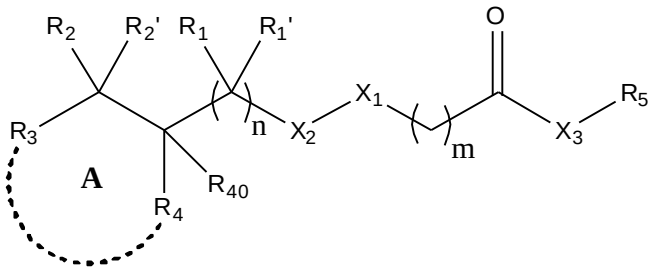
SUMMARY

[0010a] In an aspect of the present disclosure, there is provided a compound represented by the structure of formula **I(g):**



I(g)

wherein

R_1, R_1', R_2, R_2' and **R_{40}** are each independently H, C_1-C_5 linear or branched, unsubstituted alkyl, methyl, ethyl, propyl, iso-propyl, t-Bu, iso-butyl, pentyl, benzyl, C(O)-R_{10}, or C(O)-CH_3;

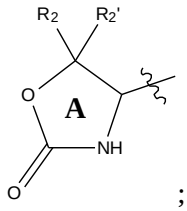
R_3 is OH, or NH_2;

R_4 is NH_2, or OH;

wherein if R_3 is OH then R_4 is NH_2 and if R_3 is NH_2 then R_4 is OH;

wherein if **R_3** is OH and **R_4** is NH_2, then **n** + **m** cannot be equal to 3;

or **R_3** and **R_4** are joined together to form ring **A,** represented by the following structure:



;

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), C(=CH_2)-R_{10} (e.g., C(=CH_2)-C(O)-OCH_3, C(=CH_2)-CN), substituted or unsubstituted alkyl sulfone (e.g., SO_2-CH_2-cyclopentyl), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_{10} is H, CN, C_1-C_5 linear or branched alkyl, C(O)R, or $S(O)_2R$;

R is C_1-C_5 linear or branched alkyl, C_1-C_5 linear or branched alkoxy, phenyl, aryl or heteroaryl;

m is 1 or 2;

n is 0, 1, 2 or 3;

X_1 is S, O, or CH_2;

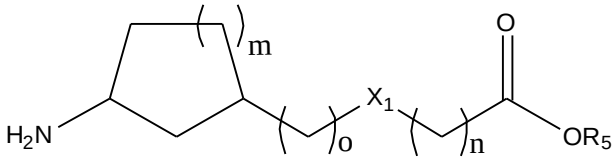
X_2 is S, O, or CH_2;

X_3 is O, NH or N-**R_{50}**;

R_{50} is H or C_1-C_5 linear or branched, substituted or unsubstituted alkyl;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof;

or a compound represented by the structure of formula **X(a)**:



X(a)

wherein

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), C(=CH_2)-R_{10} (e.g., C(=CH_2)-C(O)-OCH_3, C(=CH_2)-CN), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_{10} is H, CN, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C(O)R (e.g., C(O)(OCH_3)), or $S(O)_2R$;

R is H, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C_1-C_5 linear or branched alkoxy (e.g., methoxy), phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

X_1 is S, O, CH_2, CH(R) or $C(R)_2$;

wherein if X_1 is CH_2, then R_5 cannot be H;

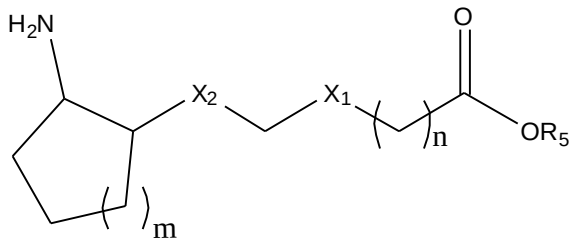
n is 2;

o is 0;

m is an integer number between 1 and 3;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof;

or a compound represented by the structure of formula **X(c)**:



X(c)

wherein

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), C(=CH_2)-R_{10} (e.g., C(=CH_2)-C(O)-OCH_3, C(=CH_2)-CN), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_{10} is H, CN, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C(O)R (e.g., C(O)(OCH_3)), or $S(O)_2R$;

R is H, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C_1-C_5 linear or branched alkoxy (e.g., methoxy), phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

X_1 is S, O, CH_2, CH(R) or $C(R)_2$;

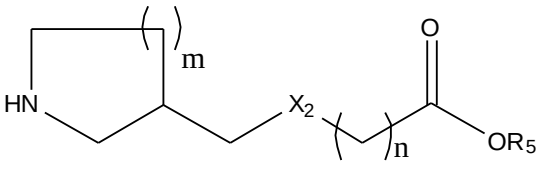
X_2 is O, CH_2, CH(R) or $C(R)_2$;

n is an integer number between 1 and 2;

m is an integer number between 1 and 3;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof;

or a compound represented by the structure of formula **X(d)**:



X(d)

wherein

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5

linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), $C(=CH_2)$-R_{10} (e.g., $C(=CH_2)$-C(O)-OCH_3, $C(=CH_2)$-CN), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_{10} is H, CN, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C(O)R (e.g., $C(O)(OCH_3)$), or $S(O)_2R$;

R is H, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C_1-C_5 linear or branched alkoxy (e.g., methoxy), phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

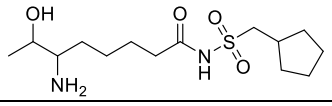
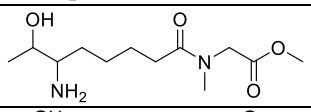
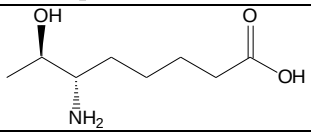
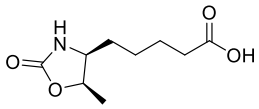
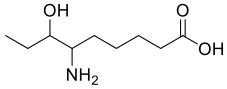
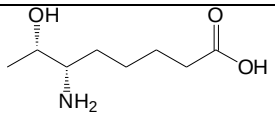
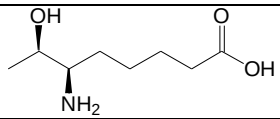
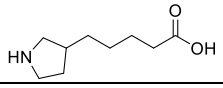
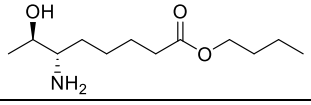
X_2 is S, O, CH_2, CH(R) or $C(R)_2$;

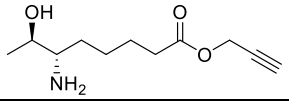
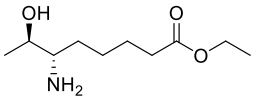
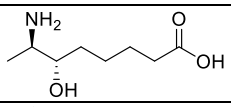
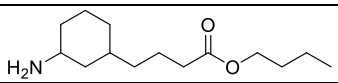
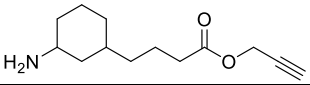
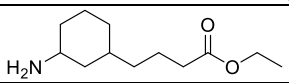
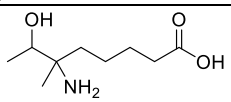
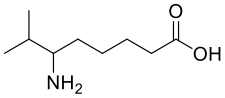
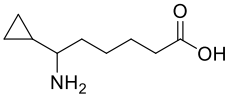
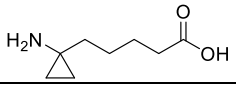
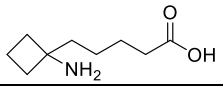
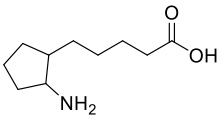
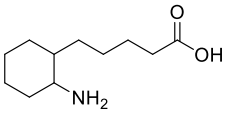
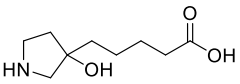
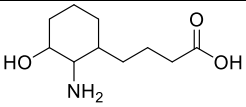
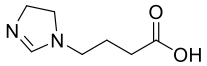
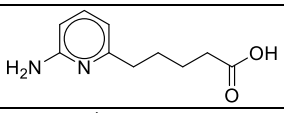
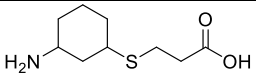
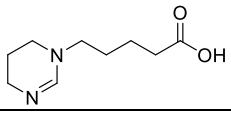
n is an integer number between 1 and 2;

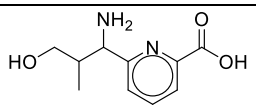
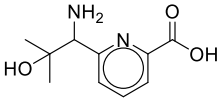
m is 1 or 3;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof;

or a compound, represented by any one of the following structures:

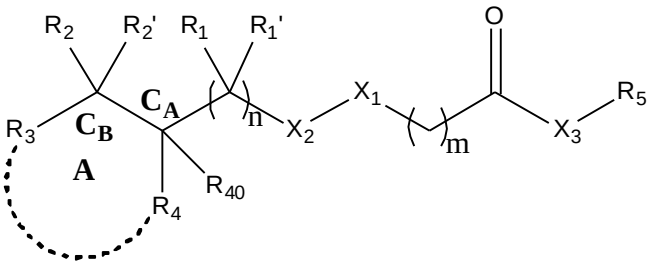
Compound	Structure
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or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof.

