



FI HYBRIDS:

WHAT ARE THEY AND ARE THEY WORTH GROWING ON THE VEGETABLE PLOT?

INTRODUCTION

Recently it seems, to me at least, that there is some confusion as to what an F1 hybrid is, how it is produced, and whether it is worth the extra expense of growing them. I also get the feeling that some gardeners think that F1s are not “green”, that somehow the non-F1s are “better” flavourwise, and that – in the view of a minority – producing F1 seeds is akin to genetical modification, and “We all know that GM varieties are the work of the Devil!”

I hope that the following helps.

HOW TO PRODUCE TRUE-BREEDING QUALITY ‘STRAINS’

Many amateur growers of top quality flowers (as in dahlia and chrysanthemum growers) and a few vegetable folk (classic example leeks and onions) produce their own strain by selectively selecting the plants they want. So a top Jordie leek-man will choose his best leek of the year, let it self-pollinate, collect the seeds, grow them on and then choose the best from the seedlings produced. After several years of this sort of selection of the “best” he will have as perfect a leek as he can, and variation between the ones he grows for shows will be almost entirely down to subtle variations in the growth environment. Without perhaps knowing it, our Jordie leek-man has genetically selected...he has accumulated in his “Own Strain” (as he says on his Show Card) all the genes that gave maximum circumference and maximum length of the blanched part and perfect form and colour of the green unblanched part.

What our Durham friend has done on his plot, commercial growers – those who produce the seed that we buy – have been doing for hundreds of years. That is how the non-F1 varieties that we buy have been produced. So buy Ailsa Craig or Moneymaker tomatoes and you are buying seeds, the result of self-pollination of Ailsa Craig or Moneymaker, which breed true and give what the label says. The difference between non-F1 varieties is the result of what the commercial seedsman has been aiming for in that particular variety.

Take cabbages. They all have, in the dim and distant past, been selectively grown from a wild cabbage that lives on the coast and mainly on chalk cliffs and shingle ridges. And from that one parent we have summer varieties, winter varieties (some with rough “savoy” leaves and some with smooth leaves), spring cabbages (that form “greens” but will heart-up if left) and red cabbages. The company Clucas, who were based near Burscough when I was a student (are they still? Might be worth a visit) selected for a savoy that had very attractive dark blue-green leaves, bulked up quickly in late autumn, tasted good, and could withstand our cold and wet Lancashire winters. They called it Ormskirk. Every year, Clucas had some of their savoy growing in a glasshouse away from all other brassicas and into which no bee could enter. Those Ormskirk either self-pollinated or were allowed to pollinate each other, but no pollen from any other cabbage was not allowed in there. Thus they produced the next lot of Ormskirk seeds.

But notice how there are several strains of savoy, or summer cabbages and so on. Each strain is different because the producer has selected traits that he or she required. Take summer cabbages. Some grow smaller than others



and some are pointed so that you can get more into the row. Back to savoys: January King is an alternative to Ormskirk, and you will choose it if you prefer a red-tinged cabbage.

HOW TO PRODUCE AN F1 VARIETY

You take two true-breeding strains and cross them. This is not easy, for if you simply plant them next to each other many seeds produced will be by self-pollination and only some will be an F1 cross. You have to do the crossing. So the seed producer gets the two strains, call them A and B. As the flowers develop, the producer removes to stamens from all the B strain plants so that they cannot produce pollen. Thus the B strain is pollinated with pollen from the A strain, and its seeds are an F1 hybrid between A and B.

It follows that far more work is involved producing F1s so F1s are more expensive. The parent strains must be kept, true-breeding, every year. And every year the cross must be made, involving the time-consuming removal of stamens from one of the strains.

SO IS THERE AN ADVANTAGE IN F1s?

An F1 hybrid has the useful traits of both parent strains. So if one strain had excellent flavour and another long shelf-life, put the two together and you have a better supermarket product! For instance, most F1 brussels sprout varieties have fairly precise timings when the sprouts will *all* be ready on the plant. Thus Montgomery is ready for picking at Christmas, but will stand into the New Year, and because all the sprouts are ready together (unlike the non-F1s), you can but them as “sticks”. Contrast that with the non-F1 Bedord Fillbasket: when the bottom sprouts are ready for picking the ones halfway up are still pea size.

Similarly leeks. You can get F1s that mature in early autumn (e.g. Megaton), autumn and early winter (e.g. Belton), and those that will go on into spring (e.g. Kenton). Of course, these may have been produced with commercial growers in mind, but it is something that we amateurs do benefit from.

There is another major point. An F1 is not just a combination of its parents' features. When you produce an F1 you get a bit extra, something called “hybrid vigour”. So F1s tend to grow more strongly than non-F1s, and they tend to be less affected by diseases.

Today just about all sweetcorn seeds on the market are F1. Why? They have a higher sugar content than non-F1s. They taste sweeter.

But some folk think that it is all about commercial growing. Not so.

I have some good friends who are market gardeners in the Hesketh Bank area, have umpteen acres of greenhouses, and grow tomatoes.

“I am growing the F1 Favorita as my cherry tomato and the F1 Shirley as my main large tomato,” I said. “I grow one or two more varieties, but they are my favourites on flavour.”

“We cannot grow them,” said my pals. “You see they have been produced for you amateurs, but their skins are too thin. We must grow varieties that ripen slowly and have thicker skins, like the old Moneymaker. Our tomatoes must withstand being transported to market and there have a long shelf life.”



CONCLUSION

F1 hybrids are produced because they have the virtues of non-F1 strains, plus a little extra “umph”. The old non-F1s and heritage varieties are fine, but they lack the growth of F1s. I grew one plant of the heritage tomato Robin Hood last season. They tasted OK, but not really “better” than Shirley or Cossack F1s, and that plant produced only a third of the crop of my F1s. I grow three F1 sprouts and three F1 leeks (I keep the seeds for at least two years so cost is reduced) and have a better crop than when I grew only the one old variety. And the taste of F1s is sometimes much better than non-F1s (see Sweetcorn, above).

So for me, F1s please, mostly.

Malcolm Greenhalgh