

## *Vicia*, VETCH

Excerpt from Testing Seeds for Purity and Origin by Albina F. Musil (1961)

### A SEED KEY

- 1a. Chalaza on the back, opposite the hilum.
  - 2a. Hilum about 2 mm long, flush with surface of the seed or nearly so.
    - 3a. Hilum narrowly oblong, 0.5–0.75 mm wide; seed 4–4.5 mm long. ***Vicia pannonica*, Hungarian vetch** (figure H).
    - 3b. Hilum short-oval, about 1.25 mm wide; seed 5 mm long. ***Vicia hybrida*, hairy yellow vetch** (figure J).
  - 2b. Hilum about 4 mm long, oblong.
    - 4a. Hilum narrow (0.5–0.75 mm), slightly depressed at the margins; seed 6–6.5 mm long, may be variously compressed. ***Vicia lutea*, yellow vetch** (figure I).
    - 4b. Hilum wide (1 mm or more), flush with surface of seed or nearly so; seed 4.5–5 mm long. ***Vicia melanops*, black-eyed vetch** (figure K).
- 1b. Chalaza near one end of the hilum.
  - 5a. Hilum linear, obscured by a persisting whitish, frill-like tissue; seeds 3–4 mm long.
    - 6a. Hilum about two-thirds the length of the circumference; seed lens-shaped, brownish and faintly mottled. ***Vicia grandiflora*, showy vetch** (figure C).
    - 6b. Hilum 1–3 mm long; seed slightly flattened but not lens-shaped.
      - 7a. Hilum 2.5 to 3 mm long; seed dull black. ***Vicia benghalensis*, purple vetch** (figure B).
      - 7b. Hilum about 1 mm long; seed brownish, faintly mottled. ***Vicia monantha*, bard vetch** (not illustrated).
  - 5b. Hilum not obscured by persisting tissue.
    - 8a. Seeds relatively small, length 1.5–2 or 3 mm.
      - 9a. Seed with knoblike protuberances, minutely stippled, appears 4-sided in outline. Hilum dark reddish brown, short-oval, length 1 mm, width 0.5 mm; seed light grayish brown with a prominent chalaza near end of hilum, length 2 mm. ***Vicia lathyroides*, low pea vetch** (not illustrated).
      - 9b. Seed smooth, mostly spherical.
        - 10a. Hilum oblong, length 1.25 mm, width 0.25 mm or less; seed reddish brown and finely mottled, length 2–2.5 mm. ***Vicia tetrasperma*, fourseed vetch** (figure D).

10b. Hilum markedly longer, 2–3 or 3.25 mm.

11a. Hilum linear-oblong, width 0.5 mm or less.

12a. Seed glossy, yellowish or brownish, copiously mottled with purple; hilum 2–2.5 mm long, commonly with a stalk-like appendage loosely persisting. *Vicia hirsuta*, **tiny vetch** (figure A).

12b. Seed dull, black or lighter and mottled; hilum 2.5–3 mm long. *Vicia cracca*, **cow vetch** (figure E).

11b. Hilum linear-ovate, width at broader end about 0.75 mm.

13a. Hilum about 2 mm long, slightly raised along the groove down the middle; seed spherical, black and lustrous or dull greenish with dark mottling. *Vicia sativa* subsp. **nigra** [*Vicia angustifolia*], **narrowleaf vetch** (figures F and G).

13b. Hilum about 3.5 mm long, flat, grayish and scurfy; seeds slightly flattened, dark brown with obscure mottling. *Vicia americana*, **American vetch** (not illustrated).

8b. Seeds relatively large, length 4–5 or 6 mm, up to 14 mm in *V. faba*.

14a. Chalaza 2.5–3 mm from end of hilum; hilum about 1 mm long, 0.5 mm wide. Seed dull, pale brownish and usually mottled with dark green, the side opposite the chalaza flattened at right angles to the hilum so that seed appears triangular in outline. *Vicia ervilia*, **bitter vetch** (not illustrated).