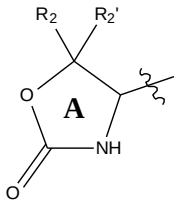
[0010b] In another aspect, there is provided herbicidal compound, represented by the structure of formula **I(ga):**



I(ga)

wherein

$\mathbf{C_A}$ and $\mathbf{C_B}$ are both chiral carbon centers, or $\mathbf{C_A}$ and $\mathbf{C_B}$ together with $\mathbf{R_3}$ and $\mathbf{R_4}$ are joined to form ring **A,** represented by the following structure:



$\mathbf{R_1}$, $\mathbf{R_1'}$, $\mathbf{R_2}$, $\mathbf{R_2'}$ and $\mathbf{R_{40}}$ are each independently H, C_1-C_5 linear or branched, unsubstituted alkyl, methyl, ethyl, propyl, iso-propyl, t-Bu, iso-butyl, pentyl, benzyl, C(O)-R_{10}, or C(O)-CH_3;

$\mathbf{R_3}$ is OH, SH, NH_2, $NHNH_2$, NHR, $N(R)_2$, NHC(O)OBz, -NHC(O)-R_{10}, $NHC(O)CH_3$, C_1-C_5 linear or branched, substituted or unsubstituted alkyl, methyl, ethyl, propyl, iso-propyl, t-Bu, iso-butyl, pentyl, substituted or unsubstituted C_3-C_8 cycloalkyl, C_1-C_5 linear or branched or C_3-C_8 cyclic haloalkyl, C_1-C_5 linear or branched or C_3-C_8 cyclic alkoxy, substituted or unsubstituted C_3-C_8 heterocyclic ring, or substituted or unsubstituted aryl;

$\mathbf{R_4}$ is NH_2, $NHNH_2$, $N(R)_2$, -NHC(O)-R_{10}, NHC(O)H, $NHC(O)CH_3$, C_1-C_5 linear or branched, substituted or unsubstituted alkyl, C_1-C_5 linear or branched or C_3-C_8 cyclic haloalkyl, C_1-C_5 linear or branched or C_3-C_8 cyclic alkoxy, substituted or unsubstituted C_3-C_8 cycloalkyl, substituted or unsubstituted C_3-C_8 heterocyclic ring, or substituted or unsubstituted aryl;

or $\mathbf{R_3}$ and $\mathbf{R_4}$ are joined together to form ring **A** as described above;

wherein $\mathbf{R_3}$ and $\mathbf{R_4}$ cannot both be NH_2, and

wherein if $\mathbf{R_3}$ is OH and $\mathbf{R_4}$ is NH_2, then **n** + **m** cannot be equal to 3;

$\mathbf{R_5}$ is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted

alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), $C(=CH_2)$-R_{10} (e.g., $C(=CH_2)$-C(O)-OCH_3, $C(=CH_2)$-CN), substituted or unsubstituted alkyl sulfone (e.g., SO_2-CH_2-cyclopentyl), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_{10} and **R_{11}** are each independently H, CN, C_1-C_5 linear or branched alkyl, C(O)R, or $S(O)_2R$;

or **R_{10}** and **R_{11}** are joined to form a substituted or unsubstituted C_3-C_8 heterocyclic ring;

R is C_1-C_5 linear or branched alkyl, C_1-C_5 linear or branched alkoxy, phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

m is 1 or 2;

n is 0, 1, 2 or 3;

X_1 is S, O, or CH_2;

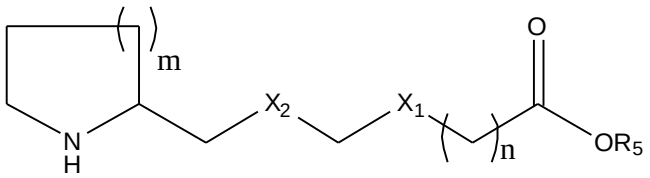
X_2 is S, O, or CH_2;

X_3 is O, NH or N-**R_{50}**;

R_{50} is H or C_1-C_5 linear or branched, substituted or unsubstituted alkyl;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof

or an herbicidal compound represented by the structure of formula **X(b)**:



X(b)

wherein

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), $C(=CH_2)$-R_{10} (e.g., $C(=CH_2)$-C(O)-OCH_3, $C(=CH_2)$-CN), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_{10} is H, CN, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C(O)R (e.g., C(O)(OCH_3)), or $S(O)_2R$;

R is H, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C_1-C_5 linear or branched alkoxy (e.g., methoxy), phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

X_1 is S, O, CH_2, CH(R) or $C(R)_2$;

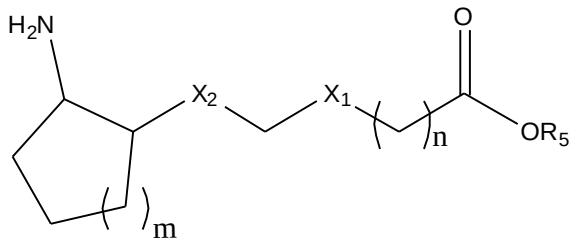
X_2 is S, O, CH_2, CH(R) or $C(R)_2$;

n is an integer number between 0 and 2;

m is an integer number between 1 and 3;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof;

or an herbicidal compound represented by the structure of formula **X(c)**:



X(c)

wherein

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), C(=CH_2)-R_{10} (e.g., C(=CH_2)-C(O)-OCH_3, C(=CH_2)-CN), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_{10} is H, CN, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C(O)R (e.g., C(O)(OCH_3)), or $S(O)_2R$;

R is H, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C_1-C_5 linear or branched alkoxy (e.g., methoxy), phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

X_1 is S, O, CH_2, CH(R) or $C(R)_2$;

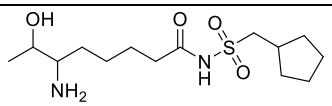
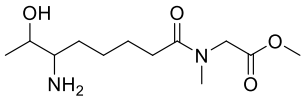
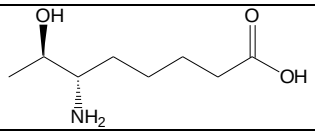
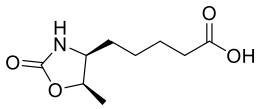
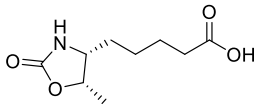
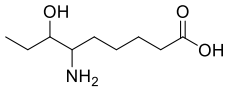
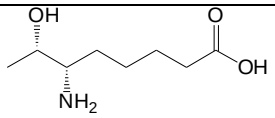
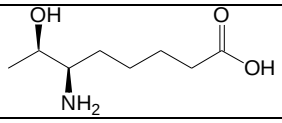
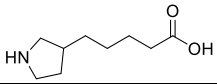
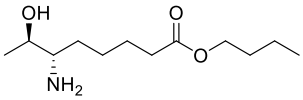
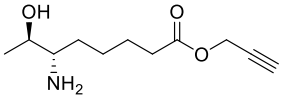
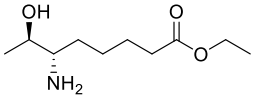
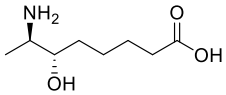
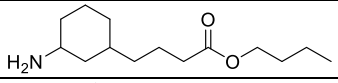
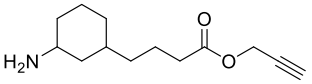
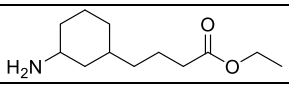
X_2 is S, O, CH_2, CH(R) or $C(R)_2$;

