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大豆描述符

DESCRIPTORS FOR SOYABEAN

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国际植物遗传资源委员会

大豆描述符

国际植物遗传资源委员会秘书处

1984年 罗马

国际植物遗传资源委员会是在国际农业研究磋商小组领导下的一个自主的国际科学组织。国际植物遗传资源委员会是由国际农业研究磋商小组于1974年建立的，由一名主席和16名委员组成，并由联合国粮食及农业组织提供执行秘书处。国际植物遗传资源委员会的基本职责，如磋商小组所确定的，是促进成立国际遗传资源中心网，进一步收集、保存、记载、评价和使用植物种质，从而提高全世界人民的生活和福利水平作出贡献。该磋商小组从其成员中筹集资金用以满足该委员会所需的预算。

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联合国粮食及农业组织

植物生产及保护处

作物遗传资源中心

国际植物遗传资源委员会执行秘书处

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序 言

这份描述符表是根据作物专家所建议的描述符和描述号码，采用国际植物遗传资源委员会的标准格式编写成的。国际植物遗传资源委员会鼓励收集本表前四类的资料：①植物遗传资源收集品；②采集；③④特性记述和初步评价。国际植物遗传资源委员认为第①-④类的资料是任何一种收集品所应具备的最起码条件。其他描述符则在自第⑤类起的往后各类中给出。这些描述符将使人们能把进一步的特性记述和评价资料进行简单的编码，并能作为任何使用者按国际植物遗传资源委员会的格式增制描述符的实例。

这些建议的编码虽非绝对不能更改，但是这种格式却得到国际植物遗传资源委员会的充分支持并已向全世界推广。本描述符表是一种国际通用的格式，从而产生一种表述一切植物遗传资源资料的全世界都能懂得的“语言”。采用这一系统用于一切资料的编码，或者至少搞出一种转换法来把其他系统转成国际植物遗传资源委员会的格式，将会对资料的贮存、检索和交流提供一种迅速、可靠而有效的工具。这将大大地有助于通过国际植物遗传资源网络利用种质资源。因此，我们建议严格按照本描述符表来制作下列资料：给描述符编号及次序；使用特定的描述符，和使用推荐的描述号码。

罗马国际植物遗传资源委员会秘书处欢迎对描述符表提出任何修改的建议。

大豆描述符修订表

现在国际植物遗传资源委员会在遗传资源文献中使用了下列定义：

- (1) 基本资料 (采集人员记录的收集品标识符和资料)；
- (2) 特性记述 (记录那些高度遗传的特性，这些特性是能用肉眼容易看到的并且在各种环境条件下都会表现的)；
- (3) 初步评价 (记录数目有限的其他特性，这些特性是这种特定作物的使用者公认为可取的。)

特性记述和初步评价由质种库的主管人负责，而进一步的特性记述和评价则应由植物育种工作者进行。进一步评价的资料应当送回种质库主管人那里以便保存资料档案。

为国际所接受的描述符号码的标定或使用的下列准则应按下述办法执行：

- ① 使用公制单位来测量；
- ② 连续变化的各种描述符分为 1 - 9 级。本表作者有时仅选用其中若干描述号码，例如 3、5、7 级。在出现这种情形时，1 - 9 等仍然可以被采用，只要伸延或加插未列出的号码即可。例如 8 (病虫害感病性)，1 = 感病性极低，8 = 感病性高至极高；
- ③ 特性的存在或不存在分别记录作 + (为存在) 和 0 (为不存在)；
- ④ 有时描述符会应用于并非均匀一致的收集品 (例如，混合收集品库，遗传分隔)，当该描述符的性状是连续性时，应报道平均值及标准差，假如是非连续性的，则报道平均值和 ‘×’；
- ⑤ 描述符不适用时，用 ‘0’ 来表示描述符值。例如，如果一种收集品不成花，那么在下述描述符上标以 ‘0’；

花的颜色

- 1 白色
- 2 黄色
- 3 红色
- 4 紫色

- ⑥ 在资料还未得到时，用空白表示；
- ⑦ 颜色标准图，当处理未分级的颜色特性时，我们极力推荐使用颜色标准

图。比如，皇家园艺学会颜色图，梅休恩 (Methun) 颜色手册，芒塞
尔 (Munsell) 植物组织颜色图。(所使用的确切图表应在描述符 11
“附注”中作明确说明)。

基 本 资 料

1 收集品资料

1.1 收集品编号

在一件收集品进入种质库时,单位主管人即予以编号,该编号将成为此收集品的唯一标识符。一旦定下了编号,这一编号将永不改作种质库中另一件收集品的编号。即使某一收集品丢失,此收集品的编号仍然不能再用。在编号之前应加上字母,以作鉴别基因库或国家系统之用。(如MG表示某一种收集品来自意大利巴里基因库。PI表示美国系统内的一个收集品)。

1.2 捐赠者名字

捐赠该种质的机构或个人的名字

1.3 捐赠者的编号

由捐赠者所定的收集品编号

1.4 与收集品有关的其他数字(其他数字可以作为1.4.3等加上)

