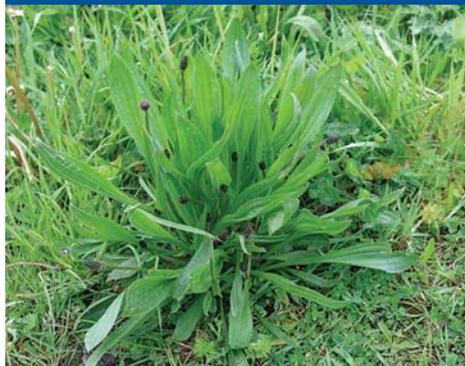


***Plantago lanceolata* L.**  
Plantaginaceae



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### ■ Morphological Description

A perennial plant that has erect, hairy, lanceolate leaves which grow from the rootstock on margined petioles in a basal rosette. Several grooved flower stalks, tipped by a short spike of tube white flowers whose brownish sepals and bracts give the spike its predominantly dark colour.

Seeds are laterally oblong and dark brown. The plant grows by the wayside. Its inconspicuous flowerhead, from which the small flowers with delicate stamens peer out, looks more like the spikelet on the end of a long stem of grass and is almost lost amongst the colourful variety of meadow flowers. On the ground, however, the narrow lance-shaped leaves that give the plant the specific epithet lanceolata, form a large rosette. The veins on the 20 to 40 cm long leaves are not branched like in other plants but run the length of the leaves. It flowers from May to September.

### ■ Geographical Distribution

**Local:** very rare in the Nile Delta.

**Regional:** rare in North and South Africa.

**Global:** Europe, rarely in North and Central Asia, New Zealand and Australia.

### ■ Ecology

The perennial plant grows in dry meadows, fields, pastures, roadsides, banks and wastepieces, preferring dry sandy soil.

### *Plantago lanceolata* L.

Sp. Pl., ed. 1, 114 1753).

### Names

**Arabic:** Azan el-kabsh **أذان الكبش**

**English:** Ribwort, Great hen plant, Rib-grass.

**French:** Plantain lanceole, Oreille de livre.

### ■ Status

Due to the rarity of the plant and its confinement to a particular site in Egypt (the Cairo-Inshas road), the plant seems to be endangered. The plant is of potential economic importance in Egypt if cultivated.

### ■ Part(s) used

Leaves, seed husks and roots.

### ■ Collection

The plants are cut during the growing season and used fresh, as juice or dried for decoctions. The leaves are cut before flowering and dried.

### ■ Preparation

Powder, pressed juice, decoction.

### ■ Uses

Oral, external, ointment.

### ■ Constituents

*Plantago lanceolata* herb contains 2-6.5% mucilage composed of at least four polysaccharides; 6.5% tannins; iridoid glycosides, including 0.3-2.5% aucubin and 0.3-1.1% catalpol; over 1% silicic acid; phenolic carboxylic acids (protocatechuic acid); flavonoids (apigenin, luteolin); minerals, including significant zinc, potassium, silicic acid; and saponin.

### ■ Pharmacological Action and Toxicity

*Plantago lanceolata* L. possesses several chemically active constituents; the effectiveness of the plant is due to its mucilage, iridoid glycosides and tannin contents. Bacteriostatic and bactericidal activity have been shown in vitro for the cold aqueous extract and attributed to the aglycone, aucubigenin. The bacterio-

static and bactericidal actions are, however, destroyed by heat, so the cold macerate form is used as a rinse, gargle, and/or cataplasm for antibacterial action. Experimental research using *P. lanceolata* has shown an inhibitory effect on mouse ear edema.

In laboratory tests, plantain reduced plasma lipid, cholesterol, b-lipoprotein, and triglyceride concentrations in rabbits with atherosclerosis; it also increased isolated guinea pig and rabbit uterine smooth muscle tone. The iridoid glycoside aucubin has stimulated laxative actions in mice, and has also demonstrated protective effects on liver cells. Plantain contains mucilage, which produces demulcent and emollient actions. The iridoid glycosides, aucubin and catalpol, show antibacterial activity when isolated from fresh plants.

Studies on humans have found positive results in the treatment of chronic bronchitis and diabetes. Its antibiotic action makes it effective in febrile disorders of the lungs and bronchi, and also help with gastrointestinal problems.

Proteolytic enzymes found in the fresh leaf and the fresh or dried root make *Plantago lanceolata* useful as a gentle internal vasoconstrictor for milk intestinal inflammation.

Hepatoprotective activities have been attributed to aucubin.

The herb is used to alleviate irritation in catarrh of the upper respiratory tract (effects of mucilage and tannins).

*Plantago lanceolata* is a non-toxic medicinal plant.

### ■ Pharmacopoeia

DAB 10.

Pharmacopoeia Helvetica VII.

German Pharmacopoeia.

Swiss Pharmacopoeia.

### ■ Pharmaceutical Products

Not available.

### ■ Traditional Medicine and Indigenous Knowledge

**History:** Some old books call the species *Costa canina* in allusion to the prominent veinings in the leaves that earned it the name "Ribwort" and this feature is the origin of the mediaeval name of *Quinquenervia*.

Another old popular name was 'Kemps'. The stalks

of the plant are particularly tough and wiry, and it is an old game with country children to strike the heads one against the other until the stalk breaks. The Anglo-Saxon word for a soldier was "cempa", and we can thus see the allusion to 'kemps'.

The plant was at one time considered a fodder plant, but cultivation was never seriously taken up. Gelatinous substances extracted from the seeds have been used at one time for stiffening some types of muslins of other moving fabrics. The plant is highly respected in folk medicine in Africa and Vietnam.

### ■ Traditional Medicinal Uses

- Allergic and other cases of rhinitis
- Anthelmintic
- Bronchial spasm
- For the recuperation of the lungs after serious pulmonary diseases
- Gastritis and enteritis
- Nasal and middle ear catarrhal conditions
- Nervous and dry coughing
- Short term palliative for painful and irritating urinary conditions
- Wound healer

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