

ployment of the scythe being rendered difficult by the ridges." The following results were obtained:—

	Per English Bush.	Acro. Quarts.
1. Broadcast.....	25	19
2. In rows (as in potato planting) 27	17	
3. Drilled on ridges....	29	30

Thus beans sown on drills or rows have an undisputed superiority in production of seed over those sown broadcast, with an inconsiderable inferiority in the amount of straw.

The average produce of this crop is about thirty bushels per acre, the weight per bushel being sixty-two lb.

In the case of beans an early harvest is desirable, and they should never be allowed to over open. Professor Donaldson, in his excellent little work on the Cultivated Plants of the Farm, tells us that, the shrivelling of the leaves of the haulm, and the black colour of the pod, with the hardened state of the seeds, give notice of the maturity of the bean crop. They are most generally cut by the sickle low by the ground, tied into sheaves, and built into thatched ricks, or lodged in barns. The straw and the grain are very easily separated by flail, or by machine, and winnowed for use. The sheaves are tied by straw ropes or tarred twine, which lasts for years on being preserved for use. Pease in mixture are not unfrequently sown with beans, and then the pea straw serves very conveniently for being made into ropes to tie the beans. The straw of beans when well harvested, is very well relished by horses, and the husks of the pods by sheep; and it forms in any shape, a very useful short litter for pigs in sties, and for sheep confined in cots. It is in fact regarded as superior to hay for various feeding purposes; and the value of the straw is no doubt a great inducement to the cultivation of this crop, as well as the circumstance that the introduction of this crop enables the farmer to extend the length of the rotation, and throw the various white crops and clover more remote from each other.

It is of importance then that in calculating the best season for reaping, regard should be had to the condition of the straw as well as the grain, and it is well known that by allowing any crop to become fully ripe, its straw decreases in nutritious properties from the development of the woody fibre and the drying up of the juices. In a paper read to the Western District Mid-Lothian Agricultural Society, Mr. Melvin stated that while the fodder of the bean when cut in a green state was most valuable as food for horses; on the other hand, when allowed to stand until it became blackened, was as "worthless and hurtful" for this purpose as barley straw. It is his opinion that although the crop takes a much longer period to win in the field, and longer to get into condition in the stack, the best plan is to

cut as soon as the hilum of the bean within the pod gets black.

Although bean-straw is generally employed for feeding in a dry (raw) state, it appears that cooking is in some parts of the country resorted to with effect. A writer in the "Agricultural Gazette," whose bean crop was so unusually strong that he had difficulty in inducing his cattle to eat the straw, had recourse to steaming it, which he did by means of a temporary steamer of tin, with perforated holes made to fit a large pan used for brewing and other domestic purposes. The favourable effect of the steaming process was at once apparent. The bean straw was changed from a brittle dry material into a soft pulpy one, and emitted an odour not unlike that of spent grains. The cattle showed a relish for it, and instead of requiring more palatable material as a condiment, it became the incentive, and no material was found to be so strong an inducement to the consumption of other straw, as an admixture of bean straw.—The bean straw analysis, showed on comparison with an analysis of meadow hay, a double per-centage of albuminous matter, a somewhat less proportion of gum, starch, &c., being 40 in the hay to 31.63 in the bean straw.

A correspondent of the "Gardener, Florist and Agriculturist," some time ago proposed a system of harvesting beans, which, if practicable, might prove advantageous, and improve the character of bean straw without affecting the crop of grain. He suggested that, instead of tying the haulm in sheaves, and leaving them to stand in the field, that as soon as cut, women and children should be employed to pluck off the pods, to be conveyed to sheds, to dry upon hurdles suspended so that the air should circulate freely, and thus the whole crop would be preserved without the possibility of injury, by the slightest attention of a creely passing a small rake so as to turn the pods once or twice a-week; the whole expense of so collecting and storing the crop would be compensated by the preservation of the best beans, which, in the usual method of ripening, in the field, are often dropt out. The haulm likewise would prove very superior as food for horses, being well hayed and sweet, instead of rotting and hardening under exposure to the changes of weather. The gentleman to whom we refer (a Sussex farmer) fed his horses entirely with this food for sometime, and found them to thrive under it admirably, and to relish it much more than ordinary hay.

The great value of beans for feeding was well shown in the year 1825, when (as we learn from Dickson's work on the Breeding of Live Stock) a sweepstake was entered into by five East Lothian Farmers, to be claimed by the one who should be pronounced the best feeder of

cattle. In order that an equal chance should be enjoyed, an extensive dealer in Aberdeenshire, was instructed to forward 40 long-horned Aberdeen cattle, of the same age, and in equal condition; these were divided as fairly as possible among the five farmers (price £18 per head).—The cattle were put up to fatten in the second week of September; there was no restriction as to feeding. At Christmas following they were exhibited at Haddington and the improvement was most remarkable. The late Mr. Lee of Skateraw was declared the winner; he had used *boiled beans throughout in feeding*. The other competitors fed very high, as on drass and dregs, Swedish turnips, hay, bruised beans and oats. The superiority of boiled beans was here proved—a fact to which as deserving the particular attention of cattle feeders at the present day, Mr. Dickson has called special attention.

The boiling of the beans, no doubt operates, in lessening the tendency to flatulency in the animals to which they are given.

The bean, like all other crops, is subject to its peculiar maladies. Mildew, arising from, or rather consisting of, the growth of a minute fungoid parasite, is very prevalent in certain seasons, but no means are generally employed to obviate its attacks. It depends so much upon atmospheric conditions that we can do little to avert it, and the crop often ripens well in spite of its prevalence.

The Rev. Mr. Berkeley has called attention to another fungoid enemy of the bean, which he likens unto that dreadful scourge of the human race, the small-pox; it covers the pods, and when in an aggravated form, other parts of the plant also, with small bright pustules; sometimes even the seeds are affected by it. This disease has not however become of general prevalence.

The great insect enemy of the bean is a minute plant-louse, called the Bean Aphis, which swarms over the whole country in myriads at certain seasons.

AGRICULTURAL EDUCATION.

The Rev. Christopher Bird, of Choller-ton, says the young agriculturist ought to have a more enlarged and liberal education than that which prevails at ordinary English schools. It ought to be built on a deeper and broader foundation, and built with better materials—both grammatical and mathematical, and so be capable of carrying a higher and more finished superstructure. Here you will be inclined to say, well! do we not perform our duty very creditably with our present education? Yes; but I think you would do it better with a superior education—better for yourselves individually, better for your own class, and better for the