据知其他收集品库用于该收集品的任何其他编号,例如,美国农业部的植物目录号码(不是指采集号码,见2.1)。

1.4.1 其他号码 1

1.4.2 其他号码 2

等等

1.5 学 名

1.5.1 属

1.5.2 种

1·6 谱系／栽培品系名称
育种材料的命名和名称

1·6·1 谱系号码

1·6·2 栽培品系名称

1·7 获得日期

收集品进入种质库的年月，年月用数字表示，例如 6 月 = 06，
1981 年 = 81

1·7·1 月份

1·7·2 年份

1·8 最后一次增生或再繁殖的日期

年月用数字表示，例如，10 月 = 10，1978 年 = 78

1·8·1 月份

1·8·2 年份

1·9 收集品量

收集品的克数或种子的约数（如果已知数量，就具体说明 100
粒种子的重量）

1·10 收集品增生的次数

自从原始收集以来，增生或再繁殖的次数

2 采集资料

2·1 采集者编号

样品采集者所定的原始编号通常是由采集者的姓名或缩写组成，

并在采集者姓名后附以号码。该项目对鉴别不同种质库中的重复样品十分重要。无论子样品送到什么地方都应带有此一号码。

2·2 样品采集研究所

采集/主持原始样品的研究所或人

2·3 原始样品采集的日期

用数字表示, 例如, 3月 = 03, 1980 = 80

2·3·1 月份

2·3·2 年份

2·4 采集国家或该栽培品系/变种培育成功的国家

应使用联合国统计处认可的用3个字母的缩写法。这些缩写的副本可从国际植物遗传资源委员会秘书处得到, 并已发表在粮农组织/国际植物遗传资源委员会的资源通讯第49号中

2·5 省/州

采集样品的国家的一级行政区划的名称

2·6 采集地点

标明距最近城镇、乡村的公里数和方向或地图坐标方格标号(例如, 廷巴克图7S是指廷巴克图以南7公里)

2·7 采集地点的纬度

在几度几分之一之后标以N(表示北纬)或S(表示南纬), 例如
1030 S

2·8 采集地点的经度

在几度几分之一之后标以E(表示东经)或W(表示西经), 例如

7625 W

2·9 采集区的海拔高度

海平面以上高度，以米计数

2·10 采集品来源

- 1 野生植物
- 2 农田
- 3 农场仓库
- 4 后院
- 5 乡村市场
- 6 商业市场
- 7 研究所
- 8 其他(在描述符 11 的“附注”中说明)

2·11 样品状况

- 1 野生植物
- 2 杂草
- 3 培育者品系
- 4 原始培养品系/土生品种
- 5 先进的栽培品系(培育品种)
- 6 其他(在描述符 11 “附注”中作具体说明)

2·12 当地的名称

农民给栽培品种/土生品种/杂草取的名称

2·13 采集样品的植物数目

能产生这种样品的采集植物的约数

2·14 照片

是否在采集时拍摄了收集品环境的照片?

0 无

+ 有

2·15 采集者作的其他记录

采集者应记录生态资料,就栽培的大豆来说,应记录所使用的栽培过程,例如灌溉、播种季节等。

特性记述和初步评价资料

3 现场资料

3·1 记述特性和作初步评价的国家

3·2 地点(研究所)

3·3 负责特性记述人的名字

3·4 播种日期

3·4·1 日

3·4·2 月

3·4·3 年

3·5 收获日期

3·5·1 日

3·5·2 月

3·5·3 年

4 植物资料

4·1 营养体

4·1·1 茎生长型 (见图)

- 3 有限生长
- 5 半有限生长
- 7 无限生长

4·1·2 小叶数目

- 3 3
- 5 4-6
- 7 7以上

4·1·3 小叶形状

由主茎中部发育完全的末端小叶长/宽比来判断

- 3 狭窄型(长/宽比 2·2 或以上) = ‘披针形的’
- 5 中间型(长/宽比 1·9·2·1)
- 7 阔叶型(长/宽比 1·8 或以下) = ‘卵形的’

4·1·4 叶毛

- 0 无
- +

4·1·5 叶毛的密度

- 3 稀疏
- 5 半稀疏

7 正常

9 密的

4·1·6 叶毛的颜色

1 灰色

2 淡棕色

3 棕色 = ‘黄褐色’

4·1·7 叶毛形式 (见图)

1 直立

2 半紧贴

3 紧贴

4 卷曲

5 尖端逆生

4·2 花序

4·2·1 花冠颜色

3 白色

5 咽红

7 紫色

4·2·2 成熟荚颜色

3 黄褐色

5 棕色

7 黑色

4·3 种子

4·3·1 种皮颜色

- 1 黄白色
- 2 黄色
- 3 绿色
- 4 浅黄色
- 5 红棕色
- 6 灰色
- 7 不完全黑色(浅黄色有黑色阴影)
- 8 黑色

4.3.2 种皮类型

- 1 光种脐
- 2 暗种脐
- 3 鞍型
- 4 条带状

4.3.3 种脐颜色

- 1 黄色
- 2 浅黄色
- 3 棕色
- 4 绿色
- 5 灰色
- 6 不完全黑色(=带浅黄色外环的黑色)
- 7 黑色
- 8 其他颜色(在描述符 11 “附注”中说明)

