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SASKATCHEWAN

# Factors Influencing Performance of Fall Planted Garlic 2002

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FUNDED BY:  
AGRICULTURE DEVELOPMENT FUND

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Agriculture  
and Food

## Factors Influencing Performance of Fall Planted Garlic

Fall planting garlic has the potential to increase yields providing the crop survives the winter. Studies conducted by the University of Saskatchewan in 1992 and 1993 identified little need to mulch fall-planted garlic. The trial results suggested that mulching the crop actually reduced yields and exacerbated problems with weed control. However, commercial growers reported limited or variable success with fall planting the crop, primarily due to problems with winter kill. These differing responses to fall planting may reflect; 1) differences in the site ie; snow cover or b) differences in the winter-hardiness of the planting material.

This trial evaluated the influence of fall mulching on the overwinter survival and subsequent yield performance of a number of garlic genotypes. The trial was conducted at the Department of Plant Sciences Horticulture Fields Research Station in Saskatoon. The site features a clay soil and is well sheltered. The planting material was collected from local growers, seed companies and local retailers. The trial was planted in early October. Field conditions were excellent at planting with abundant soil moisture. Each genotype was planted in twin 4 m long rows with 50 cm between rows and 8 cm between cloves in the row. Half of each plot was mulched with 15 cm of barley straw just after freeze up (late October). There was limited rainfall following planting and the winter was unusually warm and dry. Limited snowfall coupled with several mid-winter thaws resulted in minimal snow cover for the duration of the winter. Standard management practices were employed during the following growing season. The straw mulch was removed once the crop began to emerge in late-April. The crop was harvested once the tops began to senesce. Plant stands, yields and bulb characteristics were evaluated following the harvest.

Mulching delayed emergence of the crop in the spring - however, plant stands and bulb yields were all improved by mulching. The degree of response to mulching treatment varied greatly between genotypes. Some genotypes completely winter-killed without mulch but did well with the mulch. In a few cases, mulching actually reduced overwinter survival and yields.

In summary - although mulching fall-planted garlic represents a considerable additional cost, this practice may represent a good insurance measure, particularly at exposed sites or when relatively cold sensitive garlic types are being grown.

### Improvement in performance of 14 fall-planted garlic lines due to straw mulching

	<b>Stand</b>	<b>Yield</b>	<b>Bulb weight</b>	<b>Cloves/bulb</b>
<b>Mean</b>	+31%	+ 46%	No Difference	No Difference
<b>Range</b>	0-84%	0-100%		