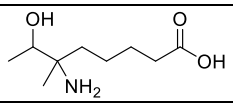
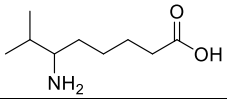
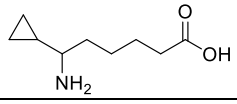
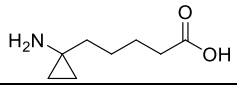
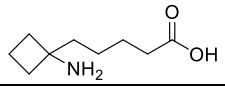
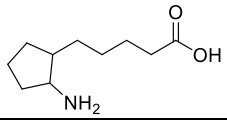
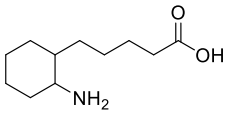
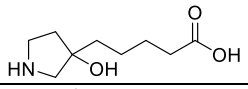
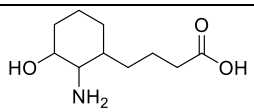
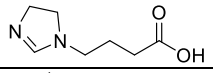
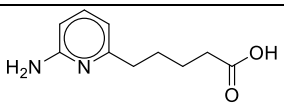
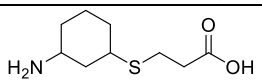
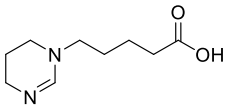
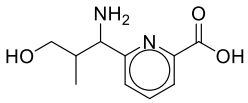
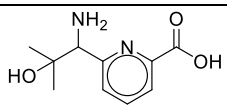
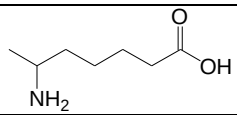
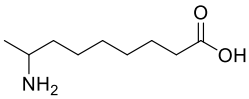
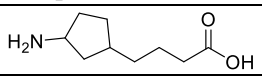
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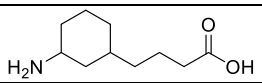
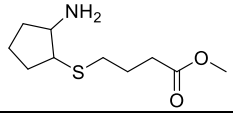
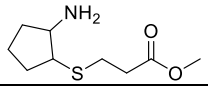
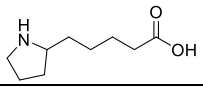
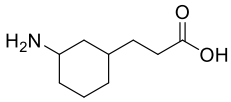
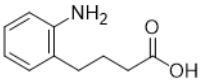
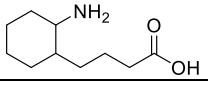
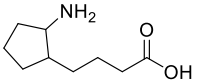
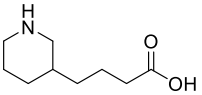
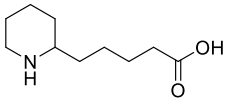
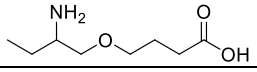
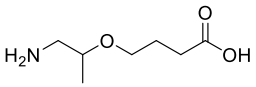
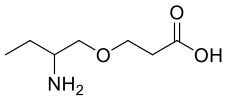
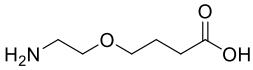
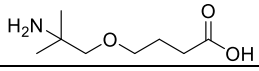
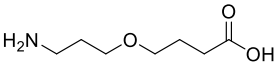
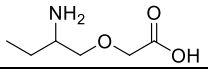
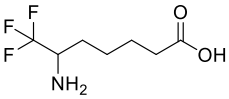
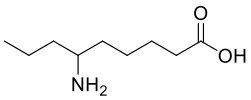
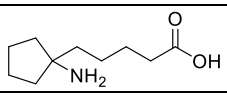
m is an integer number between 1 and 3;

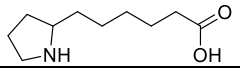
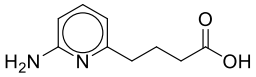
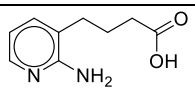
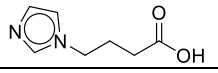
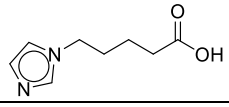
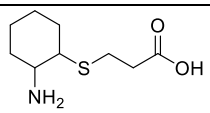
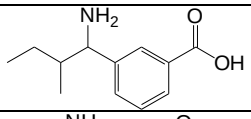
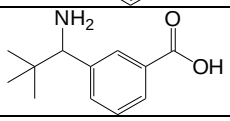
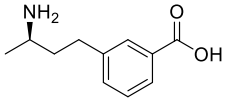
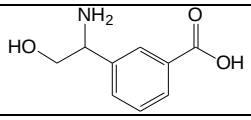
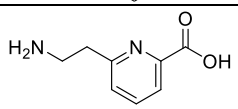
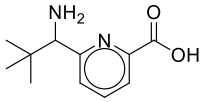
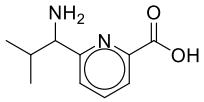
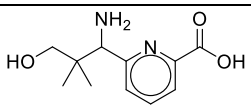
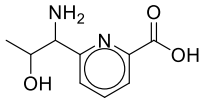
or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof;

or an herbicidal compound, represented by any one of the following structures:

Compound	Structure
101	
102	
104	
105	
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125	
126	

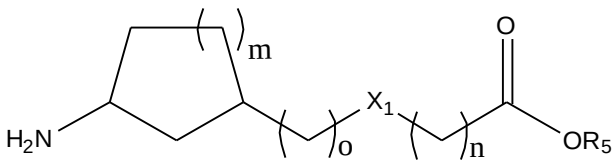
120	
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or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof.

[0010c] In another aspect, there is provided a compound represented by the structure of formula **X(a)**:



X(a)

wherein

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), C(=CH_2)-R_{10} (e.g., C(=CH_2)-C(O)-OCH_3, C(=CH_2)-CN), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_{10} is H, CN, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C(O)R (e.g., C(O)(OCH_3)), or $S(O)_2R$;

R is H, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C_1-C_5 linear or branched alkoxy (e.g., methoxy), phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

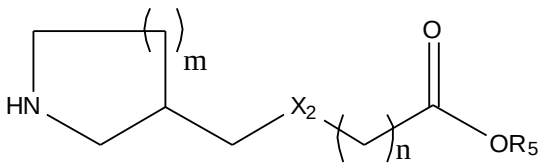
X_1 is S, O, CH_2, CH(R) or $C(R)_2$;

n and **o** are each independently an integer number between 0 and 2;

m is an integer number between 1 and 3;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof;

or a compound represented by the structure of formula **X(d)**:



X(d)

wherein

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), C(=CH_2)-R_{10} (e.g., C(=CH_2)-C(O)-OCH_3, C(=CH_2)-CN), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_{10} is H, CN, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C(O)R (e.g., C(O)(OCH_3)), or $S(O)_2R$;

R is H, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C_1-C_5 linear or branched alkoxy (e.g., methoxy), phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

X_2 is S, O, CH_2, CH(R) or $C(R)_2$;

n is an integer number between 0 and 2;

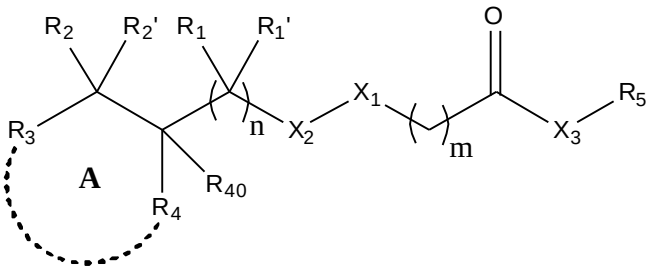
m is an integer number between 1 and 3;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof;

for use in controlling the growth of an undesired plant.

[0011] In various examples, this disclosure is directed to a compound represented by the structure of formula **I, I(a)-I(ga), X** and **X(a)-X(d)** as defined herein below or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof.

[0012] In various examples, this disclosure is directed to a compound represented by the structure of formula **I(g):**



I(g)

wherein

R_1, R_1', R_2, R_2' and **R_{40}** are each independently H, C_1-C_5 linear or branched, unsubstituted alkyl, methyl, ethyl, propyl, iso-propyl, t-Bu, iso-butyl, pentyl, benzyl, C(O)-R_{10}, or C(O)-CH_3;

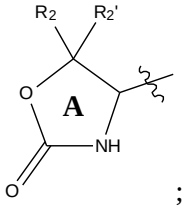
R_3 is OH, or NH_2;

R_4 is NH_2, or OH;

wherein if R_3 is OH then R_4 is NH_2 and if R_3 is NH_2 then R_4 is OH;

wherein if **R_3** is OH and **R_4** is NH_2, then **n** + **m** cannot be equal to 3;

or **R_3** and **R_4** are joined together to form ring **A,** represented by the following structure:



;

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$,

$CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), $C(=CH_2)$-R_{10} (e.g., $C(=CH_2)$-C(O)-OCH_3, $C(=CH_2)$-CN), substituted or unsubstituted alkyl sulfone (e.g., SO_2-CH_2-cyclopentyl), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_{10} is H, CN, C_1-C_5 linear or branched alkyl, C(O)R, or $S(O)_2R$;

R is C_1-C_5 linear or branched alkyl, C_1-C_5 linear or branched alkoxy, phenyl, aryl or heteroaryl;

m is 1 or 2;

n is 0, 1, 2 or 3;

$\mathbf{X_1}$ is S, O, or CH_2;

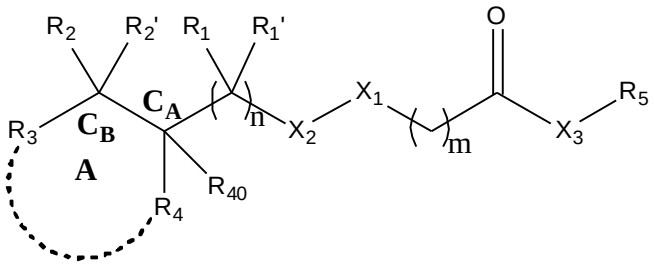
$\mathbf{X_2}$ is S, O, or CH_2;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof.