14b. Chalaza 1 mm or less from end of hilum.

15a. Seed spherical or slightly flattened.

16a. Hilum flush with seed surface, smooth and flat, color black or reddish, length about 2 mm, width 1 mm, seeds black or obscurely mottled. *Vicia villosa*, **hairy vetch** (figure M).

16b. Hilum depressed at the margins.

17a. Hilum linear-oval, flat, the surface slightly granular and scurfy with a light-colored strip along the groove down the center, length about 2 mm, width 0.75 mm or less; seed dull black or obscurely mottled. *Vicia villosa* subsp. **varia** [*Vicia dasycarpa*], **woollypod vetch** (figure N).

17b. Hilum linear-ovate, raised down the middle along the groove, length 2–2.5 mm, width 0.5 mm; seed color variable, commonly reddish brown and obscurely mottled. A variable species. *Vicia sativa*, **common vetch** (figure L).

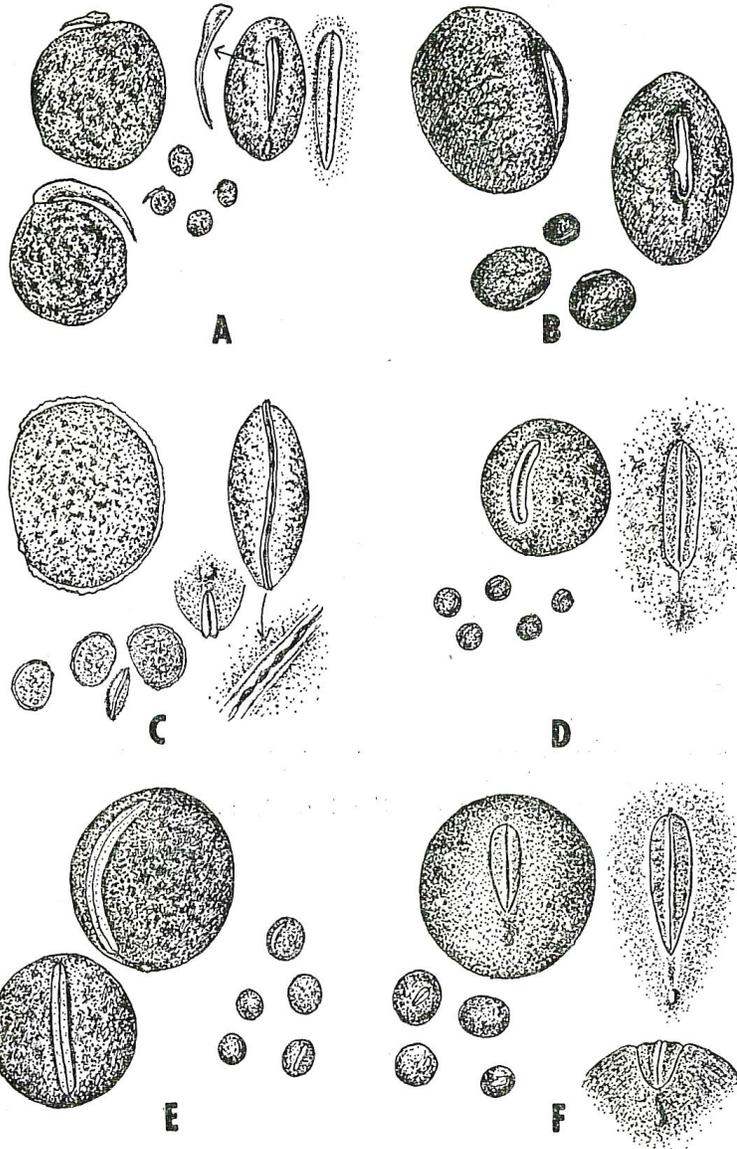
15b. Seed broadly oblong or oval, thick, flattened, reddish brown, length 13–14 mm, width 8–9 mm, hilum lies along the narrower end, length 5–6 mm, width 1–1.5 mm. *Vicia faba*, **horsebean** (not illustrated).

