

105TH CONGRESS
1ST SESSION

H. R. 725

To amend the Competitive, Special, and Facilities Research Grant Act to provide increased emphasis on competitive grants to promote agricultural research projects regarding precision agriculture and to provide for the dissemination of the results of such research projects.

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 12, 1997

Mr. LEWIS of Kentucky (for himself, Mr. CRAPO, Mr. BUNNING, Mr. NETHERCUTT, Mr. CHAMBLISS, Mr. CANADY of Florida, Mr. HOSTETTLER, Mr. LAHOOD, Mr. LATHAM, Mr. HEFNER, Mr. LEACH, Mr. HOLDEN, Mrs. CHENOWETH, Mr. EWING, Mr. BARRETT of Nebraska, Mr. NEY, Mr. EVANS, Mr. POSHARD, and Mr. PASTOR) introduced the following bill; which was referred to the Committee on Agriculture

A BILL

To amend the Competitive, Special, and Facilities Research Grant Act to provide increased emphasis on competitive grants to promote agricultural research projects regarding precision agriculture and to provide for the dissemination of the results of such research projects.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the “Precision Agriculture
3 Research, Education, and Information Dissemination Act
4 of 1997”.

5 **SEC. 2. EMPHASIS ON COMPETITIVE GRANTS TO PROMOTE**
6 **PRECISION AGRICULTURE.**

7 (a) PROMOTION OF PRECISION AGRICULTURE.—Sub-
8 section (k) of the Competitive, Special, and Facilities Re-
9 search Grant Act (section 2 of Public Law 89–106; 7
10 U.S.C. 450i) is amended to read as follows:

11 “(k) EMPHASIS ON PRECISION AGRICULTURE.—

12 “(1) DEFINITIONS.—For purposes of this sec-
13 tion:

14 “(A) PRECISION AGRICULTURE.—The term
15 ‘precision agriculture’ means an integrated
16 information- and production-based farming sys-
17 tem that is designed to increase long-term, site
18 specific and whole farm production efficiencies,
19 productivity, and profitability while minimizing
20 unintended impacts on wildlife and the environ-
21 ment by—

22 “(i) combining agricultural sciences,
23 agricultural inputs and practices, agro-
24 nomic production databases, and precision
25 agriculture technologies to efficiently man-
26 age agronomic systems;

1 “(ii) gathering on-farm information
2 pertaining to the variation and interaction
3 of site-specific spatial and temporal factors
4 affecting crop production;

5 “(iii) integrating such information
6 with appropriate data derived from remote
7 sensing and other precision agriculture
8 technologies in a timely manner in order to
9 facilitate on-farm decisionmaking; and

10 “(iv) using such information to pre-
11 scribe and deliver site-specific application
12 of agricultural inputs and management
13 practices in agricultural production sys-
14 tems.

15 “(B) PRECISION AGRICULTURE TECH-
16 NOLOGIES.—The term ‘precision agriculture
17 technologies’ includes—

18 “(i) instrumentation and techniques
19 ranging from sophisticated sensors and
20 software systems to manual sampling and
21 data collection tools that measure, record,
22 and manage spatial and temporal data;

23 “(ii) technologies for searching out
24 and assembling information necessary for

1 sound agricultural production decision
2 making;

3 “(iii) open systems technologies for
4 data networking and processing that
5 produce valued systems for farm manage-
6 ment decisionmaking, including high band-
7 width networks, distributed processing,
8 spatial databasing, object technology, glob-
9 al positioning systems, data modeling, high
10 performance image processing, high resolu-
11 tion satellite imagery, digital
12 orthophotogrammetry simulation, geo-
13 graphic information systems, computer
14 aided design, and digital cartography; and

15 “(iv) machines that deliver informa-
16 tion based management practices, includ-
17 ing global positioning satellites, digital
18 field mapping, on-the-go yield monitoring,
19 automated pest scouting, and site-specific
20 agricultural input application to accom-
21 plish the objectives of precision agriculture.