4.3.4 种皮的表面光泽

- 3 光亮
- 5 中等
- 7 暗淡
- 9 重腊被

4.3.5 种脐上的种阜

0 无

+ 有

4.3.6 100粒种子重量

通常在13-15%含水量时测定的绝对重量(以克计)

4.3.7 子叶颜色

1 黄色

2 绿色

进一步特性记述和评价

5 现场资料

5.2 地点(研究所)

5.3 负责评价的人名

5.4 播种日期

5.4.1 日

5.4.2 月

5.4.3 年

5.5 收获日期

5.5.1 日

5.5.2 月

5.5.3 年

5·6 种植类型

- 5·6·1 行距
- 5·6·2 穴距
- 5·6·3 每行 1 米长中的株数
- 5·6·4 株数/平方米

6 植物资料

6·1 营养体

- 6·1·1 出苗天数
从播种到 50% 出苗率的天数
- 6·1·2 幼苗活力
在第一片三小叶的叶子展开时进行估计
 - 3 不好
 - 5 中等
 - 7 茁壮
- 6·1·3 下胚轴的颜色
在初生叶展开时，做下记录
 - 1 绿色
 - 2 紫色
- 6·1·4 小叶大小
记录长(厘米) × 宽(厘米)
 - 3 小(70 平方厘米以下)
 - 5 中(71 到 149 平方厘米)
 - 7 大(150 平方厘米以上)

6·1·5 叶柄的有无

0 无

+ 有

6·1·6 在 R_1 时的植物高度

随机选择 20 株植物实际测量其高度的平均厘米数

6·1·7 开花时的主茎节数' (R_1)

如 6·1·8 所注

6·1·8 成熟时的主茎节数 (R_8)

细则由各中心拟定，可用一个标准的品种作对照（应在描述符 11 “附注”中作具体说明）

6·1·9 R_8 时的植物高度

随机选择 20 株植物，实际测量其高度的平均厘米数

6·1·10 每株植物成熟时，初生枝条（至少具有 2 个节）数

随机选择 20 株植物，取其平均数

6·1·11 倒伏分数

从倾斜角和倒伏面积角度记分（见表 1）

0 无

3 轻微

5 中等

7 严重

6·1·12 天然的根瘤

0 无

3 少

7 多

表 1 倾斜角和倒伏面积

倒伏面积	0-9°	10-19°	20-29°	40-49°	60° >
0-19%	1	1	1	1	1
20-39%	1	1	3	3	5
40-59%	1	3	3	5	7
60-79%	1	3	5	7	9
80%	3	3	5	7	9

6.1.13 成熟期

- 1 最早的 (美国/加拿大小组 ' 000,000)
- 3 (I, II)
- 5 (III, IV)
- 7 (V, VI, VII)
- 9 最近的 (VIII, XI, X)

6.2 花序和果实

6.2.1 光照敏感性记分

- 0 不敏感
- 9 最敏感

6.2.2 到开花的天数

从种植到 50% 的植物最少开一朵花时的天数 (生长期 R)

6.2.3 掉落记分

在成熟后的相当时间内估计豆荚开裂和豆粒掉落的百分比，对于“相当时间”，在描述符 11 中予以具体说明可以包括下列参考种类

- 1 不掉落
- 2 轻微掉落
- 5 中度掉落
- 7 掉落
- 9 大量掉落

6.3 种子

6.3.1 豆子产量

按含水量 13 % 计算的每公顷产量 (公斤)

6.3.2 种子质量

根据种子皱缩程度，生理上的破裂，变色，受损伤的种子和种子大小均匀性进行评估

- 3 差
- 5 中等
- 7 好

6.3.3 每个豆荚籽粒量

随意选择 50 颗荚果的平均数

6.3.4 硬粒种子

实际百分比

6.3.5 含油总量

按干种子重量计算的百分比

6.3.6 脂肪酸成分

按干种子重量计算的百分比

6.3.6.1 软脂酸

6.3.6.2 硬脂酸

6.3.6.3 油酸

6.3.6.4 亚油酸

6.3.6.5 亚麻酸

6.3.7 蛋白质含量 ($6.25 \times N$)

按干种子重量计算的百分比

6.3.8 含硫氨基酸

每百克蛋白质含量 (克)

