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**U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE**

**OBJECTIVE DESCRIPTION OF VARIETY
Red Clover (*Trifolium pretense* including *T.p.* var. *sativum*)**

| | | |
|---|---------------------------------------|-----------------------|
| NAME OF APPLICANT (S) | TEMPORARY OR EXPERIMENTAL DESIGNATION | VARIETY NAME |
| ADDRESS (Street and No. or RD No., City, State, Zip Code and Country) | | FOR OFFICIAL USE ONLY |
| | | PVPO NUMBER |

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (i.e., or) when the number is either 99 or less or 9 or less. Characteristics described, including numerical measurements, should represent those which are typical for the variety. Measured data should be for spaced plants. Any recognized color fan, e.g. Royal Horticultural Color Chart, may be used to determine plant color; designate system used: _____ . Give location of test area _____. Ranges of values are valuable and may be included with additional description elsewhere in the application. Note: For single plant data a minimum of 100 plants is suggested.

1. TYPE:

1 = Double Cut (medium) 2 = Single Cut (mammoth) 3 = Other (Specify) _____

2. PLOIDY:

1 = Diploid 2 = Tetraploid 3 = Other (Specify) _____

3. PRODUCTIVE PERSISTENCE: (Usual duration of planting)

1 = Annual 2 = Biennial 3 = Short Lived Perennial (3 -4 Years)

4. ADAPTATION: (e.g. = northcentral and southcentral

1 = Northeast 2 = Northcentral 3 = Southcentral 4 = Southeast 5 = West 6 = Other (Specify) _____

5. MATURITY:

% Plants flowering in seedling year

Beginning of spring growth:

Days Earlier Than Standard Variety
 Days Later Than Standard Variety

Time of flowering (50% of plants in bloom): (from spring growth in non-seeding year)

Days Earlier Than Standard Variety
 Days Later Than Standard Variety

6. PLANT HEIGHT: (From soil level to top of flowering head at 50% flowering)

| | | |
|--|--|---------------------------------------|
| <input type="text"/> <input type="text"/> <input type="text"/> cm Tall | <input type="text"/> <input type="text"/> <input type="text"/> cm Shorter Than | <input type="text"/> Standard Variety |
| | <input type="text"/> <input type="text"/> <input type="text"/> cm Taller Than | <input type="text"/> Standard Variety |

7. FLOWERING STEM: (from first noncontracted internode, longer than 0.5 cm., to tip if flowering head)

| | |
|--|-------------------------------|
| <input type="text"/> <input type="text"/> <input type="text"/> | No. Flowering Stems per Crown |
| <input type="text"/> <input type="text"/> <input type="text"/> | No. Internodes |
| <input type="text"/> <input type="text"/> <input type="text"/> | cm. Length of Stem |

Hairiness: Give percentage of plants with each type of surface (Total = 100%)

| | |
|--|---|
| <input type="text"/> <input type="text"/> <input type="text"/> | % Hairs Projecting Upward |
| <input type="text"/> <input type="text"/> <input type="text"/> | % Hairs Projecting Downward or at Right Angles |
| <input type="text"/> <input type="text"/> <input type="text"/> | % Glabrous (Fewer than 5 hairs/1 cm. path along central internodes) |

Habit: Give percentage of plants with each type of habit. Stem habit should be determined by the angle of lowest stems to the horizontal (soil level) at 50% flowering.

| | | | |
|---|---|---|--|
| <input type="text"/> <input type="text"/> <input type="text"/> % Prostrate (0 - 30°) | <input type="text"/> <input type="text"/> <input type="text"/> % Semi-Prostrate (30 - 45°) | <input type="text"/> <input type="text"/> <input type="text"/> % Semi-Erect (45 - 60°) | <input type="text"/> <input type="text"/> <input type="text"/> % Erect (60 - 90°) |
|---|---|---|--|

8. LEAF: (Central leaflet of 3rd node below flowering head)

| | | |
|--|---|---------------------------------------|
| <input type="text"/> <input type="text"/> <input type="text"/> mm Width | <input type="text"/> <input type="text"/> <input type="text"/> mm Narrower Than | <input type="text"/> Standard Variety |
| | <input type="text"/> <input type="text"/> <input type="text"/> mm Wider Than | <input type="text"/> Standard Variety |
| <input type="text"/> <input type="text"/> <input type="text"/> mm Length | <input type="text"/> <input type="text"/> <input type="text"/> mm Shorter Than | <input type="text"/> Standard Variety |
| | <input type="text"/> <input type="text"/> <input type="text"/> mm Longer Than | <input type="text"/> Standard Variety |

Color:

| | | | | |
|----------------------|--------------------------------|------------------|---------------------------------|----------------|
| <input type="text"/> | 1 = Light Green (Altaswede) | 2 = Medium Green | 3 = Dark Green (Hungaropoli) | 4 = Blue Green |
|----------------------|--------------------------------|------------------|---------------------------------|----------------|