[0013] In some examples, ring **A** has two chiral centers. In some examples, the compound is not (*6R,7S*)-6-amino-7-hydroxyoctanoic acid or 5-((*4R,5S*)-5-methyl-2-oxooxazolidin-4-yl)pentanoic acid. In some examples, the compound is a substantially pure single stereoisomer. In some examples, the compound is a mixture of stereoisomers. In some examples, the compound is the substantially pure *SR* stereoisomer. In some examples, the compound is the substantially pure *RS* stereoisomer. In some examples, the substantially pure stereoisomer has a purity higher than 90%. In some examples, the substantially pure stereoisomer has a purity higher than 95%. In some examples, the substantially pure stereoisomer has a purity higher than 98%. In some examples, the compound is compound **101**, **102**, **104**, **105**, **113, 114, 115, 116, 117, 118, 119, 120, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 137, 138, 139, 140, 141, 142** or an agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, or isotopic variant thereof; each represents a separate example according to this disclosure. In some examples, the compound is compound any one of the compounds listed in **Table 1** herein below or an agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, or isotopic variant thereof; each represents a separate example according to this disclosure.

[0014] In various examples, this disclosure is directed to an herbicidal compound represented by the structure of formula **I, I(a)-I(ga), X** and **X(a)-X(d)** as defined herein below, or an agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, or isotopic variant (e.g., deuterated analog) thereof; each represents a separate example according to this disclosure.

[0015] In various examples, this disclosure is directed to an herbicidal compound represented by the structure of formula **I(ga):**



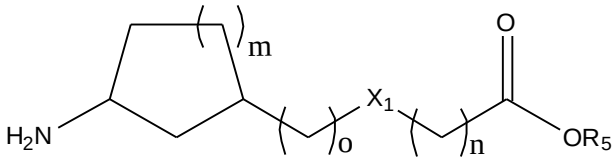
I(ga)

wherein

$\mathbf{C_A}$ and $\mathbf{C_B}$ are both chiral carbon centers, or $\mathbf{C_A}$ and $\mathbf{C_B}$ together with $\mathbf{R_3}$ and $\mathbf{R_4}$ are joined to form ring **A,** represented by the following structure:

[0016] In some examples, this disclosure is directed to an herbicidal compound represented by the structure of any one of compounds **101**, **102**, **104-120, 123-134, 137-178** or an agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, or isotopic variant thereof; each represents a separate example according to this disclosure. In some examples, the compound is compound any one of the compounds listed in Table **2** herein below or an agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, or isotopic variant thereof; each represents a separate example according to this disclosure.

[0017] In some examples, this disclosure is directed to an herbicidal compound represented by the structure of formula **X(a)**:



X(a)

wherein

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), C(=CH_2)-R_{10} (e.g., C(=CH_2)-C(O)-OCH_3, C(=CH_2)-CN), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_9 is $[CH]_q$, $[C]_q$

wherein **q** is between 2 and 10;

R_{10} and **R_{11}** are each independently H, CN, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C(O)R (e.g., C(O)(OCH_3)), or $S(O)_2R$; or **R_{10}** and **R_{11}** are joined to form a substituted or unsubstituted C_3-C_8 heterocyclic ring (e.g., piperazine, piperidine),

wherein substitutions include: F, Cl, Br, I, OH, SH, C_1-C_5 linear or branched alkyl (e.g. methyl, ethyl), C_2-C_5 linear or branched alkenyl, C_2-C_5 linear or branched alkynyl (e.g. CCH), C_3-C_8 cycloalkyl, linear, branched or cyclic alkoxy, COOH, COO(R), NH_2, $N(R)_2$, CF_3, aryl, phenyl, heteroaryl (e.g., imidazole), C_3-C_8 cycloalkyl (e.g., cyclohexyl), CN, NO_2 or any combination thereof;

R is H, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C_1-C_5 linear or branched alkoxy (e.g., methoxy), phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

X_1 is S, O, CH_2, CH(R) or $C(R)_2$;

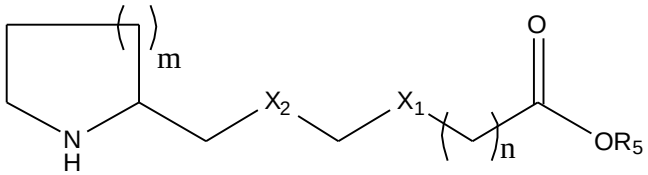
n and **o** are each independently an integer number between 0 and 2;

m is an integer number between 1 and 3;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof

[0018] In various examples, this disclosure is directed to a compound represented by the structure of formula **X(a)** as defined herein above, wherein **n** is 2; o is 0; and if X_1 is CH_2, then R_5 cannot be H.

[0019] In some examples, this disclosure is directed to an herbicidal compound represented by the structure of formula **X(b)**:



X(b)

wherein

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), C(=CH_2)-R_{10} (e.g., C(=CH_2)-C(O)-OCH_3, C(=CH_2)-CN), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_{10} is H, CN, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C(O)R (e.g., C(O)(OCH_3)), or $S(O)_2R$;

R is H, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C_1-C_5 linear or branched alkoxy (e.g., methoxy), phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

X_1 is S, O, CH_2, CH(R) or $C(R)_2$;

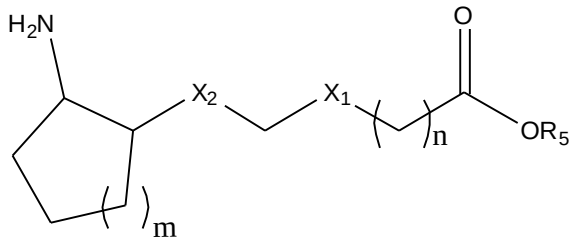
X_2 is S, O, CH_2, CH(R) or $C(R)_2$;

n is an integer number between 0 and 2;

m is an integer number between 1 and 3;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof

[0020] In various examples, this disclosure is directed to an herbicidal compound represented by the structure of formula **X(c)**:



X(c)

wherein

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), C(=CH_2)-R_{10} (e.g., C(=CH_2)-C(O)-OCH_3, C(=CH_2)-CN), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_9 is $[CH]_q$, $[C]_q$

wherein **q** is between 2 and 10;

R_{10} and **R_{11}** are each independently H, CN, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C(O)R (e.g., C(O)(OCH_3)), or $S(O)_2R$; or **R_{10}** and **R_{11}** are joined to form a substituted or unsubstituted C_3-C_8 heterocyclic ring (e.g., piperazine, piperidine),

wherein substitutions include: F, Cl, Br, I, OH, SH, C_1-C_5 linear or branched alkyl (e.g. methyl, ethyl), C_2-C_5 linear or branched alkenyl, C_2-C_5 linear or branched alkynyl (e.g. CCH), C_3-C_8 cycloalkyl, linear, branched or cyclic alkoxy, COOH, COO(R), NH_2, $N(R)_2$, CF_3, aryl, phenyl, heteroaryl (e.g., imidazole), C_3-C_8 cycloalkyl (e.g., cyclohexyl), CN, NO_2 or any combination thereof;

R is H, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C_1-C_5 linear or branched alkoxy (e.g., methoxy), phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

X_1 is S, O, CH_2, CH(R) or $C(R)_2$;

X_2 is S, O, CH_2, CH(R) or $C(R)_2$;

n is an integer number between 0 and 2;

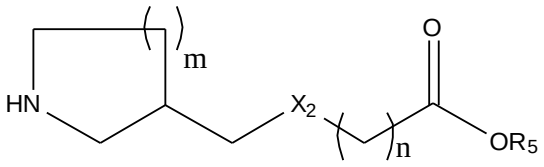
m is an integer number between 1 and 3;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof.

[0021] In various examples, this disclosure is directed to a compound represented by the structure of formula **X(c)** as described hereinabove, wherein n is an integer number between 1 and 2; or its

agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof.

[0022] In various examples, this disclosure is directed to an herbicidal compound represented by the structure of formula **X(d)**:



X(d)

wherein

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), C(=CH_2)-R_{10} (e.g., C(=CH_2)-C(O)-OCH_3, C(=CH_2)-CN), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_9 is $[CH]_q$, $[C]_q$

wherein **q** is between 2 and 10;

R_{10} and **R_{11}** are each independently H, CN, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C(O)R (e.g., C(O)(OCH_3)), or $S(O)_2R$; or **R_{10}** and **R_{11}** are joined to form a substituted or unsubstituted C_3-C_8 heterocyclic ring (e.g., piperazine, piperidine),

wherein substitutions include: F, Cl, Br, I, OH, SH, C_1-C_5 linear or branched alkyl (e.g. methyl, ethyl), C_2-C_5 linear or branched alkenyl, C_2-C_5 linear or branched alkynyl (e.g. CCH), C_3-C_8 cycloalkyl, linear, branched or cyclic alkoxy, COOH, COO(R), NH_2, $N(R)_2$, CF_3, aryl, phenyl, heteroaryl (e.g., imidazole), C_3-C_8 cycloalkyl (e.g., cyclohexyl), CN, NO_2 or any combination thereof;

R is H, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C_1-C_5 linear or branched alkoxy (e.g., methoxy), phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

X_2 is S, O, CH_2, CH(R) or $C(R)_2$;

n is an integer number between 0 and 2;

m is an integer number between 1 and 3;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof.

