
**Heading of Caloro, a midseason variety, 139 days after planting.**


**Heading of Texas Patna 49, a late variety, 139 days after planting.**

is very late in the field in California, headed in short days after 129 days, but did not head under longer days before the termination of the experiment. This variety apparently has a very long juvenile stage before photoperiodic induction can occur.

The late-planted four Japanese varieties behaved in a similar fashion to American varieties — heading response being definitely correlated with earliness in the field. Japan 1—Eikou—had its optimum photoperiod at about 15 hours in contrast to all other varieties tested. This variety, which is very early when field-planted, was thus quite insensitive. Japan 2—Oba So—early in the field, was more sensitive to daylength, heading 19 days later in a 15-hour day and 20 days later in an 18-hour day. Japan 3—Yamanaka No. 2—and Japan 4—Miho No. 111—while heading rapidly under optimum short days, were very sensitive to daylength and did not head in longer days. This reflected their classification as late varieties when field-planted.

Many other growth characters of the plants used in these experiments were observed. Germination and emergence of the seedlings appeared to be independent of daylength. Also, no trends were indicated in effects of daylength on the amount of tillering, the average height at full heading, or the grain and straw yields of the plants. The number of kernels per head was affected in some varieties, with increasing kernel numbers corresponding to increasing daylength.

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## Nematode-free

# Garlic Planting Stock

Plants propagated vegetatively, rather than by true seed, frequently carry diseases in the vegetative parts. One of the diseases of garlic, the stem and bulb nematode, is carried in the cloves and has become widely established.

The stem and bulb nematode, a tiny worm hardly visible to the naked eye, invades the leaf tissues of garlic and may seriously reduce yields. It is a difficult disease to control because lightly infested bulbs showing no symptoms may be planted into clean land. Once introduced into a field, the stem and bulb nematode, which also infests such weeds as miner's lettuce and nightshade, may persist in the soil for many years.

Soil fumigation commonly increases yields on heavily infested land, but it is expensive and does not completely eradicate the pest. As yet no satisfactory method has been found to kill the nematode in the garlic cloves of planting stock.

In 1950, workers at Davis selected for experimental work, a number of lines of California Late garlic from commercial fields. After several years of selection, nematode-free planting stock became available for planting on clean land in an effort to produce planting stock for commercial use. Lassen County established an ordinance to prevent uninspected garlic from being planted in the county, and a program for certification of nematode-free planting stock has been established by the State. Other areas in California where clean land is available are organizing to produce certified planting stock. The first planting stock for commercial production is expected to become available in the autumn of 1960.

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