



Animal &  
Plant Health  
Agency

# **Great Britain and Northern Ireland Variety List Trials: Trial Procedures for Official Examination of Value for Cultivation and Use (VCU) Harvest 2025**

**Field beans – spring and winter**

**Appendices**

**September 2024**

## Changes:

- Removed all references to “sown” beans in document
- Appendix 5, page 10 replaced language: “known disease comparator” with “commercially available varieties”
- Moved Appendix 7 to Main Procedures Section E
- Updated title
- Appendix 4
  - Added column for trial description
  - Updated winter bean Trial Operators – NIAB replaced with Stockbridge Technology Centre
- Appendix 5
  - Removed Tundra and replaced with Vincent

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# Scope

This document contains the appendices for the main guidance document:

Trial Procedures for Official Examination of Value for Cultivation and Use (VCU) Harvest  
2024 – Field beans – spring and winter

## Appendix 1 - Approved Trial Organisers/ Operators for field beans

Activity	Organisers/Operators responsible	Organisers/Operators responsible
	spring beans	winter beans
Data handling operator	BioSS	BioSS
Trials organiser	BSPB	BSPB
Pathology trials operator	NIAB	None
Trial inspection	PGRO	PGRO
Technical validation operators	NIAB	NIAB
Quality testing operator	NIAB	NIAB
Data review and standard setting operator	NIAB	NIAB

## **Appendix 2 – Seed treatment and fungicide products for use on NL trials**

Suitable products to be confirmed with the Trials Organiser.

## **Appendix 3 – Seed despatch deadline dates**

VCU seed must be delivered to each Seed Handler by:

Spring beans – 31 January

Winter beans – 1 October

Authentication samples, if requested, must be delivered to the appropriate DUS Test Centre.

# Appendix 4 – Growing trial operators and trial locations

## Growing trial operators/seed handling operators

### Spring beans

Growing trial operators	Seed handling operator (if not trial operator)	Location of trial	Trial Description
LS Plant Breeding	Trial Operator	Impington, Cambridgeshire	Managed
Saaten Union	Trial Operator	Cowlinge, Suffolk	Managed
PGRO	Trial Operator	Stubton, Lincolnshire	Managed
Frontier Agriculture Ltd	Trial Operator	Stokesley, North Yorkshire	Managed

### Winter beans

Growing trial operators	Seed handling operator (if not trial operator)	Location of trial	Trial Description
Stockbridge Technology Centre	Trial Operator	Selby, North Yorkshire	Managed
PGRO	Trial Operator	Stubton, Lincolnshire	Managed
Darlow Contract Services Ltd	Trial Operator	Soham, Cambridgeshire	Managed
LS Plant Breeding	Trial Operator	Impington, Cambridgeshire	Managed
NIAB	Trial Operator	Callow, Herefordshire	Managed

# Appendix 5 – Control varieties for VCU Assessments

## Spring beans

### Yield controls:

Lynx

Victus

## Winter beans

### Yield controls:

Vespa

Vincent

Disease comparators will be selected from within the inoculated trials that express high and low resistance to the disease. These must be commercially available varieties.

# Appendix 6 – Data submission dates

## A To Trials Organisers

Record	Latest date of receipt by trials organiser
Site data part 1 (including site sketch)	Within 2 months of drilling trial (autumn trials) Within 1 month of drilling trial (spring trials)
Site data part 2	By the time trials harvested
Plot records (in approved electronic format)	Growing trial operator should notify trials organiser that trial has been harvested within 2 days of harvest

