

8.1 STRAW INCORPORATION BY PLOUGHING, 1987

NAS 206 ML (CC94)
3rd Year**Summary**

Following a crop of sugar beet, Galahad winter wheat was drilled on 22 October. Standard farm practice was applied to the growing crop. At harvest, to maintain consistency and to assess the long term effect of straw incorporation the yield was recorded on all trial plots.

No significant yield difference was measured.

Object

To assess the effect of incorporating straw by ploughing on the establishment and yield of the following crop and on its long term agronomic effect.

This trial was one of a series carried out on four ADAS Experimental Husbandry Farms, in addition to the Norfolk Agricultural Station.

Treatments - all straw chopped at harvest (last applied in full to the 1985 cereal crop, grown before the sugar beet crop of 1986)

<u>Within 5 days of combine</u>	<u>At least 21 days after chopping</u>
1. Burn and plough	-
2. Plough	-
3. -	Plough
4. Incorporate with tines to 10 cm	Plough
5. Incorporate with tines to 20 cm to give a thorough mix	Plough
6. Bale straw and remove	Plough

Nitrogen application (kg/ha) (all combinations of)

<u>1. Autumn applied</u>	<u>2. Spring applied</u>
(a) Nil	(c) 100 (farm standard)
(b) 40	(d) (c) - 40
	(e) (c) + 40

Three randomised blocks are used with cultivations on main plots and nitrogen treatments on sub plots.

The various straw, cultivation and nitrogen treatments listed are not used when as in 1987 the cereal crop follows sugar beet. However, to maintain consistency over the years and to measure the long term effect of straw incorporation, each years results are presented for all treatments.

Site: Morley
Soil type: Sandy clay loam over Chalky Boulder Clay

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Results 1987

Grain yield (t/ha at 85% dm)

Cultivations	Spring nitrogen	Autumn nitrogen (kg/ha)						Mean
		60	Nil 100	140	60 40 100	140		
(ESE)								(+0.079)
Burn and plough early (within 5 days of harvest)		7.41	7.63	7.60	7.61	7.68	7.58	7.59
Plough early		7.34	7.45	7.52	7.50	7.37	7.28	7.41
Plough late (within 21 days of harvest)		7.44	7.42	7.51	7.44	7.36	7.50	7.45
Incorporate early to 10 cm plough late		7.53	7.77	7.65	7.66	7.56	7.68	7.64
Incorporate early to 20 cm plough late		7.40	7.49	7.55	7.52	7.45	7.59	7.50
Bale and plough late		7.31	7.43	7.20	7.18	7.29	7.20	7.27
(ESE) Mean		7.41	7.53	7.50	(+0.039) 7.48	7.45	7.47	7.47
S.E. per main plot (10 d.f.) = +0.138 or 1.8 % of G.M. S.E. per sub plot (60 d.f.) = +0.165 or 2.2 % of G.M.								

1. No significant yield difference was measured.

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APPENDIX - NAS 206 ML (CC 94)

Straw incorporation by ploughing

Crop Diary

22 October	After a crop of sugar beet the land was ploughed to 25 cm and pressed in good soil condition
23 October	Drilled - 150 kg/ha Galahad winter wheat
10 February	Average plant count 263 m ²
3 March	40 kg/ha early nitrogen applied
22 April	140 kg/ha nitrogen applied at stem erect (G.S. 30-31)
24 April	Sportak applied at 1.0 l/ha + Cerone at 0.5 l/ha
26 May	Tilt Turbo at 1.0 l/ha
30 June	Tilt Turbo at 1.0 l/ha
3 September	Crop harvested