

TITLE: Studies on alternate dryland crops: the evaluation of chickpea, lentil and dry pea varieties. SARC, Huntley 1990.

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PROJECT LOCATION: MSU - Southern Agricultural Research Center, Huntley, MT 59037

OBJECTIVES: To evaluate and compare the yield, quality, and biomass production of large seeded legumes under dryland cropping.

RESULTS: The yield of chickpeas as compared to dry peas and lentils are described in Table 1. Both the large (Surutato and UC-5 varieties) and small seeded (Garnet and Sarah varieties) significantly out yielded both the dry pea and lentil varieties. The results demonstrate an economic yield level comparable to feed barley grown under dryland.

SUMMARY: The 1990 results are similar to data obtained in 1988, 89. Both the large salad chickpeas and the smaller export chickpeas produced yields which would compete with and give a larger return to the producer than would feed barley. The chickpeas have a potential to produce a crop under very low moisture levels, and are resistant to insect and grasshoppers. Montana dryland environments are not conducive to serious disease problems on chickpeas, which is also a plus for the potential to grow chickpeas in Montana.

FUTURE PLANS: We will continue to evaluate chickpea varieties under dryland cropping. We are very encouraged by the yield results from the past three years. In 1990 we expanded the study to include trials at various Research Centers in Montana where we feel chickpeas can be realistically grown. The plans are to continue the study for at least three more years.

TABLE 1 . 1990 DRYLAND LARGE SEEDED ANNUAL LEGUME TRIAL, SARC HUNTLEY, MT.

VARIETY	YIELD LBS/AC	100 SEED WT/GMS	PLANTHT INCHES
GARNET CHICKPEA	1688.04	17.60	11.50
SARAH CHICKPEA	1508.63	15.85	8.75
UC-5 CHICKPEA	1465.36	44.95	13.00
SURUTATO CHICKPEA	1359.88	55.50	14.00
MELROSE AUSTRIAN WIN	886.21	12.08	15.00
UMATILLA FIELDPEA	791.73	22.05	12.25
BREWER LENTIL	635.57	7.15	11.50
CRIMSON LENTIL	600.91	4.40	10.25

***** STATISTICAL TABLE *****

EXPERIMENTAL MEANS	1117.04	22.45	12.03
TOTAL OBSERVATIONS	32.00	32.00	32.00
NO. OF REPLICATIONS	4.00	4.00	4.00
NO. OF VARIETIES	8.00	8.00	8.00
REP. MEAN SQUARE	6774.81	.03	14.86
VAR. MEAN SQUARE	*****1333.33		16.10
ERROR MEAN SQUARE	*****	1.95	4.84
ERROR DEGREES OF FREEDOM	21.00	21.00	21.00
F TEST FOR REPS.	.28	.02	3.07
F TEST FOR VAR.	30.87	682.94	3.33
STANDARD ERROR	156.13	1.40	2.20
STANDARD ERROR OF THE MEAN	78.07	.70	1.10
C.V. 1: (S/MEAN)*100	13.98	6.22	18.29
C.V. 2: (S OF MEAN/MEAN)*100	6.99	3.11	9.14
LSD (0.05)	229.59	2.05	3.24

LRGLEG90.LGD
LRGLEG.STT