## B Plot records to Data Handling Operator

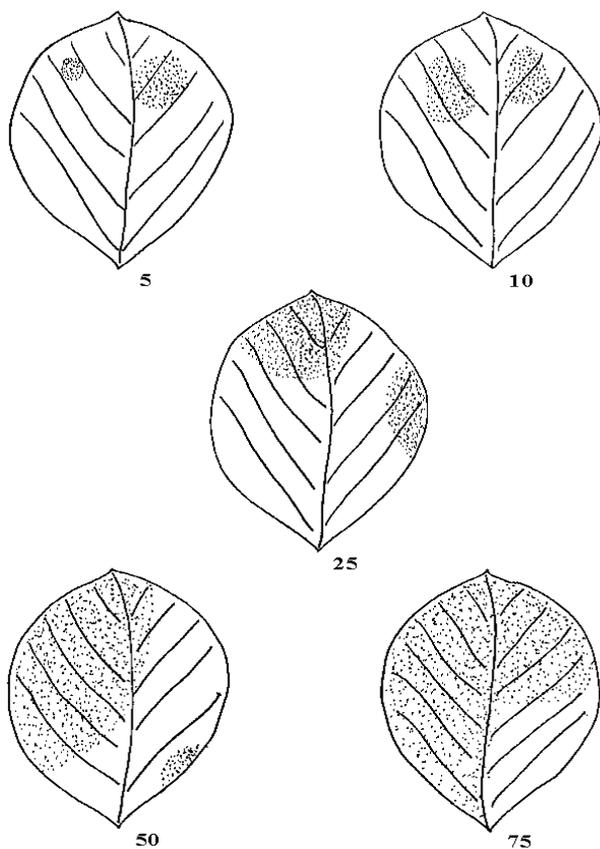
Record	Latest date of receipt by trials organiser
Plot records SHOULD be sent to the Data Handling Operator	Within 10 days of record being taken

## C Plot samples to Quality Testing Operator

Record	Latest date of receipt by trials organiser
Plot samples SHOULD be sent to the Data Handling Operator	Within 2 days of harvest

# Appendix 8 – Downy mildew assessment key

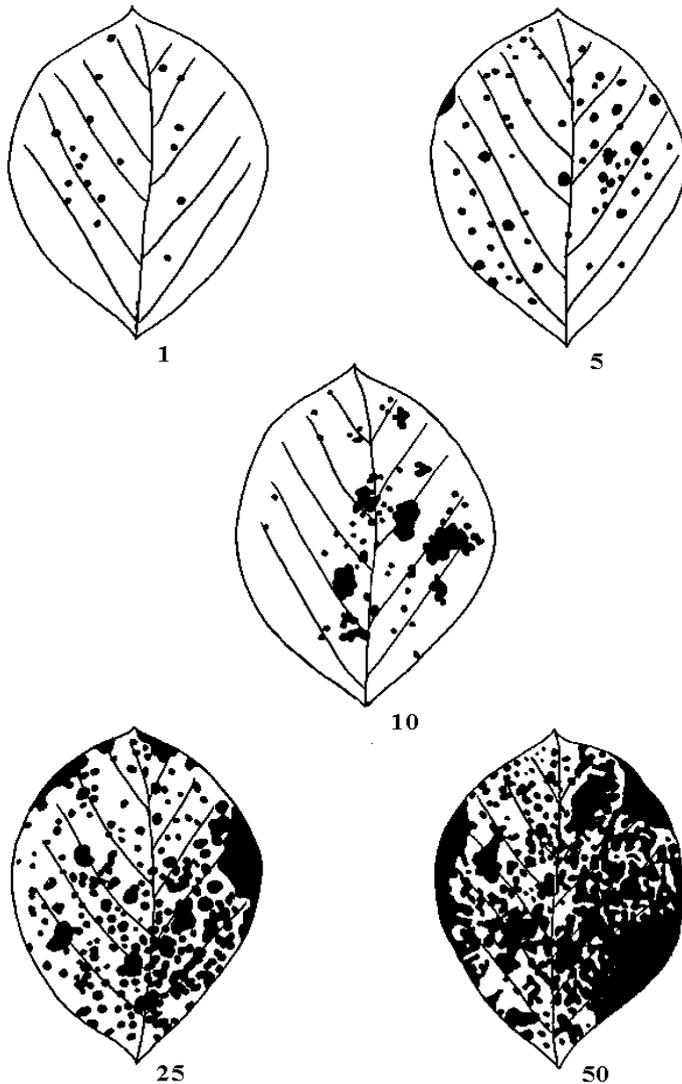
Downy Mildew (*Peronospora viciae*)



Examine all the leaves on plants within 4 to 6 areas of each plot, each area being approximately 1m<sup>2</sup>. Assess the mean % leaf area infected with downy mildew, the leaf area diagrams may be used as a guide.