6.3.8.1 蛋氨酸

6.3.8.2 胱氨酸

6.3.8.3 Cystonine

6.3.9 11S 球蛋白与 7S 球蛋白之比

6.3.10 种子的耐贮藏能力

温度在摄氏 40 度, 相对湿度为 75 % 时, 种子贮存 6 个星期后, 好种子实际所占的百分率

7 逆境反应

下面各项的标准有待制定

7.1 低温

7.2 高温

- 7·3 干旱
- 7·4 高土壤湿度
- 7·5 土壤碱性
- 7·6 土壤酸性

8 病虫害感病性

每一种按照 1 - 9 的等级划分

- 0 “免疫”
- 3 感病性低
- 5 感病性中等
- 7 感病性高

8·1 害虫

- | | | |
|-------|--------------|--|
| 8·1·1 | <u>豆蝇</u> | <u>Ophiomyia phaseoli</u> Tryon (Beanfly) |
| 8·1·2 | <u>茎潜叶蝇</u> | <u>Melanagromyza sojae</u> Zehnt (Stem miner) |
| 8·1·3 | <u>根潜叶蝇</u> | <u>Ophiomyia centrosematis</u> de Meij
(Root miner) |
| 8·1·4 | <u>大豆小卷蛾</u> | <u>Leguminivora glycinivorella</u> Matsumura
(Soyabean pod borer) |
| 8·1·5 | <u>烟叶芽虫</u> | <u>Heliothis viriscens</u> F. (Tobacco budworm) |
| 8·1·6 | <u>绿螫针昆虫</u> | <u>Nezara viridula</u> L. (Green sting bug) |
| 8·1·7 | <u>螫针昆虫</u> | <u>Riptorus claratus</u> Thunberg and others
(sting bugs) |
| 8·1·8 | <u>花生蚜虫</u> | <u>Aphis craccivora</u> Koch (Groundnut aphid) |

- 8·1·9 大豆蚜虫 Aulocorthus pelargonii Rolt
(Soyabean aphid)
- 8·1·10 蜘蛛螨 Tetranychus truncatus Ehara L.
(Spider mite)
- 8·1·11 其他蜘蛛螨 (在描述符 11 “附注”中具体说明)
Other spider mites
- 8·1·12 墨西哥豆瓢虫 Epilachna varivestis Mulsant
(Mexican bean beetle)
- 8·1·13 大豆尺蠖 Pseudoplusia includens (Soyabean looper)
- 8·1·14 叶跳虫 Empoasca fabae Harr.
(Leaf hopper, Jassid)
- 8·1·15 其他叶跳虫 (在描述符 11 “附注”中说明)
Other leaf hoppers
- 8·1·16 大豆豆荚虫及其他 Matsumuraeses talcana Walsingham and
others (soybean podworm complex)
- 8·1·17 大豆瘿蚊 Asphondylia sp. (soybean pod gall midge)
- 8·1·18 黛豆毛虫 Anticarsia gemmatalis Hub.
(Velvet bean caterpillar)
- 8·1·19 白蝇 Bemisia tabaci Genn. (White fly)
- 8·1·20 豆叶甲虫 Cerotoma sp. (Bean leaf beetle)
- 8·1·21 甜菜刺枝虫 Spodoptera exigua Hub. (Beet armyworm)
- 8·1·22 大豆囊肿线虫 Heterodera glycines Ichinohe
(Soyabean cyst nematode)
- 8·1·23 根瘤线虫 Meloidogyne incognita (Kofoid and Wood)
Chitwood (Root-knot nematode)

8·1·24 其他线虫(在描述符11“附注”中说明)

8·2 真 菌

- 8·2·1 紫斑病 Cercospora kikuchi T. Masu & Tomoyasu.
Gardner (Purple seed stain) Mottling and staining ratings to be given
- 8·2·2 蛙眼斑点病 C. sojina Hara (Frog eye leaf spot)
- 8·2·3 园林黄槿 Colletotrichum dematium
(Pers. ex Fr.) Grove var.
- 8·2·4 标的斑点病 Cornospora sp. (Target spot)
- 8·2·5 黑豆病 Elsinoë glycines Jenkins
(Sphaceloma scab)
- 8·2·6 黑腐病 Macrophomina phaseolina
(Tassi) Goid. (Charcoal rot)
- 8·2·7 霜霉病 Peronospora manshurica (Aoum.) Syd.
ex Gaum (Downy mildew)
- 8·2·8 大豆锈病 Phakopsora pachyrhizi Sydow
(Soybean Rust)
- 8·2·9 褐茎腐病 Phialophora gregata
(All. & Chambert) W. Gams. (Brown stem rot)
- 8·2·10 黑点病 Phomopsis sojae Lehman and Diaporthe phaseolorum ((Cke & Ell.) Sacc. Var. Sojae (Lehman) Wehm.) (Phomopsis seed decay)
- 8·2·11 黄萎病 Phytophthora megasperma (Drechs) var. sojae, A.A. Hildebrand
(Phytophthora root rot)
- 8·2·12 立枯病 Rhizoctonia solani Kuehn (Rhizoctonia aerial foliage and web blight)

8.3 细菌

- 8.3.1 细菌性斑点病 *Pseudomonas syringae* pv. *glycinea* (Coerper) Young
- 8.3.2 叶烧病 *Xanthomonas campestris* pv. *phaseoli* (smith) Dye. (Bacterial pustule)

8.4 病毒

- 8.4.1 大豆花叶病毒 Soybean mosaic virus
- 8.4.2 大豆黄花叶病毒 Soybean yellow mosaic virus
- 8.4.3 大豆矮生花叶病毒 Soybean dwarf mosaic virus
- 8.4.4 大豆矮化病毒 Soybean stunt virus