22 “(C) ADVISORY BOARD.—The term ‘advi-
23 sory board’ means the National Agricultural
24 Research, Extension, Education, and Econom-
25 ics Advisory Board established under section

1 1408 of the National Agricultural Research,
2 Extension, and Teaching Policy Act of 1977 (7
3 U.S.C. 3123).

4 “(D) AGRICULTURAL INPUTS.—The term
5 ‘agricultural inputs’ includes all farm manage-
6 ment, agronomic, and field applied agricultural
7 production inputs, such as machinery, labor,
8 time, fuel, irrigation water, commercial nutri-
9 ents, livestock waste, crop protection chemicals,
10 agronomic data and information, application
11 and management services, seed, and other in-
12 puts used in agriculture production.

13 “(E) SYSTEMS RESEARCH.—The term ‘sys-
14 tems research’ means an integrated, coordi-
15 nated, and iterative investigative process, which
16 considers the multiple interacting components
17 and aspects of precision agriculture systems, in-
18 cluding synthesis of new knowledge regarding
19 the physical-chemical-biological processes and
20 complex interactions with cropping and natural
21 resource systems, precision agriculture tech-
22 nologies development and implementation, data
23 and information collection and interpretation,

1 production scale planning, production-scale im-
2 plementation, and farm production efficiencies,
3 productivity, and profitability.

4 “(2) EMPHASIS ON RESEARCH, EDUCATION,
5 AND INFORMATION DISSEMINATION GRANTS.—The
6 Secretary of Agriculture, in collaboration with the
7 advisory board, shall ensure that research, edu-
8 cation, and information dissemination grants made
9 under subsections (b) are, where appropriate, con-
10 sistent with the development and promotion of preci-
11 sion agriculture. Research, education, and informa-
12 tion dissemination projects supported by such grants
13 and designed to develop and demonstrate precision
14 agriculture shall address one or more of the follow-
15 ing:

16 “(A) The study and promotion of compo-
17 nents of precision agriculture technologies using
18 a systems research approach that would in-
19 crease long-term, site-specified and whole farm
20 production efficiencies, productivity, profit-
21 ability.

22 “(B) The improvement in the understand-
23 ing of agronomic systems, including, soil, water,
24 land cover, and meteorological variability.

1 “(C) The development, demonstration, and
2 dissemination of information regarding preci-
3 sion agriculture technologies and systems into
4 an integrated program.

5 “(D) The promotion of systems research
6 and education projects focusing on the integra-
7 tion of the multiple aspects of precision agri-
8 culture, including development, production-scale
9 implementation, and farm production effi-
10 ciencies, productivity, and profitability.

11 “(E) The education of agricultural produc-
12 ers and consumers regarding the benefits of
13 precision agriculture as it relates to increased
14 long-term farm production efficiencies, produc-
15 tivity, profitability, as well as the maintenance
16 of the environment and improvements in inter-
17 national trade.

18 “(F) The provision of training and edu-
19 cational programs for State cooperative exten-
20 sion services agents, agricultural producers, ag-
21 ricultural input machinery, product, and service
22 providers, certified crop advisers and other pro-
23 fessionals involved in the agricultural produc-
24 tion and transfer of integrated precision agri-
25 culture technology.

1 “(3) PRIORITIES FOR RESEARCH, EDUCATION,
2 AND INFORMATION DISSEMINATION GRANTS.—In
3 making grants to eligible entities under subsection
4 (b) regarding precision agriculture, the Secretary, in
5 collaboration with the advisory board, shall give pri-
6 ority to research, education, and information dis-
7 semination projects that are designed to accomplish
8 the following:

9 “(A) The use of precision agriculture tech-
10 nologies and a systems research approach to in-
11 crease long-term site-specific and whole farm
12 production efficiencies, productivity, profit-
13 ability.

14 “(B) The integration of research, edu-
15 cation, and information dissemination compo-
16 nents in a practical and readily available man-
17 ner so that the findings of the project will be
18 made readily usable by farmers.