# Appendix 8 – Chocolate spot

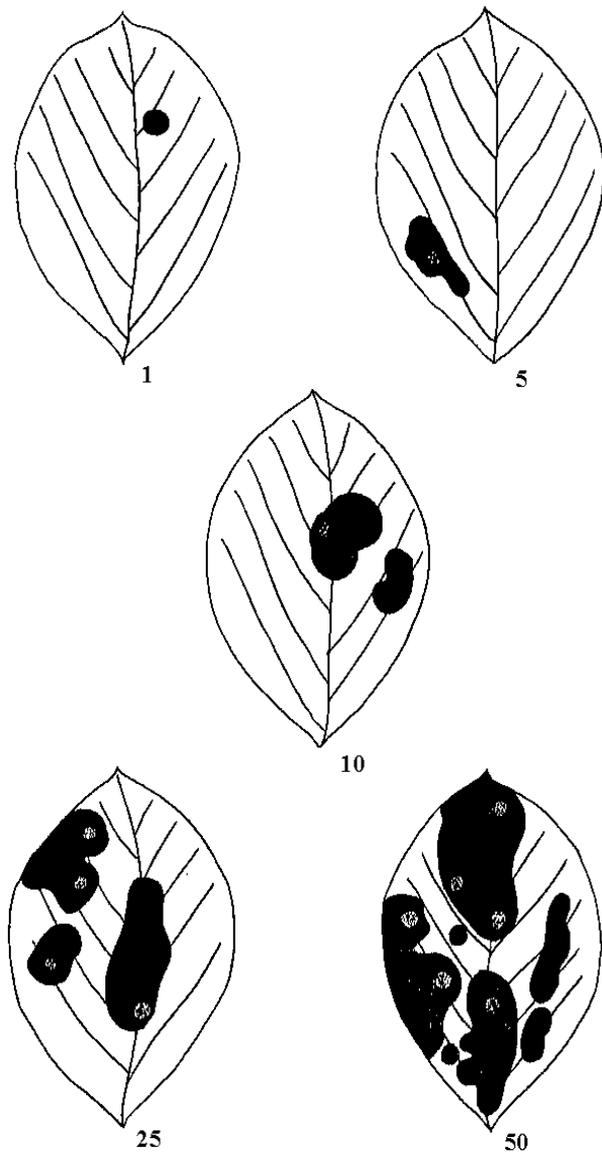
(*Botrytis fabae* Sardina and *Botrytis cinerea* Fr.)



Examine all the leaves on plants within 4 to 6 areas of each plot, each area being approximately 1m<sup>2</sup>- assess the mean % leaf area infected with chocolate spot, the leaf area diagrams may be used as a guide. It is sometimes helpful to divide the stems into thirds when making assessments, but transmitted data must consist of a % leaf area infected score for the whole plot.