[0023] In various examples, this disclosure is directed to a compound represented by the structure of formula **X(d)** as described hereinabove, wherein **m** is 1 or 3; or an agrochemically acceptable salt,

stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof.

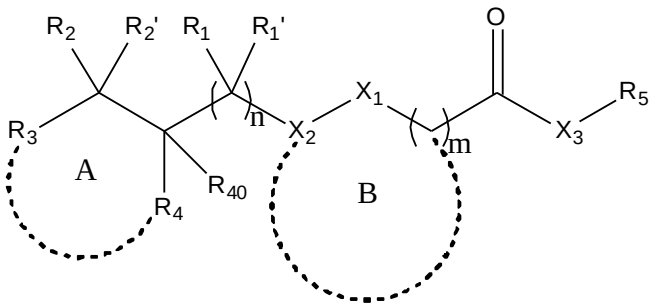
[0024] In various examples, this disclosure is directed to an agrochemical composition comprising an herbicidally effective amount of a compound according to this disclosure.

[0025] In various examples, this disclosure is directed to a method of controlling the growth of undesired plants, comprising applying a compound according to this disclosure or an agrochemical composition according to this disclosure, to crop fields.

[0026] In various examples, this disclosure is directed to a compound according to this disclosure, or an agrochemical composition according to this disclosure, for use in controlling the growth of undesired plants. In some examples, the plant is a eudicot (dicot) or a monocotyledon (monocot). In some examples, the plant is a weed. In some examples, the weed comprises: *Abutilon theophrasti* , *Amaranthus palmeri*, *Ambrosia artemisiifolia* , *Alopecurus myosuroides* , *Avena sterilis* , *Chenopodium album* , *Conyza Canadensis* , *Digitaria sanguinalis* , *Echinochloa colona*, *Euphorbia heterophylla* , *Lolium perenne* , *Lolium rigidum* , *Matricaria chamomilla* , *Phalaris paradoxa* , *Poa annua* , *Portulaca oleracea* , *Setaria viridis*, *Solanum nigrum* or any combination thereof. In some examples, the dicot plant is *Arabidopsis thaliana,* and/or the monocot plant is *Dactyloctenium aegyptium* or *Eragrostis teff.* In some examples, the compound is for use in pre-plant treatments, pre-emergence treatments, post-emergence treatments, or any combination thereof; each represents a separate examples according to this disclosure.

DETAILED DESCRIPTION OF THE INVENTION

[0027] In various embodiments, this invention is directed to a compound represented by the structure of formula (**I**):



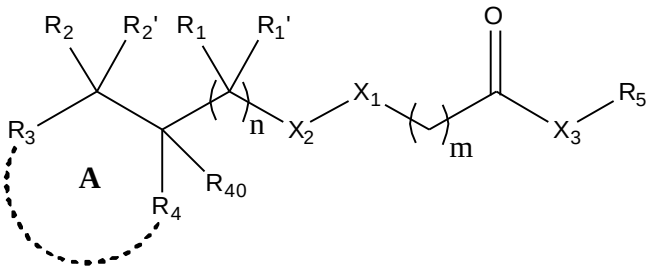
(**I**)

wherein

A and **B** rings are absent, or are each independently a substituted or unsubstituted single or fused aromatic or heteroaromatic ring system (e.g., B: aryl, pyridine), or a substituted or unsubstituted single or fused C_3-C_{10} cycloalkyl (e.g., cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl), or a substituted or unsubstituted single or fused C_3-C_{10} heterocyclic ring (e.g., **A**: 5-methyloxazolidin-2-one, 1, 2, or 3-pyrrolidine, tetrahydropyridine, 5,6-dihydro-4H-1,3-thiazine, 4,5-dihydro-1H-imidazole, pyridine, tetrahydropyrimidine; piperidine, imidazole);

WHAT IS CLAIMED:

1. A compound represented by the structure of formula **I(g):**



I(g)

wherein

R_1, R_1', R_2, R_2' and **R_{40}** are each independently H, C_1-C_5 linear or branched, unsubstituted alkyl, methyl, ethyl, propyl, iso-propyl, t-Bu, iso-butyl, pentyl, benzyl, C(O)-R_{10}, or C(O)-CH_3;

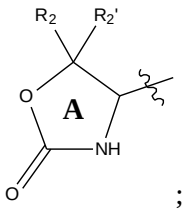
R_3 is OH, or NH_2;

R_4 is NH_2, or OH;

wherein if R_3 is OH then R_4 is NH_2 and if R_3 is NH_2 then R_4 is OH;

wherein if **R_3** is OH and **R_4** is NH_2, then **n** + **m** cannot be equal to 3;

or **R_3** and **R_4** are joined together to form ring **A,** represented by the following structure:



;

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), C(=CH_2)-R_{10} (e.g., C(=CH_2)-C(O)-OCH_3, C(=CH_2)-CN), substituted or unsubstituted alkyl sulfone (e.g., SO_2-CH_2-cyclopentyl), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_{10} is H, CN, C_1-C_5 linear or branched alkyl, C(O)R, or $S(O)_2R$;

R is C_1-C_5 linear or branched alkyl, C_1-C_5 linear or branched alkoxy, phenyl, aryl or heteroaryl;

m is 1 or 2;

n is 0, 1, 2 or 3;

$\mathbf{X_1}$ is S, O, or CH_2;

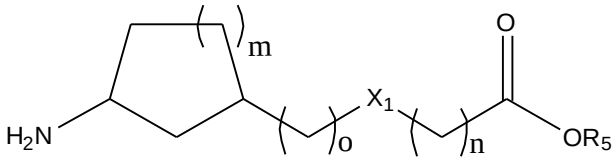
$\mathbf{X_2}$ is S, O, or CH_2;

$\mathbf{X_3}$ is O, NH or N-$\mathbf{R_{50}}$;

$\mathbf{R_{50}}$ is H or C_1-C_5 linear or branched, substituted or unsubstituted alkyl;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof;

or a compound represented by the structure of formula **X(a)**:



X(a)

wherein

$\mathbf{R_5}$ is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), C(=CH_2)-R_{10} (e.g., C(=CH_2)-C(O)-OCH_3, C(=CH_2)-CN), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

$\mathbf{R_8}$ is $[CH_2]_p$

wherein **p** is between 1 and 10;

$\mathbf{R_{10}}$ is H, CN, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C(O)R (e.g., C(O)(OCH_3)), or $S(O)_2R$;

R is H, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C_1-C_5 linear or branched alkoxy (e.g., methoxy), phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

$\mathbf{X_1}$ is S, O, CH_2, CH(R) or $C(R)_2$;

wherein if X_1 is CH_2, then R_5 cannot be H;

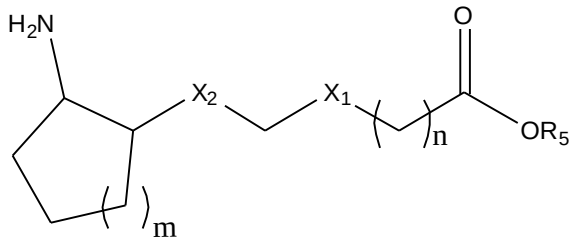
n is 2;

o is 0;

m is an integer number between 1 and 3;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof;

or a compound represented by the structure of formula **X(c)**:



X(c)

wherein

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), C(=CH_2)-R_{10} (e.g., C(=CH_2)-C(O)-OCH_3, C(=CH_2)-CN), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_{10} is H, CN, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C(O)R (e.g., C(O)(OCH_3)), or $S(O)_2R$;

R is H, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C_1-C_5 linear or branched alkoxy (e.g., methoxy), phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

X_1 is S, O, CH_2, CH(R) or $C(R)_2$;

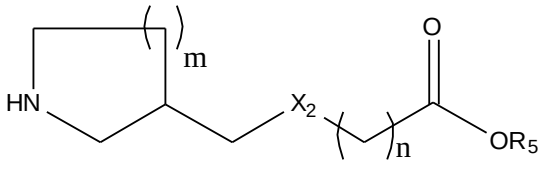
X_2 is O, CH_2, CH(R) or $C(R)_2$;

n is an integer number between 1 and 2;

m is an integer number between 1 and 3;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof;

or a compound represented by the structure of formula **X(d)**:



X(d)

wherein

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), C(=CH_2)-R_{10} (e.g., C(=CH_2)-C(O)-OCH_3,

$C(=CH_2)$-CN), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_{10} is H, CN, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C(O)R (e.g., $C(O)(OCH_3)$), or $S(O)_2R$;