19 “(C) The promotion of the efficient use of
20 agricultural inputs, rather than the uniform re-
21 duction in the use of agricultural inputs.

22 “(D) The maximization of the involvement
23 and cooperation of precision agriculture produc-
24 ers, certified crop advisers, State cooperative
25 extension services agents, and agricultural input

1 machinery, product and service providers in
2 precision agriculture systems research projects
3 involving on-farm research, education, and in-
4 formation dissemination of precision agri-
5 culture.

6 “(E) The cooperation among farms that
7 are managed using precision agriculture farm
8 production practices, nonprofit organizations,
9 agribusiness, agricultural input machinery,
10 product, and service providers, land-grant col-
11 leges and universities, the State cooperative ex-
12 tension services, and Government agencies (in-
13 cluding National laboratories).

14 “(F) The benefits of precision agriculture
15 in relationship to global food production, reduc-
16 ing world hunger, world population trends, and
17 efforts to maintain and enhance the environ-
18 ment.

19 “(G) The diversity of United States agri-
20 cultural production, including production on
21 family owned and operated farms, large acreage
22 farms, small acreage farms, and mixed crop,
23 specialty crop, commodity crop, and livestock
24 operations.

1 “(H) The maximization of collaboration
2 with multiple agencies and other partners that
3 include leveraging of funds and resources.

4 “(4) EDUCATION AND INFORMATION DISSEMI-
5 NATION.—

6 “(A) RESERVATION OF FUNDS FOR
7 PROJECTS.—Of the funds allocated for competi-
8 tive research grants under subsection (b) relat-
9 ed to precision agriculture, the Secretary shall
10 reserve a portion of such funds for education
11 and information dissemination projects regard-
12 ing precision agriculture.

13 “(B) COMPLIANCE WITH PRIORITIES FOR
14 INFORMATION DISSEMINATION.—In the dissemi-
15 nation of information derived from research
16 projects regarding precision agriculture that are
17 supported by grants made under subsection (b),
18 the Secretary shall ensure that both employees
19 of the Department of Agriculture and grant re-
20 cipients comply with the priorities specified in
21 paragraph (3).

22 “(5) PRECISION AGRICULTURE PARTNER-
23 SHIPS.—

24 “(A) ESTABLISHMENT.—For the purposes
25 of this section, the Secretary, in collaboration

1 with the advisory board, shall encourage the es-
2 tablishment of appropriate multi-state and na-
3 tional partnerships or consortia between—

4 “(i) land-grant colleges and univer-
5 sities, State Agricultural Experiment Sta-
6 tions, State cooperative extension services,
7 other colleges and universities with demon-
8 strable expertise regarding precision agri-
9 culture, agencies of the Department of Ag-
10 riculture, National laboratories, agri-
11 businesses, agricultural equipment and
12 input manufacturers and retailers, certified
13 crop advisers, commodity organizations,
14 other Federal or State government entities
15 and agencies, and non-agricultural indus-
16 tries and nonprofit organizations with de-
17 monstrable expertise regarding precision
18 agriculture; and

19 “(ii) the persons and entities de-
20 scribed in clause (i) and agricultural pro-
21 ducers and other land managers.

1 “(B) PARTNERSHIP BETWEEN NATIONAL
2 LABORATORIES AND DEPARTMENT OF AGRICULTURE.—The partnerships established pursuant to this paragraph shall include the partnership entered into (before the date of the enactment of this paragraph) by the Secretary of Energy, on behalf of the National laboratories, and the Secretary of Agriculture to promote cooperation and coordination between the National laboratories and agencies of the Department of Agriculture in the areas of systems research, technology research and development, and the transfer, utilization, and private-sector commercialization of technology.

15 “(C) ROLE OF PARTNERSHIPS.—Partnerships described in subparagraphs (A) and (B) shall be eligible grantees for conducting systems research (including on-farm research) regarding precision agriculture and precision agriculture technologies.