# Appendix 8 – Leaf and pod spot

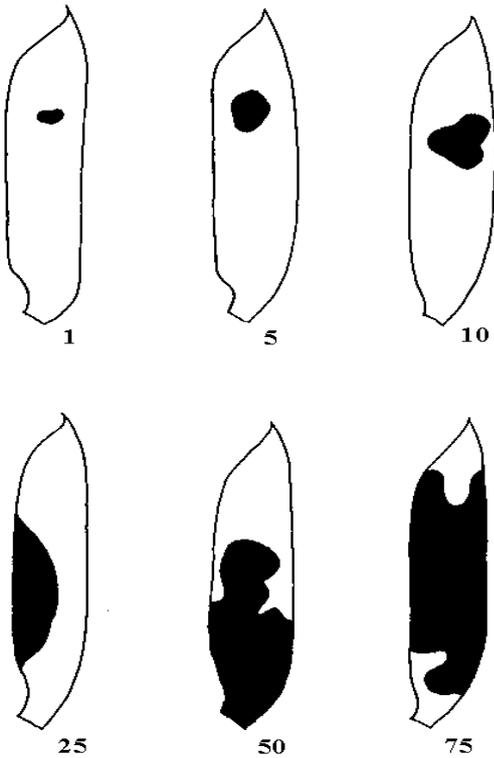
(*Ascochyta fabae* Spec.)



Examine all the leaves or pods on plants within 4 to 6 areas of each plot, each area being approximately 1m<sup>2</sup> assess the mean % leaf or pod area infected with *Ascochyta*, the leaf and pod area diagrams may be used as a guide. It is sometimes helpful to divide the stems into thirds when making leaf assessments, but transmitted data must consist of a % leaf area infected score for the whole plot. Pod infections should be assessed at G.S 207 before the pods turn brown.

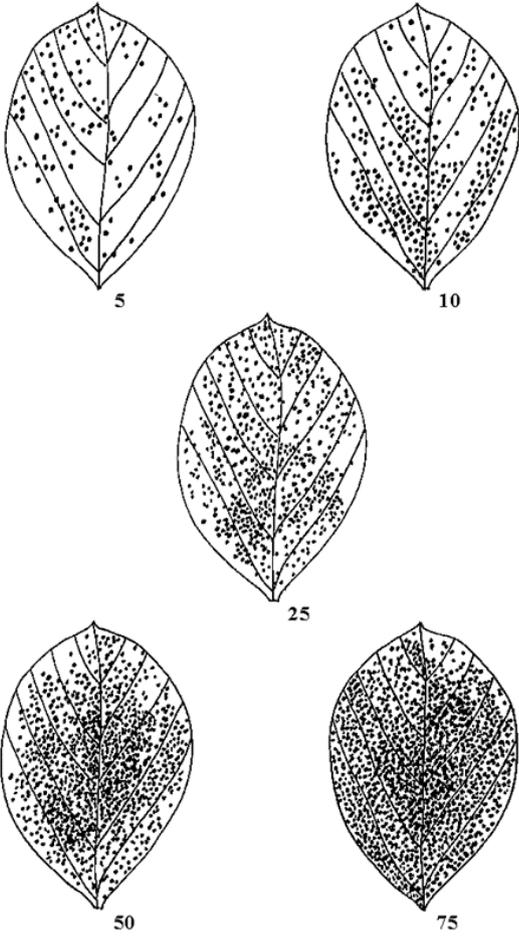
# Appendix 8 – Leaf and pod spot

(*Ascochyta fabae* Speg.)



# Appendix 8 – Bean Rust

Bean Rust (*Uromyces fabae*)



## Appendix 9 – Phenological growth stages and BBCH-identification keys of faba bean (*Vicia faba* L.)

Weber and Bleiholder, 1990; Lancashire et al., 1991

The extended BBCH-scale is a system for a uniform coding of phenologically similar growth stages of all mono- and dicotyledonous plant species. The decimal code, which is divided into principal and secondary growth stages, is based on the well-known cereal code developed by ZADOKS et al. (1974) in order to avoid major changes from this widely used phenological key.