R is H, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C_1-C_5 linear or branched alkoxy (e.g., methoxy), phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

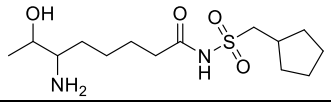
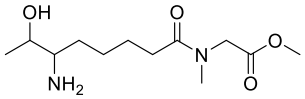
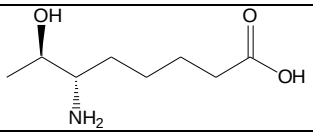
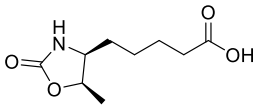
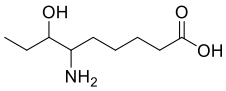
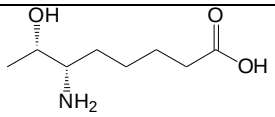
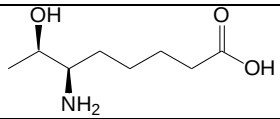
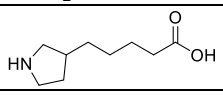
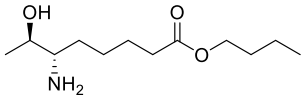
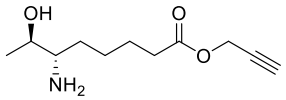
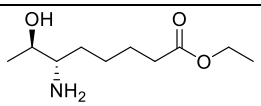
X_2 is S, O, CH_2, CH(R) or $C(R)_2$;

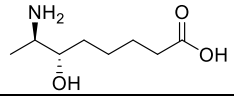
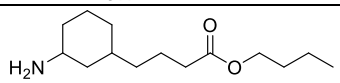
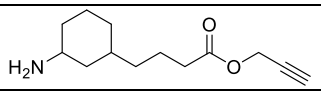
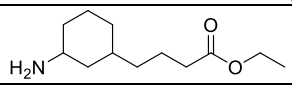
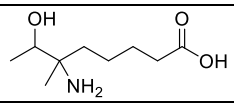
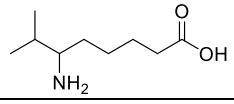
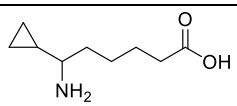
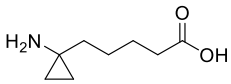
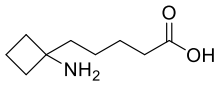
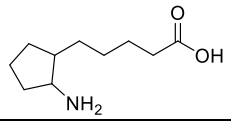
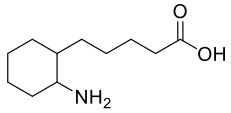
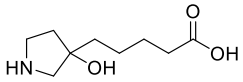
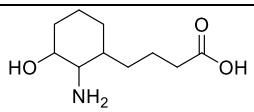
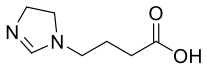
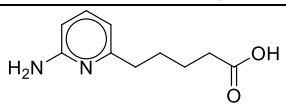
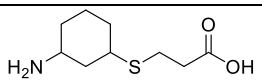
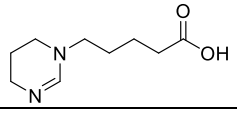
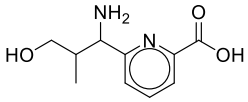
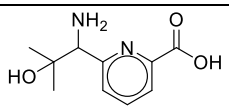
n is an integer number between 1 and 2;

m is 1 or 3;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof;

or a compound, represented by any one of the following structures:

Compound	Structure
101	
102	
104	
105	
113	
114	
115	
123	
116	
117	
118	

119	
124	
125	
126	
120	
127	
128	
129	
130	
131	
132	
133	
134	
137	
138	
139	
140	
141	
142	

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof.

2. The compound of claim 1, wherein ring **A** as defined by formula I(g), has two chiral centers;

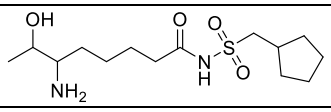
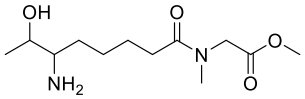
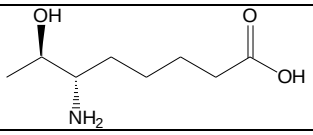
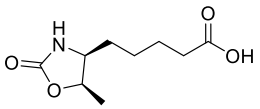
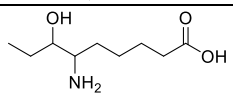
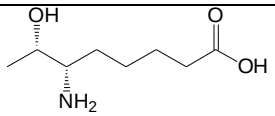
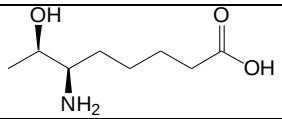
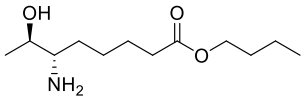
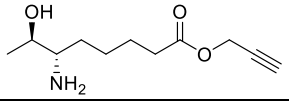
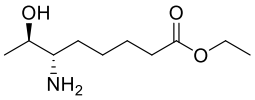
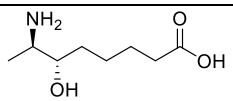
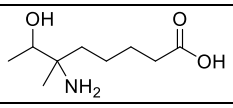
wherein as defined in formula I(g), R_1 and R_1' are both H, R_2 is CH_3, R_2' is H or CH_3, R_{40} is H or CH_3, X_1 is CH_2, X_2 is CH_2, X_3 is O, NH or N-CH_3, R_5 is H, ethyl, butyl, CH_2-CCH, CH_2-C(O)-OCH_3 or SO_2-CH_2-cyclopentyl, R_3 is OH, R_4 is NH_2 or R_3 and R_4 are joined to form ring A, n is 1, m is 1, or any combination thereof;

wherein the compound is not (*6R,7S*)-6-amino-7-hydroxyoctanoic acid or 5-((*4R,5S*)-5-methyl-2-oxooxazolidin-4-yl)pentanoic acid;

wherein the compound is a mixture of stereoisomers;

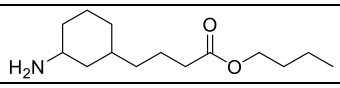
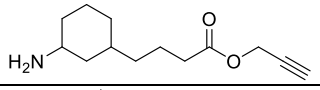
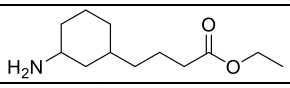
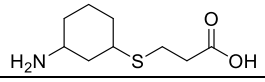
or any combination thereof.

3. The compound of claims 1 or 2, as defined by formula I(g), represented by any one of the following structures:

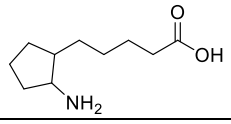
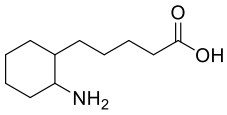
Compound	Structure
101	
102	
104	
105	
113	
114	
115	
116	
117	
118	
119	
120	

or as defined by formula X(a), represented by any one of the following structures:

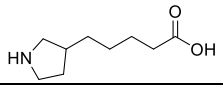
Compound	Structure

124	
125	
126	
139	

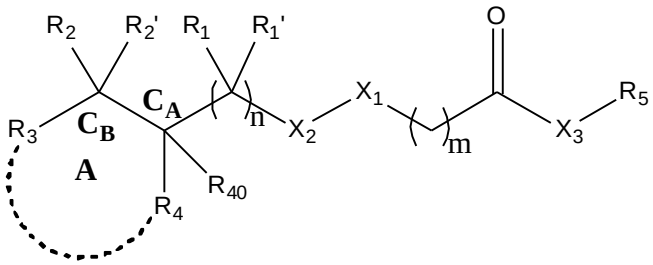
or as defined by formula X(c), represented by any one of the following structures:

Compound	Structure
131	
132	

or as defined by formula X(d), represented by the following structure:

Compound	Structure
123	

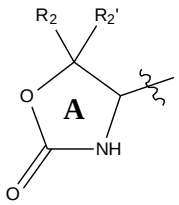
4. An herbicidal compound, represented by the structure of formula **I(ga):**



I(ga)

wherein

$\mathbf{C_A}$ and $\mathbf{C_B}$ are both chiral carbon centers, or $\mathbf{C_A}$ and $\mathbf{C_B}$ together with $\mathbf{R_3}$ and $\mathbf{R_4}$ are joined to form ring **A,** represented by the following structure:



$\mathbf{R_1}$, $\mathbf{R_1'}$, $\mathbf{R_2}$, $\mathbf{R_2'}$ and $\mathbf{R_{40}}$ are each independently H, C_1-C_5 linear or branched, unsubstituted alkyl, methyl, ethyl, propyl, iso-propyl, t-Bu, iso-butyl, pentyl, benzyl, C(O)-R_{10}, or C(O)-CH_3;