21 “(6) SPECIAL ASPECTS OF RESEARCH
22 GRANTS.—As part of a research project regarding
23 precision agriculture that is funded under subsection
24 (b), the grant recipient shall agree to perform the
25 following, to the extent practicable:

1 “(A) Study precision agriculture produc-
2 tion systems that are located in areas that pos-
3 sess diverse crop, soil, climate, and physical
4 characteristics.

5 “(B) Study farms that are or have been
6 managed using precision agriculture farm pro-
7 duction practices that rely on the efficient use
8 of agricultural inputs and precision agriculture
9 technologies to increase farm production effi-
10 ciency, productivity, and profitability.

11 “(C) Conduct demonstration projects on
12 farms that will be managed using precision ag-
13 riculture.

14 “(D) Take advantage of the experience and
15 expertise of agricultural producers through
16 their direct participation and leadership in
17 projects.

18 “(E) Utilize advanced access and commu-
19 nications technologies to transfer practical, reli-
20 able, and timely information to agricultural pro-
21 ducers concerning precision agriculture prac-
22 tices, technologies, and systems.

23 “(F) Promote partnerships among produc-
24 ers, nonprofit organizations, agribusinesses, ag-
25 ricultural input machinery, product, and service

1 providers, colleges and universities, the State
2 cooperative extension services, and Government
3 agencies (including National laboratories).”.

4 (b) REPORTING REQUIREMENTS.—Subsection (l) of
5 the Competitive, Special, and Facilities Research Grant
6 Act (section 2 of Public Law 89–106; 7 U.S.C. 450i) is
7 amended to read as follows:

8 “(l) REPORTING REQUIREMENTS OF GRANT RECIPI-
9 ENTS.—In addition to the record keeping responsibilities
10 of recipients of assistance under this section, as prescribed
11 by the Secretary under subsection (f), the Secretary shall
12 prescribe regulations to require grant recipients to submit
13 to the Secretary periodic reports regarding the research,
14 education, and information dissemination activities sup-
15 ported with such assistance so as to enhance the useful-
16 ness of the monitoring and evaluation system developed
17 by the Secretary under section 1413A(b) of the National
18 Agricultural Research, Extension, and Teaching Policy
19 Act of 1977 (7 U.S.C. 3129(b)).”.

20 (c) ENTITIES ELIGIBLE FOR GRANTS.—Subsection
21 (b)(1) of the Competitive, Special, and Facilities Research
22 Grant Act (section 2 of Public Law 89–106; 7 U.S.C.
23 450i) is amended—

1 (1) by inserting after “Federal agencies” the
2 following: “(including National laboratories as de-
3 fined in section 12(d)(2) of the Stevenson-Wydler
4 Technology Innovation Act of 1980 (15 U.S.C.
5 3710a(d)(2)))”; and

6 (2) by inserting after “corporations” the follow-
7 ing: “(including agricultural input machinery, prod-
8 uct, and service providers)”.

9 (d) PRECISION AGRICULTURE RESEARCH, EXTEN-
10 SION, AND EDUCATION, UNDER FUND FOR RURAL AMER-
11 ICA.—Section 793(c)(2)(A) of the Federal Agriculture Im-
12 provement and Reform Act of 1996 (Public Law 104–127;
13 7 U.S.C. 2204f(e)(2)(A)) is amended—

14 (1) by striking “and” at the end of clause (vii);

15 (2) by striking the period at the end of clause
16 (viii) and inserting “; and”; and

17 (3) by inserting after clause (viii) the following
18 new clause:

19 “(ix) develop and promote precision
20 agriculture and precision agriculture tech-
21 nologies using a systems research ap-
22 proach, as such terms are defined in sub-
23 section (k)(1) of the Competitive, Special,
24 and Facilities Research Grant Act (section
25 2 of Public Law 89–106; 7 U.S.C. 450i).”.

1 (e) TECHNICAL AMENDMENT.—Subsection (b)(9)(A)
2 of the Competitive, Special, and Facilities Research Grant
3 Act (section 2 of Public Law 89–106; 7 U.S.C. 450i) is
4 amended by striking “subsection (j)” and inserting “sub-
5 section (k)”.

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