9 生物特性

9.1 同工酶

10 细胞特性和鉴定基因

10.1 细胞特性

10.2 鉴定基因

11 附注

在描述号码标以“其他”字样，例如在描述符 2.10, 4.3.3 等情况下，提供另外的资料。

任何进一步的有关资料也包括在这里。

AGPG:IBPGR/84/183
December 1984

INTERNATIONAL BOARD FOR PLANT GENETIC RESOURCES

DESCRIPTORS FOR SOYABEAN

IBPGR SECRETARIAT
Rome, 1984

The International Board for Plant Genetic Resources (IBPGR) is an autonomous, international, scientific Organization under the aegis of the Consultative Group on International Agricultural Research (CGIAR). The IBPGR, which was established by the CGIAR in 1974, is composed of its Chairman and 16 members; its Executive Secretariat is provided by the Food and Agriculture Organization of the United Nations. The basic function of the IBPGR is to promote and coordinate an international network of genetic resources centres to further the collection, conservation, documentation, evaluation and use of plant germplasm and thereby contribute to raising the standard of living and welfare of people throughout the world. The Consultative Group mobilizes financial support from its members to meet the budgetary requirements of the Board.

IBPGR Executive Secretariat
Crop Genetic Resources Centre
Plant Production and Protection Division
Food and Agriculture Organization of the United Nations
Via delle Terme di Caracalla, 00100 Rome, Italy

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PREFACE

This descriptor list has been prepared in an IBPGR standard format following advice on descriptors and descriptor states from crop experts. The IBPGR encourages the collection of data on the first four categories of this list: 1. Accession; 2. Collection; 3. and 4. Characterization and preliminary evaluation. The IBPGR endorses the information in categories 1-4 as the minimum that ideally should be available for any one accession. Other descriptors are given in categories 5 onwards that will enable the simple encoding of further characterization and evaluation data and which can serve as examples for the creation of additional descriptors in the IBPGR form by any user.

Although the suggested coding should not be regarded as the definitive scheme, this format has the full backing of the IBPGR and is promoted worldwide. The descriptor list given here provides an international format and thereby produces a universally understood 'language' for all plant genetic resource data. The adoption of this scheme for all data encoding, or at least the production of a transformation method to convert other schemes to the IBPGR format, will produce a rapid, reliable and efficient means for information storage, retrieval and communication. This will greatly assist the utilization of germplasm throughout the international plant genetic resources network. It is recommended, therefore, that information should be produced by closely following this descriptor list with regard to: ordering and numbering descriptors; using the descriptors specified; and using the descriptor states recommended.

Any suggestions for modification will be welcomed by the IBPGR Secretariat, Rome.

REVISED DESCRIPTOR LIST FOR SOYABEAN

The IBPGR now uses the following definitions in genetic resources documentation:

- i) passport data (accession identifiers and information recorded by collectors);
- ii) characterization (consists of recording those characters which are highly heritable, can be easily seen by the eye and are expressed in all environments);
- iii) preliminary evaluation (consists of recording a limited number of additional traits thought desirable by a consensus of users of the particular crop).

Characterization and preliminary evaluation will be the responsibility of the curators, while further characterization and evaluation should be carried out by the plant breeder. The data from further evaluation should be fed back to the curator who will maintain a data file.

The following internationally accepted norms for the scoring or coding of descriptor states should be followed as indicated below:

- a) measurements are made in metric units;
- b) many descriptors which are continuously variable are recorded on a 1-9 scale. The authors of this list have sometimes described only a selection of the states, e.g. 3, 5 and 7 for such descriptors. Where this has occurred the full range of codes is available for use by extension of the codes given or by interpolation between them - e.g. in 8 (Pest and disease susceptibility) 1 = extremely low susceptibility and 8 = high to extremely high susceptibility;
- c) presence/absence of characters are scored as + (present) and 0 (absent);
- d) for descriptors which are not generally uniform throughout the accession (e.g. mixed collection, genetic segregation) mean and standard deviation could be reported where the descriptor is continuous or mean and 'x' where the descriptor is discontinuous;
- e) when the descriptor is inapplicable, '0' is used as the descriptor value. E.g. if an accession does not form flowers, a 0 would be scored for the following descriptor.

Flower colour

- 1 White
- 2 Yellow
- 3 Red
- 4 Purple

- f) blanks are used, for information not yet available;
- g) standard colour charts e.g. Royal Horticultural Society Colour Chart, Methuen Handbook of Colour, Munsell Color Charts for Plant Tissues are strongly recommended for all ungraded colour characters (the precise chart used should be specified in the NOTES descriptor, 11).

PASSPORT DATA

1. ACCESSION DATA

1.1 ACCESSION NUMBER

This number serves as a unique identifier for accessions and is assigned by the curator when an accession is entered into his collection. Once assigned this number should never be reassigned to another accession in the collection. Even if an accession is lost, its assigned number is still not available for re-use. Letters should occur before the number to identify the genebank or national system (e.g. MG indicates an accession comes from the genebank at Bari, Italy. PI indicates an accession within the USA system).

1.2 DONOR NAME

Name of institution or individual responsible for donating the germplasm

1.3 DONOR IDENTIFICATION NUMBER

Number assigned to accession by the donor

1.4 OTHER NUMBERS ASSOCIATED WITH THE ACCESSION (other numbers can be added as 1.4.3 etc.)

Any other identification number known to exist in other collections for this accession, e.g. USDA Plant Inventory number (not collection number, see 2.1)

1.4.1 Other number 1

1.4.2 Other number 2

etc.