$\mathbf{R_3}$ is OH, SH, NH_2, $NHNH_2$, NHR, $N(R)_2$, NHC(O)OBz, -NHC(O)-R_{10}, $NHC(O)CH_3$, C_1-C_5 linear or branched, substituted or unsubstituted alkyl, methyl, ethyl, propyl, iso-propyl, t-Bu, iso-butyl, pentyl, substituted or unsubstituted C_3-C_8 cycloalkyl, C_1-C_5 linear or branched or C_3-C_8 cyclic haloalkyl,

C_1-C_5 linear or branched or C_3-C_8 cyclic alkoxy, substituted or unsubstituted C_3-C_8 heterocyclic ring, or substituted or unsubstituted aryl;

R_4 is NH_2, $NHNH_2$, $N(R)_2$, -NHC(O)-R_{10}, NHC(O)H, $NHC(O)CH_3$, C_1-C_5 linear or branched, substituted or unsubstituted alkyl, C_1-C_5 linear or branched or C_3-C_8 cyclic haloalkyl, C_1-C_5 linear or branched or C_3-C_8 cyclic alkoxy, substituted or unsubstituted C_3-C_8 cycloalkyl, substituted or unsubstituted C_3-C_8 heterocyclic ring, or substituted or unsubstituted aryl;

or **R_3** and **R_4** are joined together to form ring **A** as described above;

wherein **R_3** and **R_4** cannot both be NH_2, and

wherein if **R_3** is OH and **R_4** is NH_2, then **n** + **m** cannot be equal to 3;

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), C(=CH_2)-R_{10} (e.g., C(=CH_2)-C(O)-OCH_3, C(=CH_2)-CN), substituted or unsubstituted alkyl sulfone (e.g., SO_2-CH_2-cyclopentyl), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_{10} and **R_{11}** are each independently H, CN, C_1-C_5 linear or branched alkyl, C(O)R, or $S(O)_2R$;

or **R_{10}** and **R_{11}** are joined to form a substituted or unsubstituted C_3-C_8 heterocyclic ring;

R is C_1-C_5 linear or branched alkyl, C_1-C_5 linear or branched alkoxy, phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

m is 1 or 2;

n is 0, 1, 2 or 3;

X_1 is S, O, or CH_2;

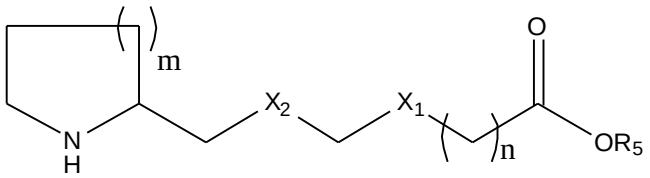
X_2 is S, O, or CH_2;

X_3 is O, NH or N-**R_{50}**;

R_{50} is H or C_1-C_5 linear or branched, substituted or unsubstituted alkyl;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof

or an herbicidal compound represented by the structure of formula **X(b)**:



X(b)

wherein

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl,

butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), C(=CH_2)-R_{10} (e.g., C(=CH_2)-C(O)-OCH_3, C(=CH_2)-CN), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_{10} is H, CN, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C(O)R (e.g., C(O)(OCH_3)), or $S(O)_2R$;

R is H, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C_1-C_5 linear or branched alkoxy (e.g., methoxy), phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

X_1 is S, O, CH_2, CH(R) or $C(R)_2$;

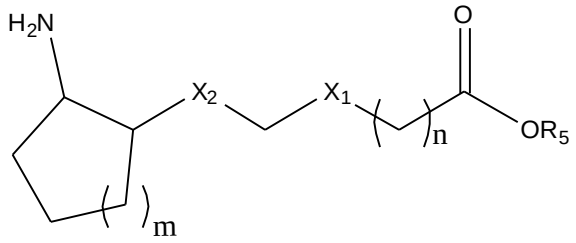
X_2 is S, O, CH_2, CH(R) or $C(R)_2$;

n is an integer number between 0 and 2;

m is an integer number between 1 and 3;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof;

or an herbicidal compound represented by the structure of formula **X(c)**:



X(c)

wherein

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), C(=CH_2)-R_{10} (e.g., C(=CH_2)-C(O)-OCH_3, C(=CH_2)-CN), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_{10} is H, CN, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C(O)R (e.g., C(O)(OCH_3)), or $S(O)_2R$;

R is H, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C_1-C_5 linear or branched alkoxy (e.g., methoxy), phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

X_1 is S, O, CH_2, CH(R) or $C(R)_2$;

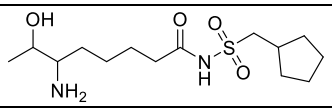
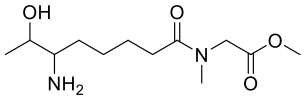
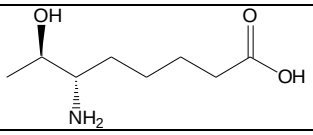
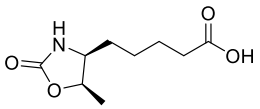
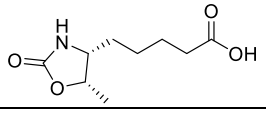
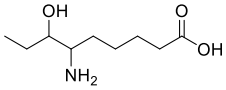
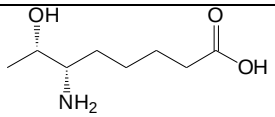
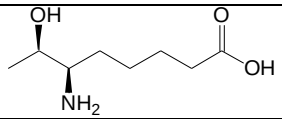
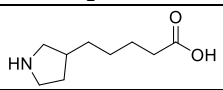
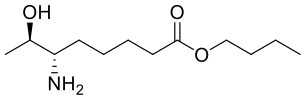
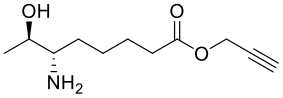
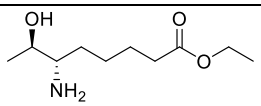
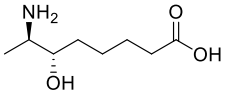
X_2 is S, O, CH_2, CH(R) or $C(R)_2$;

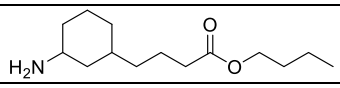
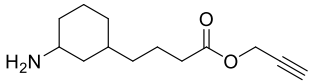
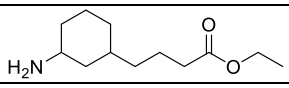
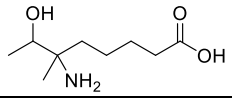
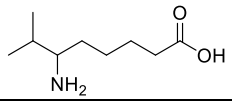
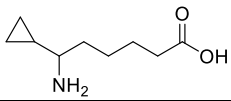
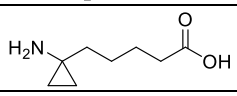
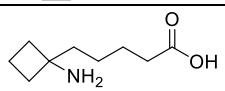
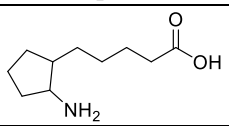
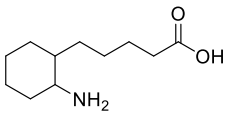
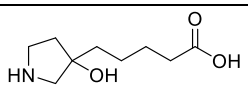
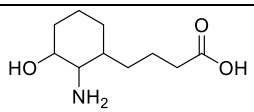
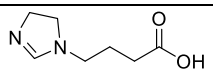
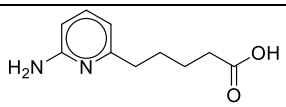
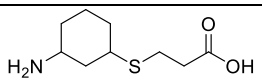
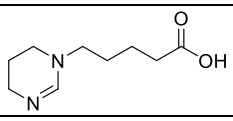
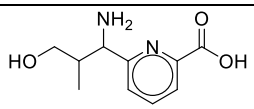
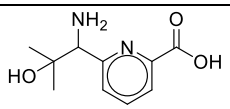
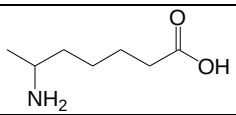
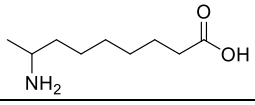
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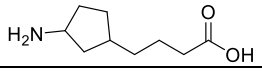
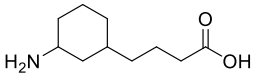
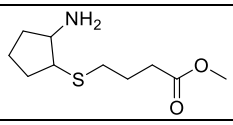
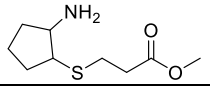
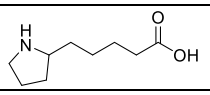
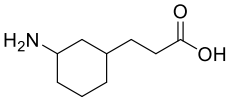
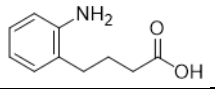
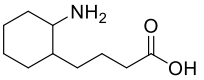
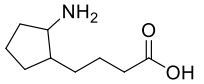
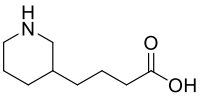
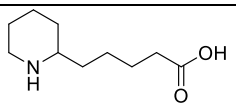
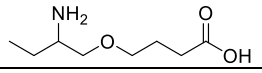
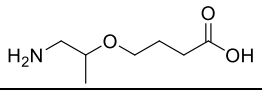
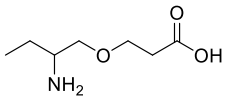
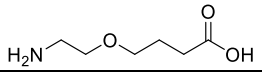
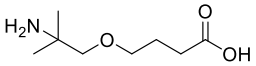
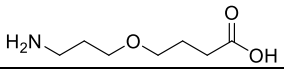
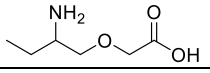
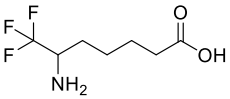
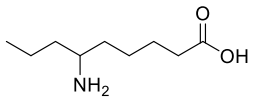
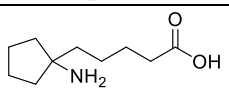
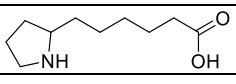
m is an integer number between 1 and 3;

