

Off the tobacco road

UK cigarette manufacturers have reached a crucial stage in the development of substitute tobacco. **Allan Piper** reports

CIGARETTES containing what have become known as "supplements" could be on the UK market within 6 to 9 months. Rigorous health trials, recommended by the UK Independent Scientific Committee on Smoking and Health, should be completed soon, and three major tobacco companies with British interests—Carreras Rothmans, Gallahers and Imperial Tobacco—are then expected to submit their results to the committee.

The committee is an advisory body to the Department of Health and Social Security (DHSS) set up in 1973 under the chairmanship of the Vice-Chancellor of Birmingham University, Dr R. B. Hunter. If it is satisfied that the findings meet the guidelines it laid down last year, the committee is expected to recommend the licensing of supplements for immediate commercial development in Britain.

One company won't be on the early bandwagon. Courtaulds decided last month to hold back on its development of a tobacco substitute. The decision, however, was merely the commercial judgment of a company temporarily sidestepping an area of heavy pioneering expenditure which is already covered by the others in the field. Once supplements have been broadly sanctioned, of course, Courtaulds can jump straight back into the arena, reasonably certain that the £3 million, which it needs to carry its own product, Tabrelle, through the Hunter tests, is unlikely to disappear down the drain. The company will be up to two years behind those already through the trials. But it can take this course because Tabrelle is essentially similar to the other products being tested by the tobacco companies.

Two types

There are, in fact, only two basic types of supplement. One is made up of largely inorganic materials called inert diluents, the other is based on organic cellulose derivatives. Both use an organic binder. On current medical reckoning—that the cigarette cancer risk stems directly from the tar content of smoke—both kinds of supplement provide a safer alternative to ordinary tobacco. Organically based varieties, such as Tabrelle and the unimaginatively named NSM ('New Smoking Material') give less than

40% of the amount of tar produced by ordinary tobacco. With Cytrel, the main inorganic variety, even that reduction can be improved two-fold. This relative advantage is reinforced further because the organic NSM produces more carbon monoxide, aldehydes and so-called furan derivatives than tobacco, perhaps posing an additional, though as yet undetermined, health threat.

In the event, none of the major tobacco companies in Britain has plumped squarely for one type of supplement rather than the other. Gallahers is maintaining an equal interest in both Cytrel and NSM. And while Carreras Rothman and Imperial Tobacco have moved more positively in one particular direction, respectively favouring Cytrel and NSM, both companies have kept their eyes on the alternative option.

These preferences have resulted in close research links between the retailing tobacco companies and the manufacturing chemical corporations. Carreras Rothman have an arrangement with Celanese, the US makers of Cytrel, while the tie between Imperial Tobacco and ICI has led to the formation of the joint consortium NSM Ltd. planned as an eventual commercial manufacturer and supplier. In Germany, the chemical giant Bayer has just terminated a liaison with Reemstma, following the spectacular failure there last year of two brands containing supplements. As for co-operation between the companies and the Hunter Committee, this is coordinated by the Tobacco Advisory Council and has apparently been effective, in spite of misgivings within the industry about the Committee's strong academic make-up.

Three stages

The Hunter guidelines separate tests into three stages, with an interim check at the end of Stage I. This first stage, already passed safely, included comprehensive studies of smoke chemistry, together with inhalation tests using rats and monkeys over a period of at least six weeks. Stage II involved short-term clinical studies of respiratory irritation in human volunteers. At this stage the tobacco companies were also free under the guidelines to conduct

controlled consumer trials to assess such characteristics as flavour acceptability.

The third stage, now virtually completed, involves the most rigorous tests of all. Studies at this level fall into three categories: carcinogenicity trials, which include the classic mouse skin-painting test; reproduction and teratological studies, designed to assess possible side-effects of smoking supplements; and, finally, life-long inhalation studies on rats and other species, which in Britain has already led to the controversy over the use of baboons and beagles.

In a world context the Hunter guidelines are unique, and most interested corporations outside Britain hope that once their UK competitors have borne the expense of breaking new ground, Hunter Committee approval can be used to ward off future criticism of supplements on respective domestic fronts. The £3 million cost for the tests carry total development costs for the tobacco companies in Britain to around £10 million each over the past five or six years.

When the committee licences the supplements, marketing will begin. For historical tax reasons they are still grouped with additives in the Finance Act, but new legislation to bring them under the Medicine Act is expected to be through parliament within the first couple of months of next year. Without hitches, cigarettes containing up to 25% supplement could thus be on the British market by March 1977.

NSM Ltd already has a large production plant ready at Ardeer in Scotland, a £14 million investment by Imperial Tobacco. Reports indicate that Courtaulds could have Tabrelle in commercial production within a year of the Hunter green light for an additional investment of £10–20 million. And from across the Atlantic, Celanese can be expected to provide all the Cytrel needed in the early stages of UK marketing. Similar products such as the Anglo-American Batflake and Bayer's still mysterious blend can also be expected to emerge rapidly once they have passed through the Hunter tests.

Failure to win licences at the first attempt would mean a major setback, but the search for a safer cigarette will certainly not be abandoned, even though supplements are by no means universally accepted as the most effective way to reduce the smoking risk. Improvements to existing filters, particularly through ventilation, offer another possibility, as does an increased porosity of cigarette papers. The search meanwhile continues for that elusive premium blend of tobacco which gives maximum possible taste with minimum possible tar. □