

ICS 65.020.20

CCS B 05



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 45206-2025

Code of practice for production of Daodi herbs - Danshen

道地药材生产技术规程 丹参

Issued on: January 24, 2025

Implemented on: August 1, 2025

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Flow chart of the production technique	1
5 Choice of production site	2
5.1 Environment of the production site	2
5.2 Choice of plot	2
6 Choice of seed	3
6.1 Choice of variety	3
6.2 Seed quality requirements	3
7 Raising seedlings from seed	3
7.1 Preparation of the seedbed	3
7.2 Sowing	3
8 Land preparation and ridging	3
8.1 Land preparation	3
8.2 Ridging	3
9 Planting	3
9.1 Direct sowing of seed	3
9.2 Transplanting of seedlings	4
9.3 Planting of root sections	4
10 Field management	4
10.1 Weeding	4
10.2 Top dressing	4
10.3 Water management	4
10.4 Removal of flowering stems	4
10.5 Control of pests and diseases	4
11 Harvesting and primary processing	5
11.1 Harvesting	5
11.2 Primary processing	5
12 Packaging and storage	5
12.1 Packaging	5
12.2 Storage	5

13 Production records and records management	5
13.1 Production records	5
13.2 Records management	5
Annex A (informative) Main diseases of Danshen and their control	6

1 Scope

This document establishes the production technique for Danshen, specifies the technical operations and requirements for the choice of production site, the choice of seed, the raising of seedlings from seed, land preparation and ridging, planting, field management, harvesting, primary processing, packaging and storage, and describes traceability methods such as production records and records management.

This document applies to the production of Danshen medicinal material in the Daodi producing areas of Danshen, among them Shandong, Henan, Hebei, Anhui, Jiangsu, Sichuan, Shaanxi and Zhejiang.

2 Normative references

The contents of the following documents constitute indispensable provisions of this document through normative reference in the text. For dated references, only the edition corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

GB/T 731, Jute cloth and jute sacks. GB 3095, Ambient air quality standard. GB 5084, Standard for irrigation water quality. GB/T 6543, Single and double corrugated fibreboard boxes for transport packages. GB/T 8321 (all parts), Guideline for safe application of pesticides. GB/T 8946, General technical requirements for plastic woven bags. GB 15618, Soil environmental quality - Risk control standard for soil contamination of agricultural land (trial). GB/T 41363, Seeds and seedlings of Chinese medicinal materials - Danshen. NY/T 496, Rules for rational fertilizer use - General rules. NY/T 525, Organic fertilizer. NY/T 1276, Rules for safe use of pesticides - General rules. NY/T 1868, Rules for rational fertilizer use - Organic fertilizer.

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Daodi herbs: Chinese medicinal materials selected through long clinical use in Chinese medicine, produced in a particular region, of better quality and efficacy and of stable quality compared with the same medicinal material produced in other regions, and enjoying a high reputation.

3.2 Danshen: perennial herb of the genus *Salvia* in the family Lamiaceae (*Salvia miltiorrhiza* Bunge.), whose dried root and rhizome are used as medicine.

5 Choice of production site

5.1 Environment of the production site. The surrounding ecological environment is to be free of pollution; air quality is to comply with the grade two requirements of GB 3095; screening values for the risk of soil contamination are to comply with GB 15618; and irrigation water for farmland is to comply with GB 5084.

5.2 Choice of plot. Choose a plot that has not carried Danshen for three years or more: a) with a deep soil layer, loose texture and medium fertility; b) easy to drain and irrigate, avoiding waterlogged and low-lying ground; c) with soil that is preferably on the sandy side, avoiding heavy clay.

6 Choice of seed

6.1 Choice of variety. Choose traditional varieties suited to use in the Daodi producing area, or varieties that have been approved, identified or registered.

6.2 Seed quality requirements. Use seed harvested in the current year that meets the requirements of GB/T 41363 for grade two quality or better.

7 Raising seedlings from seed

7.1.1 Clear stones and weeds from the field and plough deeply to more than 20 cm.

7.1.2 Broadcast 600 kg to 1500 kg of commercial organic fertilizer and 150 kg to 450 kg of nitrogen-phosphorus-potassium compound fertilizer of the potassium sulfate type, grade 15-15-15, per hectare, rotary till deeply to 10 cm to 20 cm, and harrow level and fine. The commercial organic fertilizer is to comply with NY/T 525; fertilizer is to be used in accordance with NY/T 496 and NY/T 1868.

7.1.3 Make raised beds 120 cm to 150 cm wide, with furrows 20 cm wide and 20 cm to 30 cm deep.

7.2 Sowing. Sow between the end of June and the first ten days of August, using 75.0 kg to 97.5 kg of seed per hectare broadcast evenly over the seedbed; press lightly so that the seed is in full contact with the soil, cover with crop straw or shade netting, keep the soil moist after sowing, and remove the covering 7 to 10 days later on an overcast day or in the evening.

8 Land preparation and ridging

8.1.1 Before sowing or planting, plough deeply to 25 cm to 35 cm so that the soil is level

and fine, free of stones and free of weeds. A drainage ditch is advised around the plot to prevent water standing in the field.

8.1.2 Broadcast 1200 kg to 2400 kg of commercial organic fertilizer and 450 kg to 750 kg of nitrogen-phosphorus-potassium compound fertilizer of the potassium sulfate type, grade 15-15-15, per hectare as a base dressing. The commercial organic fertilizer is to comply with NY/T 525; fertilizer is to be used in accordance with NY/T 496 and NY/T 1868.

8.2 Ridging. The ridge top is 35 cm to 40 cm wide, the spacing between ridges is 80 cm to 90 cm, and the furrow between ridges is 25 cm deep.

9 Planting

9.1.1 Sow between the middle and end of July and the middle and end of August.

9.1.2 Sow in hills or in drills, placing the seed directly on the ridge top and pressing lightly so that it is in full contact with the soil, two rows to a ridge at a row spacing of 20 cm, using 8.25 kg to 12.25 kg of seed per hectare.

9.1.3 Shade after sowing; for the first three days the relative soil moisture content is advisedly held at about 90 %, then reduced gradually to 60 % to 70 %; guard against water standing in wet weather.

9.1.4 In the following spring, thin or fill in as needed, advisedly to 12000 plants per hectare.

9.2.1 Transplant from the end of October until the ground freezes, or from the last ten days of February to the first ten days of April of the following year.

9.2.2 Use healthy seedlings with a well-developed root system, of even development, undamaged, free of disease spots and free of rot.

9.2.3 Open holes or a furrow on the ridge top and water them; once the water has soaked in, plant in the holes or furrow at a row spacing of 18 cm to 20 cm and a plant spacing of 20 cm to 25 cm, then cover with soil and firm it.

9.3.1 Plant at the end of October, or in February to March of the following year, when the soil is free of frost.

9.3.2 Use healthy one-year-old roots that are fairly straight, vermilion in colour, free of deformity, free of splitting, free of pests and disease, and 0.7 cm to 1.5 cm in diameter, cut into sections 5 cm to 6 cm long as seed roots.

9.3.3 Where soil moisture is good, lift and plant in one operation. Open a furrow 4 cm to 6 cm deep on the ridge top, two rows to a ridge, at a row spacing of 20 cm to 22 cm and a plant spacing of 20 cm to 25 cm; lay the seed roots flat in the furrow, cover with soil 5 cm to 6 cm deep and firm it.