Leaf Marking (at 50% flowering: Note: Categories below allow for increasingly detailed description of the same data. The diagram illustrates the terms: 1 = Apical 2A = Full 2B = Extended 2C = Delta 2D = Incomplete 3 = Basal)

Presence of mark: Of total plants, give percentage of marked and unmarked plants (Total = 100%)

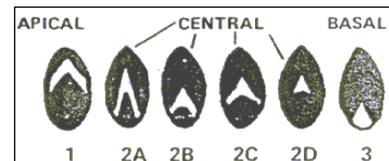
| | |
|---|---|
| <input type="text"/> <input type="text"/> <input type="text"/> % Absent | <input type="text"/> <input type="text"/> <input type="text"/> % Marked |
|---|---|

Position of mark: Of total plants, give percentage with leaf mark in each position (Total = % marked above)

| | | |
|---|--|--|
| <input type="text"/> <input type="text"/> <input type="text"/> % Apical | <input type="text"/> <input type="text"/> <input type="text"/> % Central | <input type="text"/> <input type="text"/> <input type="text"/> % Basal |
|---|--|--|

Shape of mark: Of total plants, give percentage with central leaf marks having each shape (Total = % marked above)

| | | | |
|---|---|--|---|
| <input type="text"/> <input type="text"/> <input type="text"/> % Full | <input type="text"/> <input type="text"/> <input type="text"/> % Extended | <input type="text"/> <input type="text"/> <input type="text"/> % Delta | <input type="text"/> <input type="text"/> <input type="text"/> % Incomplete |
|---|---|--|---|

**9. FLOWER COLOR:** (Determine color on freshly opened florets) Give percentage of plants with each color (Total = 100%).

Colors are referenced to the Munsell Color System.

| | |
|--|---|
| <input type="text"/> <input type="text"/> <input type="text"/> % White | <input type="text"/> <input type="text"/> <input type="text"/> % Light Pink (5RP 8/4) |
| <input type="text"/> <input type="text"/> <input type="text"/> % Medium Pink (5RP 7/6) | <input type="text"/> <input type="text"/> <input type="text"/> % Dark Pink |
| <input type="text"/> <input type="text"/> <input type="text"/> % Red (5RP 5/10) | <input type="text"/> <input type="text"/> <input type="text"/> % Other _____ |

10. SEED COLOR: Maximum color development in unstored, mature seed (at beginning of calyx browning). Give percentage of plants with each seed color (Total = 100%).

% Yellow

% Yellow with some Purple

% Purple

% Purple with some Yellow

% Other (Specify) _____ (attach explanation)

11. DISEASE AND PEST RESISTANCE: (0 = Not Tested 1 = Susceptible 2 = Resistant) If variety is claimed to be resistant or to show intermediate reaction, substantiating test scores should be attached clearly identifying disease, application variety, check varieties, date and location of test and range and direction of test scores.

A. Diseases:

Crown Rot (*Sclerotinia trifoliorum*)
 Northern Anthracnose (*Kabatella caulivora*)
 Southern Anthracnose (*Colletotrichum trifolii*)
 Target Spot (*Stemphylium sarcinaeformae*)
 Pepper Spot (*Leptosphaeralina trifolii*)
 Red Clover Vein Mosaic Virus
 Nematode (Specify) _____

Root Rot (*Fusarium spp.*)
 Summer Black Stem (*Cercospora zebrina*)
 Black Stem (*Phoma trifolii*)
 Powdery Mildew (*Erysiphe polygoni*)
 Black Patch (*Rhizoctonia leguminicola*)
 Bean Yellow Mosaic Virus
 Other (Specify) _____

B. Insects

Clover Root Borer (*Hylastinus obsurus*)
 Sweetclover Weevil (*Sitona cylindricollis*)
 Lesser Clover Leaf Weevil (*Hypera nigrirostris*)
 Yellow Clover Aphid (*Therioaphis trifolii*)
 Clover Seed Midge (*Dasineura leguminicola*)
 Clover Leafhopper (*Aceratagallia sanguinolental*)

Clover Root Curculio (*Satona hispidula*)
 Clover Seed Chalcid (*Bruchophagus platyptera*)
 Potato Leafhopper (*Empoasca fabae*)
 Meadow spittlebug (*Philaenus spumarius*)
 Pea Aphid (*Acrythosiphon pisum*)
 Other (Specify) _____

12. Indicate the variety most closely resembling the application variety for the following:

| CHARACTER | VARIETY | CHARACTER | VARIETY |
|------------------|---------|--------------------|---------|
| Leaflet shape | | Seed color | |
| Cutting recovery | | Late season growth | |
| Winter hardiness | | Persistence | |

REFERENCES:

Hawkins, R. P. 1953. Investigations on local strains of herbage plant II. Types of red clover and their identification. J. Brit. Grassland Soc. 8, 213-218.
 Williams, R. D. 1927. Red clover investigations, 1919 – 1926. Welsh Plant Breeding Station Bull., Ser. H. No. 7.

COMMENTS: (If additional space is necessary, use reverse side)