1.5 SCIENTIFIC NAME

1.5.1 Genus

1.5.2 Species

1.6 PEDIGREE/CULTIVAR NAME

Nomenclature and designations assigned to breeder's material

1.6.1 Pedigree number

1.6.2 Cultivar name

1.7 ACQUISITION DATE

The month and year in which the accession entered the collection, expressed numerically, e.g. June = 06, 1981 = 81

1.7.1 Month

1.7.2 Year

1.8 DATE OF LAST REGENERATION OR MULTIPLICATION

The month and year expressed numerically, e.g. October = 10, 1978 = 78

1.8.1 Month

1.8.2 Year

1.9 ACCESSION SIZE

Approximate number of seeds or quantity in gm of accession in collection (if quantity is given specify 100 seed weight)

1.10 NUMBER OF TIMES ACCESSION REGENERATED

Number of regenerations or multiplications since original collection

2. COLLECTION DATA

2.1 COLLECTOR'S NUMBER

Original number assigned by collector of the sample normally composed of the name or initials of the collector(s) followed by a number. This item is essential for identifying duplicates held in different collections and should always accompany sub-samples wherever they are sent

2.2 COLLECTING INSTITUTE

Institute or person collecting/sponsoring the original sample

2.3 DATE OF COLLECTION OF ORIGINAL SAMPLE

Expressed numerically, e.g. March = 03, 1980 = 80

2.3.1 Month

2.3.2 Year

2.4 COUNTRY OF COLLECTION OR COUNTRY WHERE
CULTIVAR/VARIETY BRED

Use the three letter abbreviations supported by the Statistical Office of the United Nations. Copies of these abbreviations are available from the IBPGR Secretariat and have been published in the FAO/IBPGR Plant Genetic Resources Newsletter number 49

2.5 PROVINCE/STATE

Name of the administrative subdivision of the country in which the sample was collected

2.6 LOCATION OR COLLECTION SITE

Number of km and direction from nearest town, village or map grid reference (e.g. TIMBUKTU7S means 7 km South of Timbuktu)

2.7 LATITUDE OF COLLECTION SITE

Degrees and minutes followed by N (North) or S (South), e.g. 1030S

2.8 LONGITUDE OF COLLECTION SITE

Degrees and minutes followed by E (East) or W (West), e.g. 7625W

2.9 ALTITUDE OF COLLECTION SITE

Elevation above sea level in meters

2.10 COLLECTION SOURCE

- 1 Wild
- 2 Farm land
- 3 Farm store
- 4 Backyard
- 5 Village market
- 6 Commercial market
- 7 Institute
- 8 Others (specify in the NOTES
descriptor, 11)

2.11 STATUS OF SAMPLE

- 1 Wild
- 2 Weedy
- 3 Breeders line
- 4 Primitive cultivar/landrace
- 5 Advanced cultivar (bred)
- 6 Others (specify in the NOTES
descriptor, 11)

2.12 LOCAL/VERNACULAR NAME

Name given by farmer to cultivar/landrace/weed

2.13 NUMBER OF PLANTS SAMPLES

Approximate number of plants collected in the field to
produce this accession

2.14 PHOTOGRAPH

Was a photograph taken of the accession of environment at
collection?

- 0 No
- + Yes

2.15 OTHER NOTES FROM COLLECTOR

Collectors will record ecological information. For
cultivated soyabeans, cultural practices used such as
irrigation, season of sowing, etc. will be recorded

CHARACTERIZATION AND PRELIMINARY EVALUATION DATA

3. SITE DATA

3.1 COUNTRY OF CHARACTERIZATION AND PRELIMINARY EVALUATION

3.2 SITE (RESEARCH INSTITUTE)

3.3 NAME OF PERSON IN CHARGE OF CHARACTERIZATION

3.4 SOWING DATE

3.4.1 Day

3.4.2 Month

3.4.3 Year

3.5 HARVEST DATE

3.5.1 Day

3.5.2 Month

3.5.3 Year

4. PLANT DATA

4.1 VEGETATIVE

4.1.1 Stem determination

3 Determinate
5 Semi-determinate
7 Indeterminate

4.1.2 Number of leaflets

3 3
5 4-6
7 7 or more

4.1.3 Leaflet shape

Judged from the ratio of length/width of fully developed terminal leaflet on the middle part of main stems

3 Narrow (l/w 2.2 or more) = 'lanceolate'
5 Intermediate (l/w 1.9.2.1)
7 Broad (l/w 1.8 or less) = 'ovate'

4.1.4 Pubescence

0 Absent
+ Present

4.1.5 Pubescence density

3 Sparse
5 Semi-sparse
7 Normal
9 Dense

4.1.6 Pubescence colour

- 1 Grey
- 2 Light brown
- 3 Brown = 'tawny'

