural composition of claim 66.