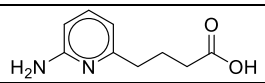
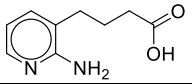
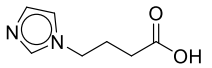
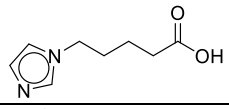
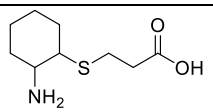
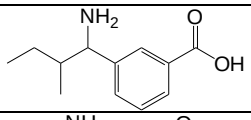
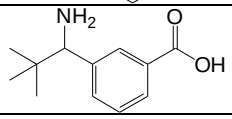
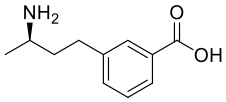
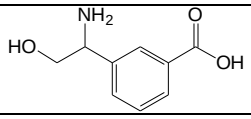
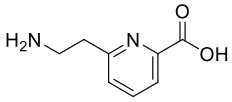
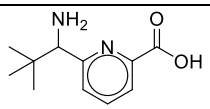
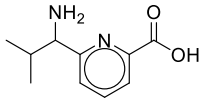
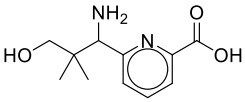
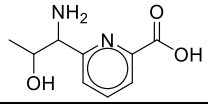
or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof;

or an herbicidal compound, represented by any one of the following structures:

Compound	Structure
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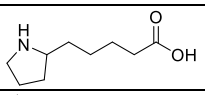
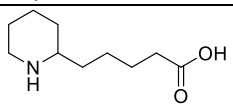
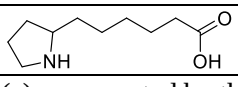
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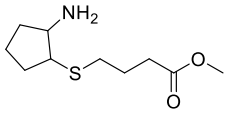
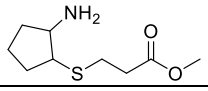
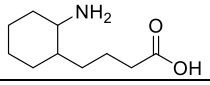
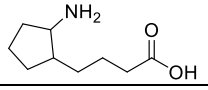
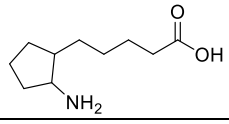
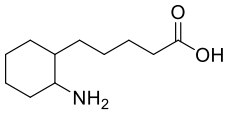
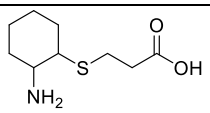
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or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof.

5. The herbicidal compound of claim 4, as defined by formula X(b), represented by the following structures:

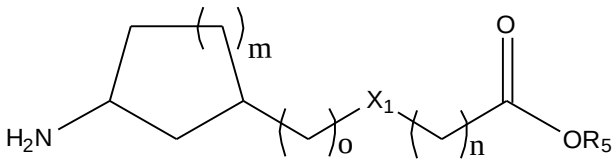
Compound	Structure
148	
155	
166	

or as defined by formula X(c), represented by the following structures:

Compound	Structure
146	
147	
152	
153	
131	
132	
171	

6. The compound of any one of claims 1-5, for use in controlling the growth of an undesired plant.

7. A compound represented by the structure of formula **X(a)**:



X(a)

wherein

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), C(=CH_2)-R_{10} (e.g., C(=CH_2)-C(O)-OCH_3, C(=CH_2)-CN), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_{10} is H, CN, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C(O)R (e.g., C(O)(OCH_3)), or $S(O)_2R$;

R is H, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C_1-C_5 linear or branched alkoxy (e.g., methoxy), phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

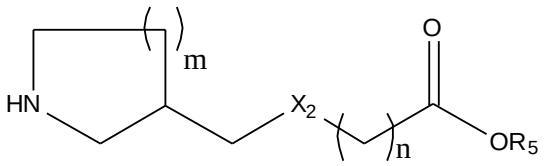
X_1 is S, O, CH_2, CH(R) or $C(R)_2$;

n and **o** are each independently an integer number between 0 and 2;

m is an integer number between 1 and 3;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof;

or a compound represented by the structure of formula **X(d)**:



X(d)

wherein

R_5 is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, CH_2SH, ethyl, butyl, CH_2-CCH, iso-propyl, CH_2-C(O)-OCH_3), C_2-C_5 linear or branched, substituted or unsubstituted alkenyl, C_2-C_5 linear or branched, substituted or unsubstituted alkynyl (e.g., CCH, CH_2-CCH,), C_1-C_5 linear or branched haloalkyl (e.g., CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), C(=CH_2)-R_{10} (e.g., C(=CH_2)-C(O)-OCH_3, C(=CH_2)-CN), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R_8 is $[CH_2]_p$

wherein **p** is between 1 and 10;

R_{10} is H, CN, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C(O)R (e.g., C(O)(OCH_3)), or $S(O)_2R$;

R is H, C_1-C_5 linear or branched alkyl (e.g., methyl, ethyl), C_1-C_5 linear or branched alkoxy (e.g., methoxy), phenyl, aryl or heteroaryl, or two gem R substituents are joined together to form a 5 or 6 membered heterocyclic ring;

X_2 is S, O, CH_2, CH(R) or $C(R)_2$;

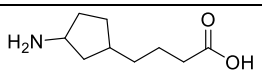
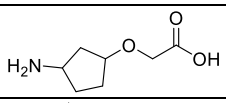
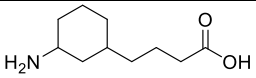
n is an integer number between 0 and 2;

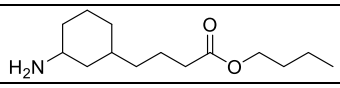
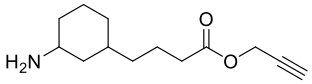
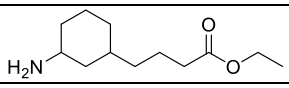
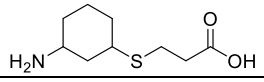
m is an integer number between 1 and 3;

or its agrochemically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, isotopic variant (e.g., deuterated analog), or any combination thereof;

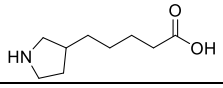
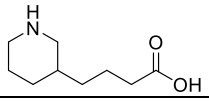
for use in controlling the growth of an undesired plant.

8. The compound of claim 7, as defined by formula X(a), represented by any one of the following structures:

Compound	Structure
143	
144	
145	

124	
125	
126	
139	

or as defined by formula X(d), represented by any one of the following structures:

Compound	Structure
123	
154	

9. The compound of any one of claims 1-8, wherein the compound is a substantially pure single stereoisomer;

or wherein the compound is the substantially pure *SR* stereoisomer, *RS* stereoisomer, *RR* stereoisomer, or *SS* diastereomer.

10. The compound of claim 9, wherein the substantial pure stereoisomer has a purity higher than 90%, preferably higher than 95%, most preferably higher than 98%.

11. The compound of claims 6-10, wherein the plant is a eudicot (dicot) or a monocotyledon (monocot); and/or wherein said plant is a weed.

12. The compound of claim 11,

wherein the dicot plant is *Arabidopsis thaliana*, and/or the monocot plant is *Dactyloctenium aegyptium* or *Eragrostis teff*;

wherein said weed comprises: *Abutilon theophrasti* , *Amaranthus palmeri*, *Ambrosia artemisiifolia* , *Alopecurus myosuroides* , *Avena sterilis* , *Chenopodium album* , *Conyza Canadensis* , *Digitaria sanguinalis* , *Echinochloa colona*, *Euphorbia heterophylla* , *Lolium perenne* , *Lolium rigidum* , *Matricaria chamomilla* , *Phalaris paradoxa* , *Poa annua* , *Portulaca oleracea* , *Setaria viridis*, *Solanum nigrum* or any combination thereof;

or combination thereof.

13. The compound of any one of claims 6-12, for use in pre-plant treatments, pre-emergence treatments, post-emergence treatments, or any combination thereof.