4.1.7 Pubescence type

- 1 Erect
- 2 Semi-appressed
- 3 Appressed
- 4 Curly
- 5 Retrorse tip

4.2 INFLORESCENCE

4.2.1 Corolla colour

- 3 White
- 5 Purple throat
- 7 Purple

4.2.2 Mature pod colour

- 3 Tan
- 5 Brown
- 7 Black

4.3 SEED

4.3.1 Seed coat colour

- 1 Yellowish white
- 2 Yellow
- 3 Green
- 4 Buff
- 5 Reddish brown
- 6 Grey
- 7 Imperfect black (black shading to buff)
- 8 Black

4.3.2 Seed coat pattern

- 1 Light hilum
- 2 Dark hilum
- 3 Saddle
- 4 Striped

4.3.3 Hilum colour

- 1 Yellow
- 2 Buff
- 3 Brown
- 4 Green
- 5 Grey
- 6 Imperfect black (= black with buff
outer ring)
- 7 Black
- 8 Others (specify in the NOTES
descriptor, 11)

4.3.4 Seed coat surface lustre

- 3 Shiny
- 5 Intermediate
- 7 Dull
- 9 Heavy bloom

4.3.5 Strophiole at the hilum

- 0 Absent
- + Present

4.3.6 100 seed weight

Absolute values in g normally measured at
13-15% moisture content

4.3.7 Cotyledon colour

- 1 Yellow
- 2 Green

FURTHER CHARACTERIZATION AND EVALUATION

5. SITE DATA

5.2 SITE (RESEARCH INSTITUTE)

5.3 NAME OF PERSON IN CHARGE OF EVALUATION

5.4 SOWING DATE

5.4.1 Day

5.4.2 Month

5.4.3 Year

5.5 HARVEST DATE

5.5.1 Day

5.5.2 Month

5.5.3 Year

5.6 PLANTING PATTERNS

5.6.1 Row width

5.6.2 Spacing between hill

5.6.3 Number of plants/metre of row

5.6.4 Number of plants/m²

6. PLANT DATA

6.1 VEGETATIVE

6.1.1 Days to emergence

Number of days from planting to 50% seedling emergence

6.1.2 Seedling vigour

Assessed when the first trifoliolate leaf expanded

3 Poor
5 Medium
7 Vigorous

6.1.3 Hypocotyl colour

Recorded at the time when the primary leaves are expanded

1 Green
2 Purple

6.1.4 Leaflet size

Recorded with length (cm) x width (cm)

3 Small (70 cm² or less)
5 Medium (71 to 149 cm²)
7 Large (150 cm² and more)

6.1.5 Petiole presence

0 Absent
+ Present

6.1.6 Plant height at R1

Actual measurement in cm as means of 20 randomly selected plants

6.1.7 Number of nodes on the main stem at flowering $\frac{1}{(R_1)}$

Note as in 6.1.8

6.1.8 Number of nodes on the main stem at maturity (R8)

Details to be worked out at each centre. May be relative to a standard check variety (specify in the NOTES descriptor 11.)

6.1.9 Plant height at R8

Actual measurement in cm as mean of 20 randomly selected plants

6.1.10 Number of primary branches (when at least 2 nodes) per plant at maturity

Mean of 20 randomly selected plants

6.1.11 Lodging score

Scored from leaning angle and lodging area (see Table 1)

0 None
3 Slight
5 Moderate
7 Severe
9 Very severe

Table 1. Leaning angle and lodging area

Lodging area	0-9°	10-19°	20-29°	40-49°	60°
0-19%	1	1	1	1	1
20-39%	1	1	3	3	5
40-59%	1	3	3	5	7
60-79%	1	3	5	7	9
80%	3	3	5	7	9

6.1.12 Nodulation with natural inoculation

- 0 None
- 3 Poor
- 7 Heavy

6.1.13 Maturity time

- 1 Earliest (US/Canadian groups^{1/}
000,00 0)
- 3 (I, II)
- 5 (III, IV)
- 7 (V, VI, VII)
- 9 Latest (VIII, XI, X)

6.2 INFLORESCENCE AND FRUIT

6.2.1 Photoperiod sensitivity score

- 0 Insensitive
- 9 Most sensitive

6.2.2 Days to flowering

Number of days from planting to 50% of plants with at least one open flower (growth stage R₁)

6.2.3 Shattering score

Estimated percent of pod splitting and seed shattering at a comparable time after maturity to be specified in the NOTES descriptor, 11. (Reference varieties can be included.)

- 1 No shattering
- 2 Slight shattering
- 5 Medium shattering
- 7 Shattering
- 9 Highly shattering

6.3 SEED

6.3.1 Grain yield

Yield (kg) per ha adjusted to 13% moisture

6.3.2 Seed quality

Assessed by the degree of shrivelled, physiologically cracked, discoloured, injured seed and uniformity of seed size