- The general scale forms the framework within which the individual scales are developed. It can also be used for those plant species for which no special scale is currently available.
- Similar phenological stages of each plant species are given the same code
- For each code, a description is given, and for some important stages, drawings are included.
- For the description of the phenological development stages, clear and easily recognised (external) morphological characteristics are used.
- Except where stated otherwise, only the development of the main stem is taken into consideration.
- The growth stages refer to representative individual plants within the crop stand. Crop stand characteristics may also be considered.
- Relative values relating to species- and/or variety-specific ultimate sizes are used for the indication of size.
- The secondary growth stages 0 to 8 correspond to the respective ordinal numbers or percentage values. For example, stage 3 could represent: 3rd true leaf, 3rd tiller, 3rd node or 30% of the final length or size typical of the species or 30% of the flowers open.
- Post-harvest or storage treatment is coded 99.
- Seed treatment before planting is coded 00.

The entire developmental cycle of the plants is subdivided into ten clearly recognizable and distinguishable longer-lasting developmental phases. These principal growth stages are described using numbers from 0 to 9 in ascending order. Owing to the very many different plant species there may be shifts in the course of the development or certain stages may even be omitted. The principal growth stages need not proceed in the strict sequence defined by the ascending order of the figures but can occasionally also proceed in parallel.

**Principle growth stage 0: Germination**

Code	Description
00	Dry seed
01	Beginning of seed imbibition
03	Seed imbibition complete
05	Radicle emerged from seed
07	Shoot emerged from seed (plumule apparent)
08	Shoot growing towards soil surface
09	Emergence: Shoot emerges through soil surface

**Principle growth stage 1: leaf development <sup>1</sup>**

Code	Description
10	Pair of scale leaves visible (may be eaten or lost)
11	First leaf unfolded
12	2 leaves unfolded
13	2 leaves unfolded
1.	Stages continuous till.....
19	9 or more leaves folded

<sup>1</sup> Stem elongation may occur earlier than stage 19; in this case continue with the principal stage 3

### Principle growth stage 2: Formation of side shoots

Code	Description
20	No side shoots
21	Beginning of side shoot development: first side shoot detectable
22	2 side shoots detectable
23	3 side shoots detectable
2.	Stages continuous till.....
29	End of side shoot development: 9 or more side shoots detectable

### Principle growth stage 3: Stem elongation

Code	Description
30	Beginning of stem elongation
31	One visibly extended internode <sup>2</sup>
32	2 visibly extended internodes
33	3 visibly extended internodes
3	Stages continuous till.....
39	9 or more visibly extended internodes

<sup>2</sup> First internode extends from the scale leaf node to the first true leaf node

### Principle growth stage 5: Inflorescence emergence

Code	Description
50	Flower buds present, still enclosed by leaves
51	First flower buds visible outside leaves
55	First individual flower buds visible outside leaves but still closed

59

First petals visible, many individual flower buds, still closed

Principle growth stage 6: flowering

Code	Description
60	First flowers open
61	Flowers open on first raceme
63	Flowers open 3 racemes per plant
65	Full flowering: flowers open on 5 racemes per plant
67	Flowering declining
69	End of flowering