**Source:** Musil, Albina F., 1961. Testing Seeds for Purity and Origin. Pages 417-432. In: Stefferud, A. (ed.). Seeds: The Yearbook of Agriculture 1961. United States Department of Agriculture. Washington, D.C.

**Note:** In this key the term chalaza refers to a small, dark-colored elevation that may be evident on the surface of many legume seeds. The prominence and position of the chalaza in relation to the hilum are important diagnostic features in many members of the Fabaceae (legume family). In other literature, this structure is more appropriately referred to as the lens (Lersten et al. 1992; Gunn 1971).

### **References**

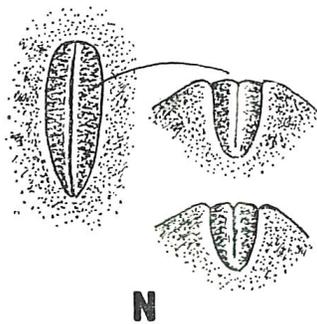
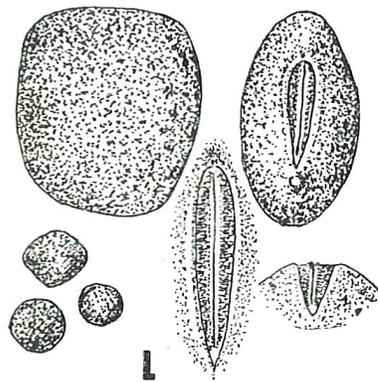
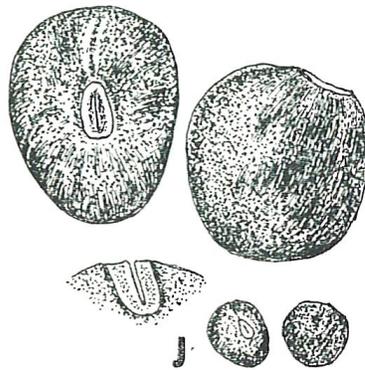
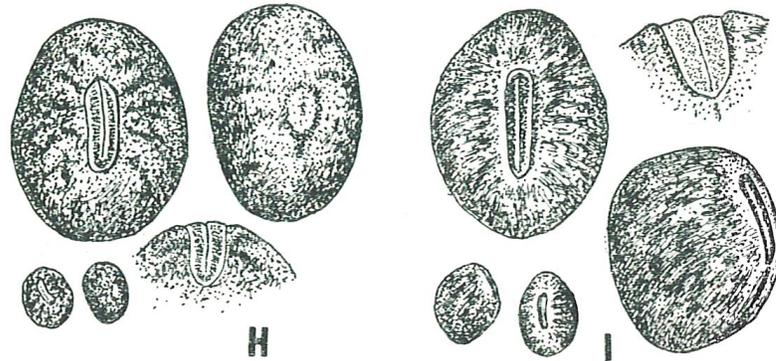
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Seeds of vetch, *Vicia* spp., greatly enlarged.

- A. *V. hirsuta*, tiny vetch
- B. *V. bengalensis*, purple vetch (*V. atropurpurea*)
- C. *V. grandiflora*, showy vetch
- D. *V. tetrasperma*, fourseed vetch
- E. *V. cracca*, cow vetch
- F. *V. angustifolia*, narrowleaf vetch
- G. *V. angustifolia*, narrowleaf vetch





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Seeds of vetch, *Vicia* spp., greatly enlarged.

- H. *V. pannonica*, Hungarian vetch
- I. *V. lutea*, yellow vetch
- J. *V. hybrida*, no common name
- K. *V. melanops*, no common name
- L. *V. sativa*, common vetch
- M. *V. villosa*, hairy vetch
- N. *V. dasycarpa*, woollypod vetch