- 3 Poor
- 5 Medium
- 7 Good

6.3.3 Number of seeds per pod

Mean of 50 randomly selected pods

6.3.4 Hard seeds

Actual percent

6.3.5 Total oil content

Percent on dry seed weight basis

6.3.6 Fatty acid composition

Percent dry seed weight basis

6.3.6.1 Palmitic

6.3.6.2 Stearic

6.3.6.3 Oleic

6.3.6.4 Linoleic

6.3.6.5 Linolenic

6.3.7 Protein content (6.25 x N)

Percent on dry seed weight basis

6.3.8 Sulphur containing Amino Acids

g/100 g protein

6.3.8.1 Methionine

6.3.8.2 Cystine

6.3.8.3 Cystonine

6.3.9 Proportion of 11S Globulin to 7S Globulin

6.3.10 Storability of seeds

Actual percentage of good seed after 6 weeks storage at 40°C and 75% RH

7. STRESS REACTIONS

Standards to be developed for

7.1 LOW TEMPERATURE

7.2 HIGH TEMPERATURE

7.3 DROUGHT

7.4 HIGH SOIL MOISTURE

7.5 SOIL SALINITY

7.6 SOIL ACIDITY

8. PEST AND DISEASE SUSCEPTIBILITY

Each based on a 1-9 scale where

0 "Immune"
3 Low susceptibility
5 Medium susceptibility
7 High susceptibility

8.1 PESTS

8.1.1 Ophiomyia phaseoli Tryon (Beanfly)

8.1.2 Melanogromyza sojae Zehnt (Stem minor)

- 8.1.3 Ophiomyia centrosematis de Meij (Root minor)
- 8.1.4 Leguminivora glycinivorella Matsumura
(Soyabean pod borer)
- 8.1.5 Heliothis virescens F. (Tobacco budworm)
- 8.1.6 Nezara viridula L. (Green sting bug)
- 8.1.7 Riptortus clavatus Thunberg and others
(Sting bugs)
- 8.1.8 Aphis craccivora Koch (Groundnut aphid)
- 8.1.9 Aulocorthus pelargonii Rolt (Soyabean aphid)
- 8.1.10 Tetranychus truncatus Ehara L. (Spider mite)
- 8.1.11 Other spider mites (specify in the NOTES
descriptor, 11)
- 8.1.12 Epilachna varivestis Mulsant (Mexican bean
beetle)
- 8.1.13 Pseudoplusia includens (Soyabean looper)
- 8.1.14 Empoasca fabae Harr. (Leaf hopper, Jassid)
- 8.1.15 Other leaf hoppers (specify in the NOTES
descriptor, 11)
- 8.1.16 Matsumuraeses talcana Walsingham and others
(Soyabean podworm complex)
- 8.1.17 Asphondylia sp. (Soyabean pod gall midge)
- 8.1.18 Anticarsia gemmatalis Hub. (Velvet bean
caterpillar)
- 8.1.19 Bemisia tabaci Genn. (White fly)
- 8.1.20 Cerotoma sp. (Bean leaf beetle)
- 8.1.21 Spodoptera exigua Hub. (Beet armyworm)
- 8.1.22 Heterodera glycines Ichinohe (Soyabean cyst
nematode)
- 8.1.23 Meloidogyne incognita (Kofoid and Wood)
Chitwood (Root-knot nematode)

- 8.1.24 Other nematodes (specify in the NOTES descriptor, 11)
- 8.2 FUNGI
- 8.2.1 Cercospora kikuchi T. Masu & Tomoyasu.
Gardner (Purple seed stain)
Mottling and staining ratings to be given
- 8.2.2 C. sojina Hara (Forg eye leaf spot)
- 8.2.3 Colletotrichum dematium (Pers. ex Fr.)
Grove var.
- 8.2.4 Cornespora sp. (Target spot)
- 8.2.5 Elsinoë glycines Jenkins (Sphaceloma scab)
- 8.2.6 Macrophomina phaseolina (Tassi) Goid.
(Charcoal rot)
- 8.2.7 Peronospora manshurica (Aoum.) Syd. ex Gaum
(Downy mildew)
- 8.2.8 Phakopsora pachyrhizi Sylow (Soyabean rust)
- 8.2.9 Phialophora gregata (All. & Chambert) W. Gams.
(Brown stem rot)
- 8.2.10 Phomopsis sojae Lehman and Diaporthe phaseolorum [(Cke & Ell.) Sacc. Var. Sojae [(Lehman) Wehm.]
(Phomopsis seed decay)
- 8.2.11 Phytophthora megasperma (Drechs) var. sojae,
A.A. Hildebrand (Phytophthora root rot)
- 8.2.12 Rhizoctonia solani Kuehn (Rhizoctonia acrial foliage and web blight)
- 8.3 BACTERIA
- 8.3.1 Pseudomonas syringae pv. glycinea (Coerper)
Young
- 8.3.2 Xanthomonas campestris pv. phaseoli (Smith)
Dye. (Bacterial pustule)
- 8.4 VIRUS
- 8.4.1 Soyabean mosaic virus

8.4.2 Soyabean yellow mosaic virus

8.4.3 Soyabean dwarf mosaic virus

8.4.4 Soyabean stunt virus

9. BIOLOGICAL CHARACTERS

9.1 ISOZYMES

10. CYTOLOGICAL CHARACTERS AND IDENTIFIED GENES

10.1 CYTOLOGICAL CHARACTERS

10.2 IDENTIFIED GENES

11. NOTES

Give additional information where descriptor state is noted as 'other' as for example in descriptor 2.10, 4.3.3 etc.

Also include here any further relevant information.