Principle growth stage 7: Development of fruit

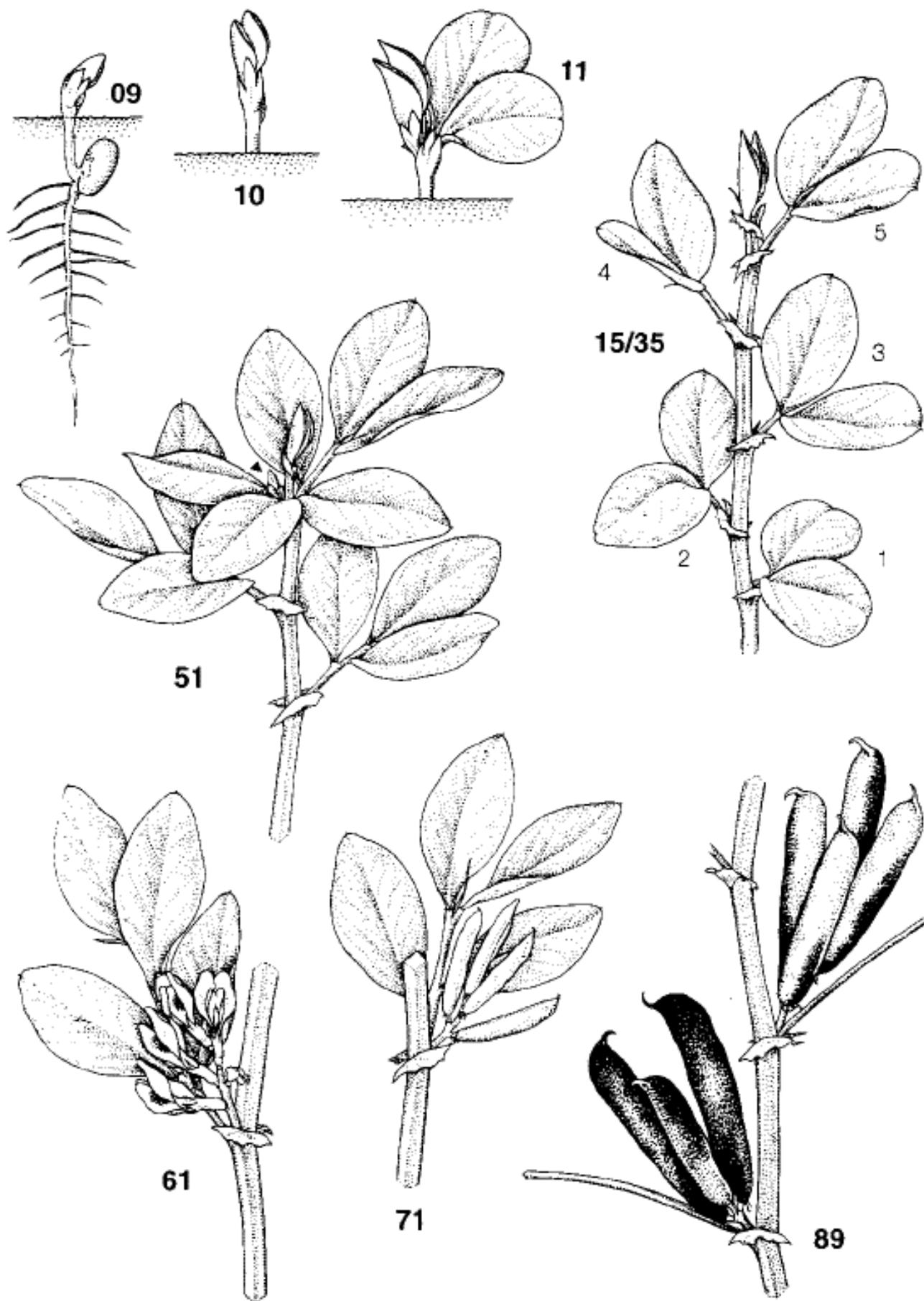
Code	Description
70	First pods have reached final length ("flat pod")
71	10% of pods have reached final length
72	20% of pods have reached final length
73	30% of pods have reached final length
74	40% of pods have reached final length
75	50% of pods have reached final length
76	60% of pods have reached final length
77	70% of pods have reached final length
78	80% of pods have reached final length
79	Nearly all pods have reached final length

Principle growth stage 8: ripening

80	Beginning of ripening: seed green, filling pod cavity
81	10% of pods ripe, seeds dry and hard
82	20% of pods ripe, seeds dry and hard
83	30% of pods ripe and dark, seeds dry and hard
84	40% of pods ripe and dark, seeds dry and hard
85	50% of pods ripe and dark, seeds dry and hard
86	60% of pods ripe and dark, seeds dry and hard
87	70% of pods ripe and dark, seeds dry and hard
88	80% of pods ripe and dark, seeds dry and hard
89	Fully ripe: nearly all pods dark, seeds dry and hard

Principle growth stage 9: senescence

93	Stems begin to darken
95	50% of stems brown or black
97	Plant dead and dry
99	Harvested product





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